DRAFT
ENVIRONMENTAL IMPACT REPORT
FOR THE
WAL-MART PARCEL MAP AND EXPANSION PROJECT

VOLUME II: TECHNICAL APPENDICES

(PM 03-17; 2044 FOREST AVENUE)

STATE CLEARINGHOUSE #2004012077

DECEMBER 2006

Prepared by:

CITY OF CHICO
Community Services Department, Planning Division
411 Main Street
Chico, CA 95928

Consultant:

PMC

APPENDICES

A) Notice of Preparation/Initial Study
B) Chico Wal-Mart Store Expansion Traffic Impact Study
B2) Memorandum – Wal-Mart South - Determination of Baney Driveway Location
C) Draft Air Quality Analysis of the Wal-Mart Store Expansion Project in Chico, California
D) Hanover Wetlands Delineation and Bio Assessment
E) Special Status Species Tables
F) Cultural Resources Information
G) Wal-Mart Supercenter Economic Impact Analysis: South Store Expansion Chico, California

APPENDIX A - NOTICE OF PREPARATION/INITIAL STUDY

Form A
Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044
(916) 445-0613 state.clearinghouse@opr.ca.gov

SCH#_____

PROJECT TITLE Parcel Map 03-17(Wal-Mart/PacLand)	
LEAD AGENCY City of Chico	CONTACT PERSON Patrick Murphy, Senior Planner
STREET ADDRESS 411 Main Street, P.O. Box 3420	PHONE 530-895-4851
CITY Chico ZIP CODE 95927	COUNTY Butte

PROJECT LOCATION

COUNTY Butte	4A. CITY/NEAREST COMMUNITY Chico		
CROSS STREETS Forest Avenue/Wittmeier Drive			
ASSESSOR'S PARCEL NUMBER See attached	SECTION 31	TOWNSHIP 22N	RANGE 2E
WITHIN 2 MILES: STATE HIGHWAY NUMBER 99		AIRPORTS	
RAILWAYS Union Pacific	WATERWAYS		

DOCUMENT TYPE

CEQA	■NOP ☐Early Cons ☐Neg Dec ☐Draft EIR	☐ Supplement/ Subsequent EIR (Prior SCH No.) ___ ☐Other ___	**NEPA**	☐NOI ☐FONSI ☐Draft EIS ☐EA	**OTHER**	☐Joint Document ☐Final Document ☐Other ___

LOCAL ACTION TYPE

☐General Plan Update ☐General Plan Element ☐General Plan Amendment ☐Master Plan	☐Annexation ☐Specific Plan ☐Community Plan ☐Redevelopment	☐Rezone ■Land Division (Subdivision, Parcel Map, Tract Map, etc.) ☐Use Permit	☐Waste Management Plan ☐Cancel Ag Preserve ☐Other ___

DEVELOPMENT TYPE

01. ☐Residential	125,889 Sq.ft. addition to existing 97,124 Sq.ft. Total 223,013 Sq.ft.	Acres 24.69	Employees _	05. ☐Water Facilities	Type ___	MGD ___
02. ☐Office				06. ☐Transportation	Type ___	
03. ■Shopping/ Commercial		Acres 2.42	Employees _	07. ☐Mining	Mineral ___	
04. ☐Industrial			Employees _	08. ☐Power	Type ___	Watts ___
				09. ☐Waste Treatment	Type ___	
				10. ☐OCS Related		
☐Educational ___ ☐Recreational ___				11. ☐Other		

TOTAL ACRES 27.11 **TOTAL JOBS CREATED** N/A

PROJECT ISSUES DISCUSSED IN DOCUMENT

01. ☐Aesthetic/Visual	11. ☐Minerals	21. ■Traffic/Circulation
02. ☐Agricultural Land	12. ☐Noise	22. ☐Vegetation
03. ■Air Quality	13. ☐Public Services	23. ☐Water Quality
04. ■Archaeological/Historical	14. ☐Schools	24. ☐Water Supply
05. ☐Coastal Zone	15. ☐Septic Systems	25. ■Wetland/Riparian
06. ■Economic	16. ☐Sewer Capacity	26. ■Wildlife
07. ☐Fire Hazard	17. ☐Social	27. ☐Growth Inducing
08. ☐Flooding/Drainage	18. ☐Soil Erosion	28. ☐Incompatible Land Use
09. ☐Geological/Seismic	19. ☐Solid Waste	29. ■Cumulative Effects
10. ■Jobs/Housing Balance	20. ☐Toxic/Hazardous	30. ■Other Land Use and Planning

FUNDING (APPROXIMATE) Federal $ N/A State $ N/A Total $ N/A

PRESENT LAND USE/ZONING/GENERAL PLAN USE See attached

PROJECT DESCRIPTION See attached

SIGNATURE OF LEAD AGENCY REPRESENTATIVE _____ **DATE** _____

Note: Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. from a Notice of Preparation or previous draft document) please fill it in.

REVIEWING AGENCIES

☐Resources Agency
☐Boating/Waterways
☐Conservation
■Fish and Game
☐Forestry
☐Colorado River Board
☐Department Water Resources
☐Reclamation
☐Parks and Recreation
☐ Office of Historic Preservation
■Native American Heritage Commission
☐San Francisco Bay Conservation and Development Commission
☐Coastal Commission
☐Energy Commission
☐State Lands Commission
■Air Resources Board
☐Solid Waste Management Board
☐SWRCB: Sacramento
☐RWQCB: Region # 5
☐Water Rights
☐Water Quality

■CalTrans District 3
■Department of Transportation Planning
☐Aeronautics
☐California Highway Patrol
☐Housing and Community Development
☐Statewide Health Planning
☐Health
☐Food and Agriculture
☐Public Utilities Commission
☐Public Works
☐Corrections
☐General Services
☐OLA
☐Santa Monica Mountains
☐TRPA
☐OPR – OLGA
☐OPR – Coastal
☐Bureau of Land Management
☐Forest Service
☐Other
☐Other ___

FOR SCH USE ONLY

Date Received at SCH
Date Review Starts
Date to Agencies
Date to SCH
Clearance Date
Notes

Catalog Number
Applicant
Consultant
Contact
Address

REVISED INITIAL STUDY

City of Chico
Environmental Coordination and Review

ROUTE TO:

[X] City of Chico - Responsible City Department(s)
[X] State Clearinghouse
[X] Trustee & Responsible Agencies [Butte County, Caltrans (District 3), Air Pollution Control District, RWQCB, Fish & Wildlife Service, Fish & Game]

1. **Project Description**

A. **Project Name:** Parcel Map 03-17 (Wal-Mart/PacLand)

B. **Project Location:** 2044 Forest Avenue in the City of Chico. The project site is bordered on the north by Baney Lane, on the east by Forest Avenue, on the south by Wittmeier Drive (formerly Talbert Drive) and the west by State Highway Route 99 (see attached project location map).

C. **Type of Application(s):** Boundary Line Modification/Vesting Tentative Parcel Map; building permit for store expansion.

D. **Assessor's Parcel Number(s):** 002-370-055, 002-370-057 & 002-170-004

E. **Current City Zoning;** CC Community Commercial

F. **Current City General Plan Designation:** Community Commercial & Commercial Service

G. **Project Description:** The project consists of (1) a boundary line modification (BLM) to be processed via the recording of a parcel map, which includes the abandonment and relocation of numerous easements on the site (sanitary sewer, storm drainage, water, utilities, and public bike path) and the creation of an access easement for Parcel 2 across Parcel 1 and (2) the expansion of the existing Wal-Mart store and parking lot in southeast Chico. The BLM/parcel map will reconfigure the lot lines of two existing parcels (a 10.36 acre parcel and a 16.75 acre parcel) to create a 24.69 acre parcel (Parcel 1) and a 2.42 acre parcel (Parcel 2). The existing Wal-Mart store and area for the planned store expansion will be located entirely on Parcel 1. Parcel 2 will be located at the southeast corner of the site along Forest Avenue and will be developed at a later date.

The CC Community Commercial zoning district allows a wide range of potential uses, some permitted as a matter of right and some via use permit. The proposed Wal-Mart expansion project involves a 97,124 square foot (s.f.) addition to the existing 125,889 s.f. retail building, which will bring the total square footage of the Wal-Mart store to 223,013 s.f. No use permit is required for the expansion. The proposed addition of 505 parking spaces will bring the total number of parking spaces to 1,134. The proposed expansion project will be situated between the existing Wal-Mart store and Wittmeier Drive to the south. Landscaping and infrastructure improvements will also be constructed. For Parcel 2, the applicant has discussed their intention to locate a gas station and restaurant on the site. For purposes of this environmental analysis, these possible uses are assumed. Approval of a use permit would be required for the development of a gas station. A use permit would also be required for the restaurant, should the restaurant include a drive-through window.

The existing Wal-Mart store sells general consumer merchandise, including household and soft goods, automotive, electronics, pharmacy, food, grocery, beverage, clothing, kitchen, hardware, sporting goods, and other merchandise of all kinds. The proposed expansion will create a "Wal-Mart Supercenter." The main change or focus of the expansion is to add grocery sales as part of the business (approximately 60,000 s.f.). The remaining 37,000 +/- s.f. of expansion area would be for storage and general merchandise. It is anticipated that access to the Wal-Mart site would be provided by seven driveways, six of which presently exist (one at the cul-de-sac of Business Lane, three on Baney Lane, one on Forest Avenue, and one on the cul-de-sac off Wittmeier Drive). The proposed seventh driveway would also be located off Wittmeier Drive. An access easement for Parcel 2 is proposed across Parcel 1 off Wittmeier Drive. Delivery truck access is provided via the Business Lane driveway, located at the southern end of the existing cul-de-sac. The applicant will be required to dedicate additional right-of-way along Wittmeier Drive and Baney Lane.

Note 1: The City prepared an Initial Study for this project concluding that the project had the potential to affect transportation and circulation, air quality, biological resources and cultural resources and that although the project could have a significant effect on the environment, there would be no effect in this case because revisions to the project have been made or agreed to by the project proponent and a Mitigated Negative Declaration was prepared and circulated for

public review on 1/16/2004. The City received comments from Caltrans and from the public that were focused on two areas of concern: the potential for the project to affect traffic and the potential for the project to cause a negative economic impact that could ultimately result in physical blight in the surrounding area and in downtown Chico. The City has considered these comments and as a result has prepared this revised Initial Study.

Note 2: A Parcel Map involving one of the subject properties was approved by City Council on July 15, 2003, but was never recorded (Parcel Map PM 03-06). At that time, the applicant proposed to divide the existing 10.36 acre parcel into two parcels. A mitigated negative declaration was adopted for the Parcel Map. Unlike the prior Parcel Map, approval of the current Parcel Map application would facilitate the expansion of the existing Wal-Mart store. As a result, this Initial Study has addressed potential impacts associated with the proposed Boundary Line Modification/Parcel Map, as well as the proposed Wal-Mart expansion project. Should the proposed Parcel Map be approved, it will supersede the prior map approved by the City Council.

H. **Environmental Setting:** The subject properties are situated between the Wittmeier Auto Center to the south and a gas station, hotel and vacant parcel to the north. A large commercial/retail shopping center is located further to the north, along the south side of E. 20th Street. Forest Avenue bounds the property to the east and State Highway Route 99 (SHR 99) to the west. The existing 16.75-acre parcel currently consists of a 125,889 sq. ft. Wal-Mart store, a 629-space parking lot, and landscaping. The existing 10.36-acre parcel is currently undeveloped. The undeveloped portions of the properties are relatively flat with areas that appear to have been disked on a regular basis. Vegetation on the majority of the undeveloped portion of the project site is typical of disturbed upland grasslands and supported upland grasslands, perennial, and seasonal wetland communities. In all, the wetlands delineation prepared for the project identified approximately 0.269 acres of potential wetland areas along the northern portion of the proposed Parcel 1, which is immediately south of the existing Wal-Mart parking lot. Several areas along the northern order of the currently undeveloped property exhibited wetland indicators including standing water, saturated surface soils, and hydrophytic vegetation. Based upon the nature of the vegetation present, the consulting biologist for the project has indicated that it is likely that several of the potential wetland areas were a product of landscape irrigation. However, three potential wet areas were identified on the site that did not appear to be influenced by the landscape irrigation. The nearest water surface is Crouch Ditch located approximately 1,000 feet south of the subject property. Surrounding land uses include Community Commercial (fast-food restaurant, hotel, gas station) to the north; Service Commercial (car dealership) to the South; Office Commercial to the East; and State Highway 99 to the west.

I. **Public Agency Approvals:** CITY OF CHICO - Boundary Line Modification/VestingTentative Parcel Map; building permit.

J. **Applicant:** PACLAND
10121 Southeast Sunnyside Road
Clackamas, Oregon 97015

K. **Owners:** Wal-Mart Real Estate Business Trust (existing 16.75 acre parcel) Wal-Mart Stores, Inc. (existing 0.36 acre parcel) 2001 SE 10th Street Bentonville, AR 72712

L. **Initiated By:** PacLand (applicant)

Contact: Patrick Murphy, Senior Planner
Prepared By: Patrick Murphy, Senior Planner

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

[ ] Aesthetics
[X] Air Quality
[X] Biological Resources
[X] Cultural Resources
[ ] Geology/soils
[ ] Hazards/Hazardous Materials
[ ] Hydrology/Water Quality
[X] Land Use and Planning
[ ] Noise
[ ] Open Space/Recreation
[ ] Public Services
[ ] Population/Housing
[X] Transportation/Circulation
[ ] Utilities

PLANNING DIRECTOR DETERMINATION
On the basis of this initial evaluation:

[ ] I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

[ ] I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

[X] I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

[ ] I find that the proposed project MAY have a potentially significant impact or have a potentially significant impact unless mitigated, but at least one effect has been adequately analyzed in an earlier document pursuant to applicable legal standards, and has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

[ ] I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards and have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION Including revisions or mitigation measures that are imposed upon the proposed project. No further study is required.

Signature

Date

Patrick Murphy
Printed Name

For Kim Seidler, Planning Director

insert page with parcel map from 2044 Forest Avenue, between Baney and Wittmeier Drive

insert page with vesting tentative parcel map 03-17 from Robertson and Dominick, Sheet 1 of 2

insert page with vesting tentative parcel map 03-17 from Robertson and Dominick, Sheet 2 of 2

insert Wal-Mart conceptual plan map for Wal-Mart Store #2044-03

2. EVALUATION OF ENVIRONMENTAL IMPACTS

- Responses to the following questions and related discussion indicate if the proposed project will have or potentially have a significant adverse impact on the environment.

- A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources cited in the parentheses following each question. A "No Impact' answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g. the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g. the project will not expose sensitive receptors to pollutants based on a project-specific screening analysis).

- All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operation impacts.

- Once it has been determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is *appropriate* if there is substantial evidence that an effect may be significant. If there is at least one "Potentially Significant Impact" entry when the determination is made, an EIR is required.

- Negative Declaration: "Less than Significant With Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less than Significant Impact." The initial study will describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section 4, "Earlier Analysis," may be cross-referenced).

- Earlier analyses may be used where, pursuant to tiering, a program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration [Section 155063(c)(3)(D)]. Earlier analyses are discussed in Section 4 at the end of the checklist.

- Initial studies may incorporate references to information sources for potential impacts (e.g. the general plan or zoning ordinances, etc.). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated, source list attached, and other sources used or individuals contacted are cited in the discussion.

- The explanation of each issue should identify:
  a) the significance criteria or threshold, if any, used to evaluate each question, and
  b) the mitigation measure identified, if any, to reduce the impact to less than significant.

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
A. Aesthetics: Will the project or its related activities				
1. Have a substantial adverse effect on a scenic vista, including scenic roadways as defined in the General Plan, or a Federal Wild and Scenic River (Big Chico Creek)?			X	
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
3. Affect lands preserved under a scenic easement or contract?				X
4. Substantially degrade the existing visual character or quality of the site and its surroundings including the scenic quality of the foothills as addressed in the General Plan?			X	
5. Create a new source of substantial light or glare, which would adversely affect day or nightime views in the area?			X	

Discussion:

A. 1-5. The subject properties are not located in the foothills or along a state scenic highway and are not protected by any scenic easements or contracts. Additional development of the properties will not significantly affect views of the foothills. The properties are located within an urbanized area and are located adjacent to commercial development along the State Highway Route 99 (SHR-99) corridor. While the properties do not contain any natural scenic resources as identified by the General Plan, any future development will be highly visible from the SHR-99 corridor, which is identified as one of the key "city entrances" in the General Plan. Policy CD-G-4 of the City's Community Design Element of the General Plan sets forth the desire to "emphasize key city entrances" and states that such entrances are important in establishing a sense of arrival and departure to Chico and in creating a stronger sense of regional identify. Policy CD-G-4 further states that the entrances should be "enhanced through the treatment of landscape and built form within these areas."

With respect to large-scale commercial and industrial projects, Community Design Element policy CD-G-39 encourages "a human scale in the design of large-scale projects" and that "the perceived overall size of large projects should be mitigated to the extent possible through, for example, sensitive massing, appropriate scaling of building facades, articulation and organization of buildings, the use of color and materials, and the use landscape screening." Lastly, Community Design Element policy CD-G-41 "encourages innovative site design and treatment of surface parking areas" and that "surface parking areas should be organized and treated in such a fashion as to avoid the appearance of a sea of asphalt."

Should the proposed expansion of the Wal-Mart store be implemented on proposed Parcel 1 of Parcel Map 03-17, the proposed 97,124 s.f. addition will take place on the southern end of the building, with some new construction also taking place along the west and east elevations. Along the eastern and southern sides of the building, proposed truck loading bays are proposed, which will be visible from the SHR-99 corridor. Screening walls are proposed to shield the view of the trucks. The proposed addition to the existing building will be similar in design and massing to the existing building. Additions to west and east sides will help to provide articulation to sides of the building and avoid long, straight walls and minimize the typical "big box"

look. The Wal-Mart expansion project has been reviewed by the City's Architectural Review Board, which reviewed the proposal for compliance with City standards relating to landscaping and parking lot lighting, in addition to reviewing the building design for compliance with applicable City design guidelines and practices. Should other uses be proposed for Parcels 1 or 2 of Parcel Map 03-17, such buildings would also be required to be reviewed by the Architectural Review Board. As a result, aesthetic impacts with respect to future development of the subject properties are considered to be **less than significant.**

Environmental Issues:	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
B. Air Quality: Will the project or its related activities result in:				
1. Conflict with or obstruct implementation of he applicable air quality plans (e.g., Northern Sacramento Valley Air Basin 1994 Air Quality Attainment Plan, Chico Urban Area CO Attainment Plan, and Butte County Air Quality Management District Indirect Source Review Guidelines)?	X			
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.	X			
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	X			
4. Expose sensitive receptors to substantial pollutant concentrations?	X			
5. Create objectionable odors affecting a substantial number of people?				X

Discussion:

B.1, 3, 4. Future development of either Parcel I or Parcel 2 of Parcel Map 03-17, whether it is the expansion of the existing Wal-Mart store or any other use allowed by the CC zoning district, would generate both construction and operational emissions. In order to assess the project's potential air quality impacts, an air quality analysis was prepared for the proposed Wal-Mart expansion project (Jones & Stokes, December 2002).

The prior air quality analysis states that construction activities for the proposed project would result in short-term impacts on ambient air quality in the area through the generation of emissions of reactive organic gases (ROG) and oxides of nitrogen (NOx), which are precursors to ozone, and particular matter less than or equal to 10 microns in diameter (PM 10). Emissions would be generated from construction equipment exhaust, employee vehicle exhaust, dust from clearing land-exposed soil eroded by wind, and volatile organic compounds from asphalt paving. It is anticipated that construction activities would continue for

approximately 2 months, emissions would vary from day to day, depending on the level of activity, specific operations, and prevailing weather. The findings of this report would be applicable to any commercial development that occurs on proposed Parcels 1 and 2. Based upon a computer model (URBEMIS2001) used for the prior air quality analysis, construction-related emissions would exceed the Level A and B significance thresholds for criteria pollutants established by the Butte County Air Quality Management District (BCAQMD), which constitutes a **potentially significant** impact.

Operation of the proposed Wal-Mart Supercenter could result in long-term impacts to ambient air quality in the area through the generation of emissions of ROG and NOx, which are precursors to ozone, and PM 10. Emissions would be generated from patron vehicle exhaust, employee vehicle exhaust, and dust from vehicles using the local roadways. The prior air quality study was based upon estimated trip generation data contained within a prior traffic analysis (Omni-Means, 2002). This traffic analysis is presently being amended and revisions to the traffic analysis may also result in revisions to the prior air quality analysis. There is potential for trips generated by the operation of the project to violate air quality standards or result in a cumulatively considerable contribution to existing air quality violations thereby conflicting with implementation of applicable air quality plans. The air quality analysis will be reviewed and updated as follows:

- Review URBEMIS-2002 program model inputs used to project construction emissions through the various phases of construction.
- Review the local analysis of carbon monoxide impacts to nearby roadways and intersections.
- Compare the inputs to the URBEMIS-2002 computer program to the traffic generation contained in the project traffic analysis, and determine if the appropriate input parameters and thresholds of significance recommended by the Butte County APCD were used.
- Identify any impacts and air quality mitigation measures that should be considered.

The guidelines of the Air Pollution Control District will be summarized and the local meteorology and current air quality conditions will be described, current efforts to attain state and federal air quality standards will be discussed, and the project's air quality impacts will be assessed. Sensitive receptors will be identified as well as the potential sources of air pollution resulting from the project including mobile emissions from project-generated traffic, and dust generated during project grading and construction. The air quality discussion will address the project's effects upon local and regional air quality, in particular upon localized carbon monoxide concentrations. CO emissions will be quantified, and the potential for the project to result in exceedences of State and Federal standards will be determined.

The potential for project emissions to exceed the thresholds of the Air District for regional significance will also be evaluated through computer modeling. Mitigation measures for air quality impacts will be identified as appropriate (typically, this would include consideration of Transportation Demand Management [TDM] measures in conjunction with the project). For any identified significant impacts, available mitigation measures will be discussed. This includes estimating the effectiveness in reducing impacts and evaluating whether available mitigation measures can reduce impacts to a less-than-significant level.

The project could result in **potentially significant** impacts to air quality.

B. 5. The project is the expansion of the existing Wal-Mart to create a "Wal-Mart Supercenter." The main change or focus of the expansion is to add grocery sales as part of the business (approximately 60,000 s.f.), The remaining 37,000 +/-s.f. of expansion area would be for storage and general merchandise. These uses do not involve operations that would be expected to create or generate objectionable odors. **No impact** is anticipated.

Environmental Issues:	Potentially Significant	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
C. Biological Resources: Will the project or its related activities result in:				
1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species as listed and mapped in the MEA or in other local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	X			
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in the MEA or in other local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.	X			
3. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	X			
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
5. Result in the fragmentation of an existing wildlife habitat, such as blue oak woodland or riparian, and can increase in the amount of edge with adjacent habitats.				X
6. Conflict with any local policies or ordinances, protecting biological resources?	X			

Discussion:

C.1 & 2. The subject properties are located in the middle of an urban area and are surrounded by commercial development to the north and south, by State Highway Route 99 to the west, and by Forest Avenue to the east. According to the EIR prepared for the City General Plan, there are no identified special status species located on, or in proximity to, the subject site. In addition, the property is not identified in the General Plan as a Resource Conservation Area or a Resource Management Area. However, the 10.36 acres of undeveloped grassland constituting the southerly portion of proposed Parcel 1 and all of Parcel 2 provide potential foraging habitat for the Swainson's hawk, a federally protected species. This is considered a **potentially significant** impact. Pursuant to State Department of Fish and Game (DFG) policy, the applicant shall provide 0.75 acres of Habitat Management (HM) land for each acre developed based on the net developed acreage authorized; or if established by legal nexus prior to issuance of a grading permit, the applicant may pay an in lieu fee as part of the previous parcel map application (PM 03-06), which was

approved but never recorded. The applicant did contribute monies ($22,905) to the City's Swainson's hawk mitigation account to offset the loss of 7 acres of foraging habitat. When a suitable mitigation site has been identified in the Chico area, it is the City's intent to purchase mitigation credits at that site with the monies deposited by the applicant. The applicability of the prior contribution to the current Wal-Mart expansion project will be reviewed.

C.3 & 6. The subject properties are relatively flat with areas that appear to have been disked on a regular basis for weed abatement purposes. Vegetation on the undeveloped portion of the subject properties consists of disturbed upland grasslands and supported upland grasslands, perennial, and seasonal wetland communities. Wetland plant communities on the site include cottonwood, sandbar willow, Marshpepper Smartweed, Purple Lovegrass, Tall Flatsedge, Barnyard Grass, Red Willow, Rough Cockle-bur, Spikerush, Shining Willow, and Curly Dock. Upland plant communities include Johnson Grass, Oats, Annual Ryegrass, Barley, Willow-leaved Lettuce, and Soft Chess. The applicant contracted for a wetlands delineation (Hanover, October 2002), to be conducted for the site of proposed Parcel Map 03-17, which involved an examination of soils, vegetation, and hydrological features of the site and a determination of their wetlands characteristics according to the Corps of Engineers Wetlands Delineation Manual (1987). In all, the wetlands delineation identified approximately 0.269 acres of potential wetland areas, which are potential waters of the U.S. According to the wetlands delineation report, the majority of these areas on the site that supported green vegetation late in the year (October 2002) were located closest to the existing Wal-Mart site and were likely the product of overspray from the adjacent landscape irrigation from the existing Wal-Mart parking lot. Three potential wet areas were identified on the site that did not appear to be influenced by the landscape irrigation. The nearest water surface is Crouch Ditch located approximately 1,000 feet south of the subject property.

The U.S. Army Corp of Engineers (Corps) regulates discharge of dredged or fill material into waters of the U.S. under Section 404 of the Clean Water Act (CWA). As part of the wetland delineation and verification process, the Corps will determine whether the wetlands in the project area are isolated and therefore not regulated under Section 404 of the Clean Water Act. Should the Corps determine that the 0.269 acres of wetlands are jurisdictional wetlands of the U.S., the applicant will be required to mitigate the loss of the wetlands in accordance with USFWS protocol under Section 404 of the Clean Water Act. Should the Corps determine that no mitigation is required under their jurisdiction for the filling of any or all of the 0.269 acres of wetlands on the project site, the applicant will be required to pay impact fees to the City of Chico or obtain mitigation credits at an established wetland mitigation bank consistent with the City's Best Practices Manual and City General Plan policy OS-G-9 which requires a "no net loss" of wetlands. Where loss of wetland areas are unavoidable at the project level, policy OS-G-9 requires that mitigation be provided to meet the "no net loss goal." The State Regional Water Quality Control Board also has an adopted "no net loss" of wetlands policy. A peer review of the prior biological analyses will be conducted to update and augment the discussion as necessary to incorporate the setting, analysis and to recommend mitigation. This is considered a **potentially significant** impact.

C.4 &5. Future development of Parcels 1 and 2, including the future expansion of the Wal-Mart store, will not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. There is no blue oak woodland vegetation on Parcel 1 or Parcel 2, therefore future development activities on these parcels will not result in the fragmentation of such habitat. As a result, **no impact** to migratory fish and wildlife species would result from the project.

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	Less Than Significant Impact
D. Cultural Resources: Will the project or its related activities:				
1. Cause a substantial adverse change in the significance of an historical resource as defined in PRC Section 15064.5?				X
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to PRC Section 15064.5?	X			

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	Less Than Significant Impact
3. Directly or indirectly destroy a unique pale ontological resource or site or unique geological feature?				X
4. Disturb any human remains, including those interred outside of formal cemeteries?	X			

Discussion:

D. 1 & 3. The existing 10.36-acre parcel is currently undeveloped. The undeveloped portions of the properties are relatively flat with areas with no unique geologic features. The site appears to have been disked on a regular basis. No structures are presently located on the property nor is there evidence of historic structures (foundations, rock walls, wagon wheel tracks, etc.) and the City General Plan update does not identify these features to be located in the south Planning Area of the City. The site is not an area of high sensitivity for paleontological resources and the presence of alluvial soils underlying the site would make it unlikely that these resources would be found on-site.

D.2 & 4. According to the Master Environmental Assessment prepared for the City General Plan update, the subject properties are located within an area designated as low to moderate for archaeological sensitivity. A cultural inventory and field survey was completed (Cultural Resource Specialties, October 2002). As part of the survey, the consulting archaeologist completed a record search at the Northeast Information Center of the California Historical Resources Information System at California State University, Chico. This record search revealed that a survey was completed for small portion of the site in the 1980's and that no cultural resources were identified as a result of that survey. The consulting archaeologist also conducted a field investigation of the entire project site in October, 2002. No cultural resources were encountered on the project site during the field investigation. PMC's chief archaeologist will conduct a peer review of the prior cultural inventory and field survey and will update and augment the discussion as necessary to incorporate the setting, analysis, and recommended mitigation into the EIR. There is also the potential, that previously unrecorded resources may be encountered during construction. This constitutes a **potentially significant** impact.

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
E. Geology/Soils: Will the project or its related activities:				
1. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault? Refer to division of Mines and Geology Special Publication 42.				X
b. Strong seismic ground shaking?			X	

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Seismic-related ground failure, including liquefaction?			X	
2. Result in substantial soil erosion or the loss of topsoil?				X
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
4. Be located on expensive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
5. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water, or is otherwise not consistent with the Chico Nitrate Action Plan or policies for sewer service control?				X

Discussion:

E.1. According to the General Plan Final EIR (GPFEIR) prepared for the City General Plan, the Chico Planning Area is located in one of the least active seismic regions in California and contains no active faults. However, the potentially active monocline fault threads through the eastern portion of the Planning Area, although there is no evidence it has moved in the last million years. Currently, there are no designated Alquist-Priolo Special Studies Zones within the Planning Area, nor are there any known or inferred active faults. Thus, the potential for ground rupture within Chico is considered very low. The GPFEIR noted that the urban area designated for future urban land uses contained little in the way of unique or unusual geologic features with the notable exception of the foothill areas along the eastern edge of the urban area. The subject properties are not located at the base of the foothill area.

A Geotechnical Investigation Report has been prepared for the subject properties by Kleinfelder (November 2002). According to this report, the properties are underlain by a shallow layer of alluvial gravel, sand and day (basin deposits) overlying very dense mid-Pleistocene age alluvial deposits of the Red Bluff formation. The report states that the low to moderately expansive clay, sand, and gravel soils will require special design and construction attention to reduce the potential for problems associated with expansion and contraction of these soils with future moisture variations. Based upon the results of field exploration, laboratory testing, and engineering analyses performed, the geotechnical report concludes that development of the properties is geotechnically feasible, provided the recommendations set forth in the report are incorporated into project design and construction. The City of Chico Building Department will review construction plans before a building permit is issued and the Department of Public Works Engineering Division will review and approve all grading plans to insure that all grading and structures would withstand shrink-swell potentials and earthquake activity in this area in accordance with applicable codes. Therefore, the impacts related to soils are considered to be **less than significant.**

E.2-4. Grading activities will result in the disruption, displacement, compaction and over covering of soils associated with site preparation (grading and trenching for utilities). There are no notable topographic features on the flat properties. Grading activities for the project will be limited to the project site. Future grading activities must comply with the City of Chico's Grading Ordinance and Water Quality Control Board requirements which require site specific, detailed measures to be incorporated into construction contracts

and specifications to control erosion and sedimentation, as well as to minimize impacts on existing land uses. In addition, future development will also be required to meet all requirements of the Uniform Building Code which will address potential issues of ground shaking, soil swell/shrink, and the potential for liquefaction. As a result, impacts are considered to be **less than significant** with respect to these issues.

E.5. The existing Wal-Mart store is connected to the City's sanitary sewer system. Any future development of proposed Parcels 1 and 2 of Parcel Map 03-17, including any expansion to the Wal-Mart store, will also be connected to the City's sewer system. No septic tanks are proposed as part of the project. As a result, impacts are considered to be **less than significant** with respect to these issues.

Existing Regulations:

The project is subject to the requirements of Chapter 16R.22 Grading Standards of the Chico Municipal Code which sets forth requirements for sediment control including implementation of approved erosion and, sediment control devices for all grading and filling.

A discussion of related hydrological impacts are discussed in Section G, *Hydrological Factors,* of this initial study.

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
F. Hazards/Hazardous Materials: Will the project or its related activities:				
1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
2. Create a significant hazard to the public or the environment through reasonable foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
4. Be located on a site, which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and, as a result, would it create a significant hazard to the public or the environment?				X
5. For a project located within the airport land use plan, would the project result in a safety hazard for people residing or working in the project area?				X

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
6. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
7. Impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan?				X
8. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where residences are intermixed with wildlands?				X

Discussion:

F.1-4. Construction activities typically involve the use of some volatile substances (fuel for vehicles, hydrocarbons contained in road overlay materials, etc.); however, these materials are handled according to state standards. The existing Wal-Mart store does not utilize any hazardous materials in significant quantities that pose a threat to the public. Given the commercial nature of site, any future uses on proposed Parcels 1 and 2 are also not expected to utilize any hazardous materials in significant quantities. Any handling and/or storage of hazardous materials must comply with all adopted local, State and Federal requirements for such materials.

The subject properties are not identified in the GPFEIR as an Area of Known Surface Contamination (Areas of Known Surface Contamination Figure 16-2) and the properties are not identified on the "Hazardous Waste and Substances Sites List" from the State Department of Toxics and Substances Control (2002), As such, potential impacts associated with hazardous materials are expected to be **less than significant.**

F.5-6. The subject properties are not located within any airport zone as identified in the Butte County Airport Land Use Compatibility Plan for the Chico Municipal Airport or any private airstrip. As a' result, there, will-be **no impacts** with respect to airport issues.

F-7. The subject properties are located within an area designated for commercial services in the General, Plan. The project site is currently receiving City emergency services and future development on proposed Parcels 1 and 2, including the proposed Wal-Mart expansion project, will not significantly impact the City's Emergency Response or Management Plans. As a result, impacts with respect to these issues are considered to be **less than significant.**

F-8. Because the subject properties are within a developed urban area, the site is not prone to wildland fires. As such, there will be **no impact** with respect to this issue.

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
G. Hydrology/Water Quality: Will the project or its related activities result in:				
1. Violate any water quality standard or waste discharge-requirements?				X
2. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby Wells would drop to a level which would not support existing land uses or planned uses for which, permits have been granted?				X
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?			X	
4. Substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?			X	
5. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources, of polluted runoff?			X	
6. Otherwise substantially, naturally degrade water quantity?			X	
7. Place real property within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
8. Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?				X
9. Expose people or structures to a significant risk-of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
10. Inundation by seiche, tsunami, or mudflow?				X

Discussion:

G.1. Future development of Parcels 1 and 2 of Parcel Map 03-17, including the expansion of the Wal-Mart store, will not result in the discharge of any waste beyond sewage flows typical of commercial uses as envisioned by the City General Plan and its certified Environmental Impact Report (EIR). As a result, waste discharge impacts are considered to be **less than significant.**

G.2. The existing Wal-Mart store is served by the California Water Service Company, which has adequate capacity to serve the proposed store expansion, as well as any future development on proposed Parcels 1and 2 of Parcel Map 03-17. As a result, there will be a **less than significant** impact on ground-water supplies.

G.3-6. Future development of proposed Parcels I and 2 will create an increase in urban run-off due to the creation of additional impervious surfaces and in a change in the drainage pattern on the site. The introduction of additional motor vehicles onto the project site through the provision of new off-street parking areas, and any detergents or solvents used in conjunction with maintenance of paved surfaces could introduce pollutants into the watershed and lead to surface water quality degradation. The principle pollutants of concern in urban drainage water are oils and greases, suspended solids, heavy metals, and organics. Most pollutant transport resulting from drainage flows occur with the initial rainfall after a period of minimal rainfall. This initial rainfall commonly referred to as the "first flush effect," washes accumulated pollutants such as dirt, oils, greases, lead, and various organic debris into the drainage system and then, into receiving waters. Of primary concern is the containment and treatment of the runoff resulting from the initial inch of rainfall.

Stormwater runoff from the subject properties will continue to drain to the existing City drainage basin (Fair Street Detention Pond) southwest of the site, which is sized to accommodate stormwater runoff resulting from full development of the subject parcels. The Fair Street detention pond is also designed to treat all stormwater prior to being discharged to Comanche Creek. As a result, impacts relating to stormwater runoff from future development of the properties are **less than significant.** Since future construction activities will affect more than one acre of the site, the project applicant will be required to obtain a Construction Activity Storm Water Permit or water quality certification from the California Regional Water Quality Control Board (RWQCB) prior to any construction.

G.7-10. According to Federal Emergency Management Agency (FEMA) Flood Zone Map No. 06007C0510D dated April 20, 2000, the subject properties are located in Zone X, which is outside the 500 year flood plain; therefore, future development of the properties would not expose people or structures to a significant risk of loss, injury or death Involving flooding. Seiches and tsunamis are seismically induced large waves of water. Because there are no large bodies of water nearby, the threat of seiche and tsunami is not present on the project site or in the vicinity. Similarly, given the project's location on the flat Valley floor, mudflows are not a significant concern. Impacts relating to flooding therefore, are considered to be **less than significant.**

Existing Regulation: City of Chico Storm Drainage Master Plan (2000); City of Chico Grading Ordinance.

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
H. Land Use Planning: Will the project or its related activities be inconsistent with:				
1. General Plan or Specific Plan policies or zoning regulations?				X
2. Physically divide an established community?				X
3. Conflict with any applicable Resource Management or Resource Conservation Plan?				X

Environmental Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
4. Result in substantial conflict with the established character, aesthetics or functioning of the surrounding community?			X	
5. Be a part of a larger project involving a series of cumulative actions?	X			
6. Result in displacement of people or business activity?	X			
7. Conversion of viable prime agricultural land and/or and under agricultural contract to non-agricultural use, or substantial conflicts with existing agricultural operations? (Viable agricultural land is defined as land on Class I or Class II agricultural soils of 5 acres or greater, adjacent on no more than one side to existing urban development.)			X	

Discussion:

H.1-3. The project site has a General Plan land use designation of *Community Commercial* and *Service Commercial,* and a zoning classification of *Community Commercial (CC).* The property was designated for commercial development with the adoption of the 1994 Genera] Plan (amended in I999) and was analyzed as part of the City's comprehensive economic development strategy and land use plan. The Economic Development Element of the General Plan (Chapter 6) establishes policies to maintain and enhance economic development opportunities within the City and to define a long-term framework for sustainability. The General Plan emphasizes that the City is the center of retail commercial activity and services for the Tri-County area with substantial employment, and that maintaining this regional status is essential for the economic vitality of the City. Furthermore, the General Plan states that in order to sustain its ability to provide public services for existing and future residents and fund programs for environmental protection, the City will need to enhance its revenue base through new retail, commercial, office, and industrial development. As a result, approximately 520 acres were designated for additional commercial development in the General Plan (which includes the subject property) that are not within the Downtown area. Development of the subject properties with commercial uses is consistent with the goals and policies of the General Plan (see Section H.6. below for additional discussion with respect to applicable General Plan policies).

Future development of the subject parcels will be required to comply with the General Plan and zoning designations for property. There are no Habitat Conservation Plans or Natural Community Conservation Plans applicable to the project site and the project would not divide an established community. As a result, **no impact** would occur in association with the proposed project.

H.4. The subject properties are located within an urbanized area and are located adjacent to commercial development along the State Highway Route 99 (SHR-99) corridor. Changes to the environment associated with the development of the site for commercial purposes were contemplated at the time the subject properties were designated for such uses in the General Plan. The northern half of the subject site is already developed with a Wal-Mart store and parking lot. The proposed 97,124, s.f. addition will take place on the southern end of the building with some new construction also taking place along the west and east elevations. Along the eastern and southern sides of the building truck loading bays are proposed, which will be visible from the SR-99 corridor. Screening walls are proposed to shield the trucks from view; the proposed addition to the existing building will be similar in design and massing to the existing building. Additions to west and east sides will help to provide articulation to sides of the building and avoid long, straight walls and minimize the typical "big box" look. The Wal-Mart expansion project has been reviewed and approved by the City's Architectural Review Board, which reviewed the proposal for compliance with City standards

relating to landscaping, parking lot lighting, and building design for compliance with applicable City design guidelines and practices, in addition to evaluating the project's compliance with applicable policies set forth in the Community Design Element for development along State Highway Route 99 (an entryway to the City) and for large-scale commercial projects (see Section A, Aesthetics for further information). Therefore, a **less than significant** impact would occur with respect to character, aesthetics or functioning of the community.

H.5 & 6. Approval of proposed Parcel Map 03-17 would reconfigure two existing property lines, which will facilitate the applicant's proposed expansion of the existing Wal-Mart store. The project site, however, could be developed in its present configuration with commercial uses consistent with the zoning designation for the site. The Parcel Map, therefore, is not necessary for the subject property to be developed with commercial uses. The direct physical impacts that could potentially result from such an expansion project, together with other projects in the area (including a second Wal-Mart application proposed at the north end of Chico), will be analyzed in the traffic, air quality, biology, and cultural analysis and compared and contrasted to development anticipated in the General Plan. The existing Wal-Mart store and area for the planned store expansion will be located entirely on Parcel 1. Parcel 2 will be located at the southeast corner of the site along Forest Avenue and will be developed at a later date. No persons will be displaced by future development of these parcels.

Economic/Social Impacts

There is some sentiment in the community that the planned expansion of the Wal-Mart store on the site would likely cause urban decay or blight of downtown and other existing retail environments. Further, other projects in the area (including a second Wal-Mart application proposed at the north end of Chico), could contribute cumulatively to this potential effect. An economic analysis will be conducted to analyze the **potentially significant** economic effects of the project resulting from negative effects to other commercial retail areas of the City.

With respect to analyzing social and/or economic impacts of a project, Section 15131 (e) of the CEQA Guidelines, provide the following guidance (also reiterated in Public Resources Code Sections 21080(e) and 21082.2(c):

"Economic or social information may be included in an EIR or may be presented in whatever form the agency desires.

(a) Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes."

Section 15382 of the CEQA Guidelines states the following:

"Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

The subject site was designated for commercial development with the adoption of the 1994 General Plan (amended in 1999) and was analyzed as part of the City's comprehensive economic development strategy and land use plan. Specifically, the Land Use and Economic Development Elements of the General Plan differentiate between the development of malls and discount stores and the retail activities of Downtown Chico. The Economic Development Element of the General Plan (Chapter 6) establishes policies to maintain and enhance economic development opportunities within the City and to define a long-term framework for sustainability. The General Plan emphasizes that the City is the center of retail commercial activity and services for the Tri-County area with substantial employment, and that maintaining this regional status is essential for the economic vitality of the City. The General Plan states that in order to sustain its ability to provide public services for existing and future residents and fund programs for environmental protection, the City will need to enhance its revenue base through new retail, commercial, office, and industrial development. As a result, approximately 520 acres for additional commercial development were designated in the General Plan (which includes the subject property) that are not within the Downtown area.

The Land Use Element of the General Plan (Chapter 3) recognizes that much of the present retail and service businesses in Downtown are student-oriented, with eating, drinking and entertainment establishments comprising a large portion of business. Furthermore, many of the businesses in the downtown area can be categorized as "specialty stores" such as antique shops, art shops/galleries, craft stores, etc, The General Plan

states that the long-term success of Downtown will depend on its ability to nurture existing businesses, attract high employment service uses, and maintain a pleasant environment for pedestrians where one-of-a-kind shops, entertainment facilities, and dining establishments can attract patronage from the entire City and beyond.

An economic impact study will determine the extent to which the proposed Wal-Mart merchandise expansion, the second proposed Wal-Mart store and cumulative development will impact existing City of Chico grocery stores and existing retailers in the downtown Chico area. The economic analysis will conduct the following tasks:

Estimate of Incremental Store Sales. Develop two store sales estimates: annual sales at the existing Wal-Mart Discount store; and annual sales at the proposed expanded Supercenter. For each scenario, sales estimates will be prepared for both general merchandise and food sales. The Supercenter sales for each category will then be compared to the existing Discount store sales, resulting in an estimate of incremental store sales for general merchandise and food sales. If the City of Chico can provide information regarding sales taxes generated by the existing store, this information will be used to generate the estimate of total existing store sales (i.e., taxable and nontaxable). If such information cannot be provided due to confidentiality concerns, we will develop estimates based upon publicly available information such as the Wal-Mart 10-K prepared for the SEC.

Retail Leakage Analysis. Determine retail leakage model by estimating market area retail spending potential based upon population, income, and consumer spending patterns, and determine the extent to which a market area is or is not capturing this sales potential. Retail categories in which spending is not fully captured are called leakage categories, while retail categories in which more sales are captured than are generated by residents are called "attraction categories".

The Market Area definition will be determined by examination of competitive store locations, discussions with other major store retailers in the City of Chico regarding where shoppers live, review of the City of Chico General Plan and its goal of providing neighborhood shopping centers, and discussions with City of Chico officials. Preliminary review of public documents relevant to this project suggests the market area will comprise the Tri-County area.

The leakage analysis will be operated both for the present time period (the year 2002 being the most recently available) and a relevant projected time period (i.e., the year the expanded Supercenter store is anticipated to open). The purpose of the latter will be to determine the extent to which relevant retail demand is expected to grow among the City and Market Area's projected population by the time of the Supercenter store opening. The projection will also facilitate manual adjustments to account for any new general merchandise or food stores that may have opened in the City of Chico after 2002, the year reflected by the available taxable sales data.

The present time period results will indicate the extent to which the City of Chico is currently capturing existing regional demand in categories relevant to Wal-Mart (e.g., general merchandise and food sales), the extent of this attraction, and the extent to which there may be other regional potential to capture relevant sales. Moreover, the results will indicate the extent to which future area population and income growth may impact the demand for new Market Area sales, coincident with the stabilization of the proposed Chico Supercenter.

Existing Comparable Store Impacts. A quantitative approach will be used to estimate the extent of existing comparable local sales that might be diverted by a new (or expanded) big box retailer. The approach takes into consideration the extent to which existing local retailers share in regional demand, the extent to which local retailers experience net regional attraction or leakage in key retail categories, and the anticipated distribution of the prospective retailer's (Wal-Mart's) sales. The data points most critical to this analysis include the actual City sales data, the retail leakage analysis, and the projected Wal-Mart sales.

This quantitative analysis will be paired with tours of representative area general merchandise stores, full-service grocery stores, and other food stores selling a mix of fresh, frozen, and dry goods comparable to a Wal-Mart Supercenter (excluding convenience stores such as 7-11). The purpose of the tours will be to generally assess the nature and strength of their operations and to qualitatively assess the degree to which the Wal-Mart Supercenter may compete with existing stores, the associated level of sales losses that may be experienced by these stores (in general), and the duration of these prospective (if any) losses. These findings will be evaluated relative to the City of Chico General Plan goal of providing neighborhood shopping centers. Stores will be identified through discussions with City of Chico staff, Internet research, store listings and estimated sales identified by Claritas (a national provider of demographic and economic data), field research, and, if necessary, supplemental research with Dun & Bradstreet.

Downtown Retail Impacts. A tour of the City of Chico downtown will be conducted to develop an understanding of the retail niche served by downtown Chico retailers, to understand the downtown's retail dynamics, and to determine if downtown retailers might be impacted by the expansion of the existing Chico Wal-Mart Discount store to a Supercenter. The proposed Wal-Mart Discount store expansion is located in southeast Chico, in an area zoned for retail. The City of Chico General Plan Land Use Element recognizes that downtown is a different market than the big box retailers in southeast Chico and that the General Plan EIR made specific findings that southeast Chico not compete with downtown. A goal of this task will be to determine if these findings will likely hold true relevant to the Wal-Mart store's expansion.

City of Chico staff will be interviewed to gain an understanding of the history of downtown Chico retailing, to learn about the City's downtown economic development efforts, and to understand the geographic definition of the downtown. The Downtown Chico Business Association has defined the downtown area and associated businesses through the development of a business directory, which is available through their office. The Downtown Business Association business directory will be used as a basis for fieldwork, supplemented as necessary through findings. The Downtown Business Association will be contacted to obtain the Business Association's perspective on Wal-Mart's plans to expand the existing Chico Wal-Mart Discount store to a Supercenter.

Physical Blight Determination. Based upon the above findings, an estimate will be developed of the extent to which opening of the Supercenter may or may not contribute to physical blight in the City of Chico. This blight determination would be predicated upon a finding of negative economic impact so severe that stores might close as a result and that it would be expected that, those buildings and/or property, rather than being reused within a reasonable time, would remain vacant, deteriorate and lead to the decline of the associated or nearby real estate. If no or minimal negative impact is found, then blight would not be a logical result. Store closures are not sufficient to cause blight, as such closures could provide an opportunity for new retailers or other tenants to occupy the vacated space or for property owners to engage in economic development or redevelopment efforts to improve properties. Commercial brokers active in the City of Chico will be interviewed to obtain their perception of the potential for commercial leasing activity as well as their perception of the future and strength of retailing in Chico.

Retail leakage analysis findings will also be applied, identifying possible retail gaps that could suggest alternative tenants for potentially vacated retail spaces. The extent to which potentially vacated spaces could be transitioned to other, non-retail uses, thus obviating any potential for blight, will be addressed.

H.7. The subject properties are not designated for agricultural uses by the General Plan, nor are they are suitable for agricultural use due to its location within the middle of a highly developed urban area designated for commercial uses. The designation of the site for commercial uses was evaluated in 1994 as part of the General Plan Environmental Impact Report. As a result, impacts related to the conversion of agricultural lands are considered to be **less than significant.**

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Noise: Will the project or its related activities result in:				
1. Exposure of residents in new hotels, motels, apartment houses, and dwellings (other than single-family dwellings) to interior noise levels (CNEL) higher than 45 dBA in any habitable room with windows closed?				X
2. Exposure of sensitive receptors (residential, parks, hospitals, schools) to exterior noise levels of 60 dBA L or higher?			X	

	Significant Impact	Significant With Mitigation Incorporated	Significant Impact	
3. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
4. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
5. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
6. For a project located within the airport land use plan, would the project expose people residing or working in the project area to excessive noise levels?				X
7. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Discussion:

I.1-4. The nature of future commercial development on the subject properties will not prompt a significant increase in ambient noise levels within or in proximity to the project site. Noise from the subject properties will be compatible with the existing noise environment, which is dominated by SHR 99 and adjacent commercial and retail businesses. The closest residential subdivision to the project site is located east of Forest Avenue, approximately 450 feet from the edge of the project site. Given the distance from the site to this subdivision, and the fact it is separated by Forest Avenue, future noise generated from on-site activities will be **less than significant**.

I.5. Temporary and single event noise levels will be created during the construction phase of future commercial development, on the subject properties. In addition, while ground-borne vibrations may occur, such activities are temporary in nature and are not anticipated to result in unusual nor excessive ground-borne vibration or noise levels. Activities will be short-term and limited to the extent practical, to daytime hours (7:00 a.m. to 9:00 p.m., Mondays through Fridays 10:00 a.m. to 6:00 p.m. on weekends and holidays), pursuant to Chico Municipal Code (Section 9.38.060). As specified in the Noise Ordinance, construction outside these hours must comply with established thresholds. Construction-related noise impacts, therefore, are considered to be **less than significant**.

I.6-7. The subject properties are not located within any zone of the Butte County Airport Land Use Compatibility Plan and is not located in proximity to any airstrip. The properties are not located within an airport land use plan area nor are they located within two miles of an airport or within the vicinity of a private airstrip. No housing is proposed as part of the project.

Existing Regulation: CMC Section 19.60.080, Noise

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
J. Open Space/Recreation: Will the project or its related activities:				
1. Affect lands preserved" Under an open space contract or easement?				X
2. Affect an existing or potential community recreation area?				X
3. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
4. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?				X

Discussion:

J.1-3. The subject properties are not designated as a community recreation area or neighborhood park by the General Plan and are not zoned for open space. Future development of commercial businesses on the subject properties are not expected to significantly impact the local park system or recreational facilities. As a result, there would be no impact with respect to these issues.

J.4. An existing bicycle path (and easement) which traverses the site of the existing Wal-Mart store is proposed to be relocated to accommodate the proposed Wal-Mart expansion. Any relocation of the existing bike path/easement will need to provide the same connection from Forest Avenue to the rear of the site. As such, impacts upon local bikeways will be less than significant.

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
K. Public Services: Will the project or its related activities have an effect upon or result in a need for altered governmental services in any of the following areas:				
1. Fire protection?			X	
2. Police protection?			X	
3. Schools?			X	

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
4. Parks and recreation facilities? (See Section J Open Space/Recreation)			X	
5. Maintenance of public facilities, including roads, canals, etc.?			X	
6. Other Government services?			X	

Discussion:

K.1. Fire protection to the subject properties are provided by the City Fire Department. Serving future commercial development will not require additional fire fighting equipment or personnel due to the infill nature and limited size of the project.

K.2 & 6. The City Police Department is responsible for enforcing State laws and City ordinances in the area of the project site. Due to the infill nature of the future commercial development, no measurable impacts related to provision of services will occur and it is expected that the Department will continue to utilize existing resources to patrol the area. No other governmental services will be impacted by the project.

K.3-5. Due to the commercial nature of the project, the proposal will not Impact the local school system or park system and due to the infill nature of the project, maintenance of public facilities will not be significantly impacted.

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
L. Population and Housing: would the project or its related activities:				
1. Induce substantial-population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
2. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
3. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
4. Conflict with General Plan population growth rates for its planning areas in conjunction with other recently approved development?				X

Discussion:

L.1 & 4. Future development of the subject properties will not induce population growth, as the subject site is an infill parcel surrounded by existing urban development. The project will not conflict with General Plan growth rates for the planning area since the proposed project is consistent with the City General Plan and zoning designations for the site.

L.2-3 see Section H, *Land Use and Planning,* above.

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
M. Transportation/Circulation Factors: Will the project or its related activities result in:				
1. Traffic volumes, which exceed established Level of Service (LOS) standards on roadway segments or at intersections, or which do not meet applicable safety standards? Based on General Plan policies, significant impacts would generally result if traffic exceeded LOS C on residential streets, LOS D on arterial and collector streets/intersections, and (under specific circumstances) LOS E in built-out areas served by transit.	X			
2. The absence of bikeway facilities in the general locations identified in the General Plan, consistent with guidelines in the *Chico Urban Area Bicycle Plan,* or failure to meet applicable design requirements and safety standards?		X		
3. Travel characteristics, which are not consistent with standards established in the *Butte County Congestion Management Plan* (CMP), or other General Plan policies related to Transportation Systems Management (TSM)?	X			
4. Substantial impact on existing or proposed public transit systems including rail and air traffic?		X		
5. Effects on existing parking facilities or demand for new parking not provided for by the project?		X		
6. Increase traffic hazards to motor vehicles, bicycles, pedestrian or other traffic?		X		
7. A change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X

Discussion:

M.1 & 3. This initial study covers the planned expansion of the Wal-Mart store (on proposed Parcel 1) and future construction on the remaining vacant parcel (proposed Parcel 2). For the purposes of this Initial Study, the traffic analysis assumes that the proposed expansion of the Wal-Mart store will occur directly south of the existing store, as depicted on the site plan provided by the applicant (see page 5,d.). The traffic analysis also assumes that proposed Parcel 2 will be developed as a gas station and fast food restaurant. Should the Wal-Mart expansion not occur on proposed Parcel 1, it is possible that the remainder of Parcel 1 could be developed with other commercial uses allowed under the existing CC Community Commercial zoning. Such future development would be required to prepare an additional traffic report if the uses result in the generation of more than 75 peak-hour vehicle trips, as required by the General Plan.

The proposed Wal-Mart Expansion project will include the addition of 97,124 s.f. to the existing 125,889 s.f. Wal-Mart store. In addition, it is anticipated that proposed Parcel 2 (2.42-acres) in the southeast corner of the site will be developed in the future as a fast-food restaurant including a drive-thru window and a gas station with 12 fueling positions. The 2.42-acre parcel will not be developed as part of the proposed Wal-Mart expansion project, but has been included within the traffic analysis for the project. Access to the proposed Wal-Mart expansion project is proposed to be provided via one existing driveway on Forest Avenue, three existing driveways on Baney Lane, one new Wittmeier driveway, and one existing Business Lane driveway. Delivery truck access is provided via the Business Lane driveway, located at the southern end of the existing cul-de-sac. An existing bike easement located in the area proposed for the expansion project is proposed for abandonment and relocation to the southern boundary of proposed Parcels 1 and 2, terminating at Forest Avenue.

A traffic study was prepared for the project (Omni-Means 2002) the findings of which are summarized below. This traffic analysis is presently being reviewed by the City's Department of Public Works and may be revised and augmented as deemed necessary.

- East 20th Street/Forest Avenue
- Baney Lane / Forest Avenue
- Wittmeier Drive (formerly Talbert Drive)/Forest Avenue
- Baney Lane/Project Driveway #3 (middle driveway on Baney Lane)
- Baney Lane / Project Driveway #4 (easternmost driveway on Baney Lane)
- Forest Avenue / Project Driveway #5

Existing Conditions:

Existing turning movement traffic volume counts at the above intersections were conducted on Thursday September 12, 2002 and on Saturday October 19, 2002. At the study intersections, weekday AM and PM and Saturday peak hour turning movement volume counts were obtained. The AM peak hour is defined as the one-hour of peak traffic flow counted between 7:00 AM and 9:00 AM and the PM peak hour is defined as one-hour of peak traffic flow counted between 4:00 PM and 6:00 PM under typical weekday conditions. The Saturday peak hour is defined as the one-hour of peak traffic flow counted between 12:00 PM and 4:00 PM on a typical Saturday. Consistent with the City General Plan, a peak-hour LOS of "D" is taken as the threshold for acceptable traffic operations at all study intersections, except the 20th Street/Forest Avenue intersection. A LOS of "E" along a transit route may be considered to be acceptable pursuant to General Plan policy T-G-12, provided that the City makes the following findings" (1) there is no practical and feasible way to mitigate the lower level of service, and (2) the uses resulting in the lower level of service are of clear, overall public benefit.

According to the traffic study, the Wittmeier Drive/Forest Avenue and Baney Lane/Project Driveway #4 intersections are currently operating at LOS "E" during Saturday peak hour conditions. Under current conditions, neither of the intersections meet Caltrans peak hour volume warrant-11 (Urban Areas) based upon peak hour traffic demands indicating that the volume of minor street traffic experiencing unacceptable delays is currently not significant enough to warrant the installation of a traffic signal. All other study intersections are currently operating at LOS "D" or better. Under existing conditions, Baney Lane (a private street) allows two-way travel from Forest Avenue to Business Lane. A traffic diverter which once prohibited west-bound traffic on a portion of Baney Lane has been removed. The removal of the existing diverter at the Baney Lane/Business Lane intersection will not impact traffic flows leaving the Wal-Mart site, however, because the traffic islands to be installed at the Baney Lane/Driveway #4 and Baney Lane/Driveway #5 will prohibit left turns onto Baney Lane, thereby forcing vehicles eastward to Forest Lane.

Existing Conditions, plus Project:

The traffic study analyzed the long-term and short-term traffic impacts associated with the proposed project. The study indicates that the total project (Wal-Mart expansion project and future development of the adjacent 2,42 acre parcel) will generate a total of 310 AM peak hour trips, 492 PM peak hour trips and 713 Saturday-peak hour trips. Directional trip distribution estimates that 30% of the traffic will come from the north on

Forest Avenue, 10% from the south on Forest Avenue, 20% from the east on 20th Street, and 40% from the west on 20th Street.

The existing signage located on Forest Avenue and project access driveways on Forest Avenue and Wittmeier Drive will help to direct customer access away from Baney Lane. In addition, the outbound movements onto Baney Lane will be limited to right-turn out only movements. This will help to direct more customers to Forest Avenue, instead of Business Lane to gain access to destinations north of the site. The driveway onto Forest Avenue will be restricted to right-turn only inbound and outbound movements due to the existing island in Forest Avenue.

According to the traffic study, with the proposed project, the 20th Street/Forest Avenue intersection is projected to operate at LOS "E" in the PM peak hour. Application of practicable mitigation measures can be implemented to mitigate this impact to the fullest extent possible (i.e. widening of each of the intersection legs); although indications are that this intersection would still operate at LOS "E" under cumulative conditions in the future. With the project, the 20th Street/Forest Avenue intersection and the Baney Lane/Project Driveway #4 intersections are projected to operate at Saturday Peak hour LOS "F" conditions. The Wittmeier/Forest Avenue intersection is also projected to operate at Saturday peak hour LOS "F" conditions, including LOS F at PM peak hour. With build-out of the project, the Wittmeier Drive/Forest Avenue, Baney Lane/Driveway #4 and the Driveway #5/Forest Avenue intersections will all meet the Caltrans Peak-Hour-Volume Warrant-11 (Urban Areas) for a traffic signal under Saturday peak hour conditions. Exceedence of the City's LOS standards is a **potentially significant** impact.

Cumulative Conditions

Cumulative traffic volumes were forecasted utilizing the City of Chico's Build-out Traffic Model, the existing traffic counts and the Baney Lane/Business Lane Traffic Circulation Analysis Report (Omni-Means, May 1999). The cumulative analysis includes the projected traffic from the recently opened Krispy Kreme facility adjacent to the existing In-N-Out Burger restaurant. The new Butte College facility being constructed south of the project site would not result in any additional peak-hour trips compared to the development of a commercial use on that site (which was evaluated as part of the General Plan EIR as well as the City's traffic model).

Under cumulative base plus project conditions, the East 20th Street/Forest Avenue intersection is projected to operate at LOS "F" conditions during weekday PM and Saturday peak hour. The Wittmeier Drive/Forest Avenue intersection is projected to operate at "cumulative base plus project" weekday AM peak hour LOS "E", PM and Saturday peak hour LOS "F" conditions. The Baney Lane/Project Driveway #4 intersection is projected to operate at "cumulative base plus project" Saturday peak hour LOS "F" conditions. The intersection is also projected to meet Caltrans peak hour volume warrant-11 (Urban Areas) based upon Saturday peak hour traffic demands. Exceedence of the City's LOS standards is a **potentially significant** impact.

In reviewing the previous parcel map involving the subject property (PM 03-06), Caltrans submitted comments on the traffic report prepared for the project. In their letter dated 5/30/03, Caltrans staff indicated that the traffic analysis should address potential impacts to the entrance and exit ramps for Highway 99, as well as cumulative traffic impacts to Highway 99. City Public Works Department staff responded to these comments in a memo dated 1/13/04, a copy of which is attached to this initial study and incorporated herein by reference. This memo reiterates that the City's traffic model already assumes and includes traffic volumes that would be generated by commercial development of the subject properties in the future build-out traffic projections.

Queuing Analysis:

An analysis of critical queues was performed to determine any potential queue capacity/blocking problems experienced by the traffic circulation surrounding the project site. The analysis focused on the eastbound left at Wittmeier Drive/Forest Avenue, the eastbound left at Baney Lane/Forest Avenue, the westbound left and northbound right at Baney Lane/Driveway #4. The queuing analysis determined that the eastbound/left-turn movement at Wittmeier Drive/Forest Avenue intersection has an overflow queue length for the PM and Saturday peak hour. In order to provide adequate queuing at this Intersection, the left turn pocket will need to be striped as a two-way left turn lane from 155 feet to the beginning of the cul-de-sac bulb. This will allow 445 of available storage, which can accommodate queue lengths of up to 20 vehicles. To accomplish this, street-side parking will need to be prohibited on the entire west leg of Wittmeier Drive. This issue of eliminating parking along Wittmeier Drive will be considered by the City's Internal Affairs Committee of the Council. Should the Committee determine that parking is necessary along Wittmeier Drive, Wal-Mart will be required to dedicate additional right-of-way along this roadway to accommodate the necessary roadway improvements and on-street parking.

The queuing analysis concludes that both the westbound left and northbound right turning movements Baney Lane/Driveway #4 have adequate storage and that no additional improvements are warranted at this location. The queuing analysis also concludes that the eastbound left at Baney Lane/Forest Avenue has adequate storage

for the Saturday peak hour and that no additional improvements are warranted with respect to this issue at this location. Public Works staff indicated that additional traffic along Baney Lane may adversely affect the turning movements exiting from the neighboring parcel on the north side of Baney Lane. As a result, Public Works staff have stated that Wal-Mart will need to provide for additional queuing along the south side of Baney Lane for eastbound traffic to mitigate this potential impact on the neighboring property to the north.

M.2 & 4. Future development of proposed Parcel 2 or the remainder of proposed Parcel 1 would not impact rail or air traffic as customers will be from the local area. An existing bus stop/shelter currently exists along the project's Forest Avenue frontage, just south of the existing driveway situated between Baney Lane and Wittmeier Drive. The City may require a future bus stop turnout at this location. Should the Public Works Department determine that this turnout is necessary, a condition will be placed on the parcel map requiring such improvements at the time of future construction on proposed Parcel 2. A bike path (within an existing public easement) currently crosses the northernmost parcel (16.75 acre parcel). As part of the proposed parcel map, the existing bike path and bike path easement will be relocated south of the proposed Wal-Mart expansion project, and will parallel Wittmeier Drive. Upon completion of the proposed project, the bike path will provide the same connection as currently exists (from Business Lane to Forest Avenue). As a result, impacts to the public transit system and bike path corridor will be **less than significant**.

M.5. The City of Chico Municipal Code requires new development to be appropriately designed to accommodate off-street parking, which meets City development standards. Future plans will be reviewed by City staff to ensure that acceptable parking is provided as required by Title 19. As part of the Wal-Mart development plan, the applicant is proposing to expand the existing parking lot to accommodate a total of 1,134 parking spaces which exceeds the City's parking requirements. The Planning Commission will make the determination as to whether the requested increase in parking will be granted. As a result, impacts relating to off-street parking are considered to be **less than significant**.

M.6. The project will maintain an existing bus turnout and shelter on Forest Avenue. With the planned relocation of the bicycle path, and implementation of street improvements, hazards to motor vehicles, bicyclists and pedestrians will be **less than significant.**

M.7. The project would not result in any impacts to air traffic patterns or air traffic levels, as customers would be from the local area and would not fly to the area to shop at Wal-Mart. Nor would the project result in a change in location of air traffic that would result in substantial safety risks. **No impact** to air patterns or air traffic levels would result from this project.

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
N. Utilities: Will the project or its related activities have an effect upon or result in a need for new systems or substantial alterations to the following utilities:				
1. Water for domestic use and fire protection?			X	
2. Natural gas, electricity, telephone, or other communications?			X	
3. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			X	
4. Require or result in the construction of new water or *wastewater* treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
5. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
6. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			X	
7. Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
8. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
9. Comply with federal, state, area local statutes and regulations related to solid waste?			X	

Discussion:

N.1-7. Future development on the subject properties will be connected to the public sewer system and no significant changes in demand for any utilities is expected to result from the project. Domestic water, electricity, gas and telephone are currently serving the project area and are available to serve future development of the subject properties. SBC will provide telephone services. Pacific Gas & Electric will provide electric and natural gas services. The developer may have to relocate existing overhead 115kV and 12kV electrical transmission and distribution lines, wood poles and facilities (by PG&E) to accommodate the future expansion of the Wal-Mart store. Storm water drainage quality and quantity are discussed in Section G of this Initial Study.

N.8-9. Future development of the subject properties would increase the stream of waste from the Chico Urban Area to the Neal Road Landfill. The Neal Road Landfill is expected to reach maximum holding capacity by the year 2008. To ensure adequate landfill capacity up to and beyond 2008, Butte County will be updating its solid waste management plan every three years to identify needed landfill sites. Available capacity exists at the City's landfill to accommodate waste generated by future development on each of the parcels. Recycling containers will be required for the proposed project to help reduce the amount of material entering the landfill. As a result, potential impacts to the City's landfill are considered to be less than significant.

3. MANDATORY FINDINGS OF SIGNIFICANCE

Pursuant to the State CEQA Guidelines, a project shall be found to have a significant effect on the environment if any of the following are true:

Environmental Issues:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
1. The project has the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels; threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory.			X	
2. The project has possible environmental effects, which are individually limited but cumulatively considerable. (Cumulatively considerable means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current and probable future projects.	X			
3. The environmental effects of a project will cause substantial adverse effects on human beings, either directly or indirectly.			X	

Discussion:

Based upon the preceding environmental analysis of this Initial Study, grading of the site may potentially eliminate isolated wetlands and foraging habitat for wildlife and may affect undiscovered cultural artifacts. The project has the potential to adversely affect biological resources and cultural resources on a site level basis but not to the extent that of itself, the project could result in the elimination of a species or an important example of major period of prehistory. The project may contribute to project level and cumulative level traffic impacts and contribute to cumulative air quality impacts. The project does not have the potential to result in substantial direct or indirect adverse effects on human beings.

REFERENCES:

- City of Chico General Plan, 1994 (amended 1999).
- City of Chico Master Environmental Assessment, Blaney Dyett/Michael Brandman Associates, January 1994.
- City of Chico, *Sanitary Sewer Master Plan,* Brown and Caldwell, December 1985.
- Final EIR for Adoption of the Chico Urban Area Draft Sanitary Sewer and Storm Drainage Master Plans, Northwest annexation, and General Plan Amendments North of Lindo Channel, Jones & Stokes, November 1992.
- Environmental Impact Report for the Storm Drainage Master Plan, EIP Associates, October 2000.
- California Natural Diversity Data Base Map, California Department of Fish and Game.
- County of Butte, *Butte County Airport Land Use Compatibility Plan,* December 2000.
- Kleinfelder, *Geotechnical Investigation Report Wal-Mart #2044 Expansion, 2044 Forest Avenue, Chico, CA,* November 5, 2002.
- Jones & Stokes, *Air Quality Analysis for the Duncan Shopping Center Expansion Project, Chico, California,* December 2002.
- Omni-Means, *Traffic Impact Study for the Duncan Shopping Center Expansion in the City of Chico,* December 2002.
- Cultural Resource Specialties, *Archaeological Inventory Surveyor the Duncan Shopping Center*
- *Expansion Project (TPN 002-170-004), 2044 Forest Avenue in Chico, Butte County, California,* October 24, 2002.
- Hanover Environmental Services, Inc., *Wetlands Delineation, Duncan Shopping Center Expansion, Forest Avenue,* Chico, Butte County, California, PAC101B, October 28, 2002.
- Butte County Association of Governments. *Draft Chico Corridor Study in Butte County on State Route 99 from Estates Drive (PM 28.3) to Esplanade (PM T38.2).* January 2001.

Note: The above referenced information is available for public review at the City of Chico Planning Division, 411 Main Street, 2nd Floor, Chico, California.

EXHIBIT "III"
CITY OF CHICO MEMORANDUM

TO:	**CITY PLANNING COMMISSION**	**DATE:**	**February 9, 2004**
FROM:	**SENIOR DEVELOPMENT ENGINEER**	**FILE:**	**INTER DBPT/SUBD**
RE:	**VESTING TENTATIVE MAP OF: PARCEL MAP 03-17 (PACLAND/WAL-MART)**		

SUBDIVISION REPORT

This office has reviewed the vesting Tentative Map of PM 03-I 7 (PacLand/Wal-Mart) and herewith submits the following findings and recommendations for same.

A. PUBLIC FACILITY CONSTRUCTION

1. STREETS

The Subdivider shall construct City standard streets and appurtenant facilities at the following locations as a condition of the issuance era building permit for either Parcel 1 or Parcel 2, whichever comes first:

a) Forest Avenue- Full urban improvements.
b) Wittmeier Drive - Install any remaining urban improvements.

2. SANITARY SEWER

a) Sanitary Sewer Analysis

The Subdivider shall submit a sanitary sewer analysis to the Department of Public Works for review. The analysis must demonstrate that the proposed realigned sanitary sewer easement and sanitary sewer lines will not reduce the capacity of the existing sanitary sewer facility.

b) Sanitary Sewer Fees

The Subdivider shall complete an Application for Sewer Connection

The Subdivider shall comply with all terms and conditions of the Application for Sewer Connection including payment of may required fees.

3. STORM DRAINAGE

a) Storm Drainage Analysis

The Subdivider shall submit a storm drain analysis to the Department of Public Works for review. The analysis, including hydraulic grade, lines both the existing and realigned conditions, must demonstrate that the proposed realigned storm drain easement and storm drain lines will not reduce the capacity of the existing storm drain facility.

b) Storm Drainage Fees

The Subdivider shall pay a storm drain fee in accordance with the requirements of the Chico Municipal Code.

4. STREET TREES

Street trees shall be planted in accordance with the recommendation of the Park. Department as outlined in a memorandum dated 1/16/04 and attached hereto as Exhibit A as a condition of the issuance of a building permit for either Parcel 1 or Parcel 2, whichever comes first.

B. PUBLIC PROPERTY CONVEYANCES

1. DEDICATIONS

In conjunction with recordation of the Final Map, the Subdivider shall:

a) Dedicate additional public fight-of-way to the. City necessary to construct a dedicated right turn lane

for the eastbound Baney Lane approach to Forest Avenue between the easterly entrance to Wal-Mart on Baney lane to Forest Avenue.
b) Dedicate additional public right-of-way to the City necessary to construct double left turn lanes for the eastbound Wittmeier Drive approach to Forest Avenue.
c) Dedicate a 20-foot wide sanitary sewer easement to the City as necessary to relocate existing public sanitary sewer facilities as depicted on the tentative map.
d) Dedicate a storm drain easement to the City as necessary to relocate existing public storm drain facilities as depicted on the tentative map.
e) Dedicate a 15-foot wide bicycle easement to the City as depicted on the tentative map.
f) Dedicate a 20-foot wide waterline easement to California Water Service Company as depicted on the tentative map.
g) Dedicate a 50-foot wide easement to Pacific Gas and Electric Company as depicted on the tentative map.
h) Convey to the City all abutter's rights of access from Parcel 2 to the following streets:
Forest Avenue and Wittmeier Drive.

2. ABANDONMENTS

The easement abandonments, in accordance with the provisions of the Subdivision Map Act, shall become effective upon Final Map recordation. The easement abandonments are as follows:

a) The existing, sanitary sewer easement as depicted on the tentative map. The. Subdivider must demonstrate that the proposed realigned sanitary sewer easement and sanitary sewer lines will not reduce the capacity of the existing sanitary sewer facility.
b) The existing storm drain easement as depicted on the tentative map. The Subdivider must demonstrate that the proposed realigned storm drain easement and storm drain lines will not reduce the capacity of the existing storm drain facility.
c) The existing bicycle easement as depicted on the tentative map.
d) The existing waterline easement to California Water Service Company as depicted on the tentative map. The Subdivider must provide written evidence from California Water Service Company agreeing to the abandonment.
e) The existing utility easement to Pacific Gas and Electric Company as depicted on the tentative map.
f) The Subdivider must provide written evidence from Pacific Gas and Electric Company agreeing to the abandonment.

C. PRIVATE PROPERTY CONVEYANCES

DEDICATIONS

In conjunction with recondition of the Final Map, the Subdivider shall:

Dedicate a 25-foot wide access easement over Parcel 1 for the benefit of Parcel 2 as depicted on the tentative map.

D. ENVIRONMENTAL MITIGATIONS

The improvement plans, Final Map, and any appurtenant documents shall adhere to the requirements of the Mitigated Negative Declaration for Parcel Map PM 03-17 (PacLand/Wal-Mart), dated 1/14/04 on file in the Community Development Department of the City of Chico.

E. ADMINISTRATIVE REQUIREMENTS

FINAL MAP CHECKING FEES

The Subdivider shall pay to the City of Chico an initial deposit of $750 upon filing the Final Map for checking. The final fee shall be equal to actual City costs.

Recommendations and comments of all parties to whom the Tentative Map was circulated for review are on file with the respective parties and in the Community Development Department.

Matt Johnson, Senior Development Engineer

Attachments: Exhibit A

Distribution: Original-Planning Office

CITY OF CHICO MEMORANDUM

TO: **AP-PALMERI** **DATE:** **January 16,2004**

FROM: **URBAN FORESTER (X4944)** **FILE:** **TREE DESIGNATION**

RE: **STREET TREE DESIGNATION, TENTATIVE PARCEL MAP (03-17)**

After reviewing the PacLand/Wal-Mart Vesting Tentative Parcel Map (03-17), Park stuff have following comments.

There is space for street trees on Wittmeier Court and Forest Avenue. The designated street tree species for Forest Avenue are:

European hackberry *(Celtis australis)* at 35 feet O.C.
Shingle oak (*Quercus shumardii*) at 35 feet O.C.

The designated street tree species, for Wittmeier Court are:

Autumn Blazer pear (*Pyrus calleryanna* ("Autumn Blaze") at 30 feet O.C.
Shingle oak *(Quercus imbricaria)* at 35 feet O.C.

All trees are to be planted in accordance with Standard Detail LS-1. Trees must meet ANSIz60.1-1996 standards for #15 size containerized trees. Headed or topped trees are not to be used.

Soil conditions in this portion of Chico are poor. To create acceptable growing conditions, excavation of existing soil in parkstrips and replacement with Vina loam soil will be required prior to planting the street trees.

In accordance with the agreement between the City of Chico and Caltrans, landscaping within the SR99 right-of-way will be required. The landscaping must be designed and installed in accordance with the Chico landscape Design Manual. A maintenance district will be required to fund operation and maintenance of the new landscaping. Provisions for an irrigation system will be installed along the southerly property boundary.

Please see me if you have any questions with the information above.

Christopher Boza
Urban Forester

cc:
PkD
BPPC
ADPW-Eng.
BldgO
SDE-Johnson, File

APPENDIX B - CHICO WAL-MART STORE EXPANSION TRAFFIC IMPACT STUDY

Chico Wal-Mart Store Expansion
Traffic Impact Study

Final Report

Prepared For:
Pacific Municipal Consultants

Prepared By:

CHICO WAL-MART STORE EXPANSION
TRAFFIC IMPACT STUDY

FINAL REPORT

Prepared For:
Pacific Municipal Consultants

Prepared By

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April 2006

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INTRODUCTION

This report has been prepared to present the results of a traffic impact analysis performed by Omni-Means for the proposed Chico Wal-Mart Store Expansion in the City of Chico. The term "project", as used in this report, refers to the proposed Chico Wal-Mart Store Expansion.

The proposed project is located at 2044 Forest Avenue in the southeastern portion of the City of Chico in Butte County. The project site comprises 27.11 acres and is bounded to the north by Baney Lane, to the east by Forest Avenue, to the south by Wittmeier Drive, and to the west by office-commercial development fronting State Route 99. The site is currently designated as "Community Commercial and Service Commercial" within the City of Chico General Plan, and is currently zoned as Community Commercial. The project site consists of three parcels. Two of the parcels (APN 002-370-055 and 002-370-057) comprise 16.75 acres and currently contain an existing 125,889 sq. ft. Wal-Mart retail store and an adjacent parking lot containing 629 parking spaces. The third parcel (APN 002-170-004) is 10.62 acres and consists of undeveloped land located adjacent to and south of the existing Wal-Mart store. The existing Wal-Mart store is currently accessed via three Baney Lane driveways, a Forest Avenue driveway, and a Business Lane driveway, which leads into the rear alley. Figure 1 shows the project study area.

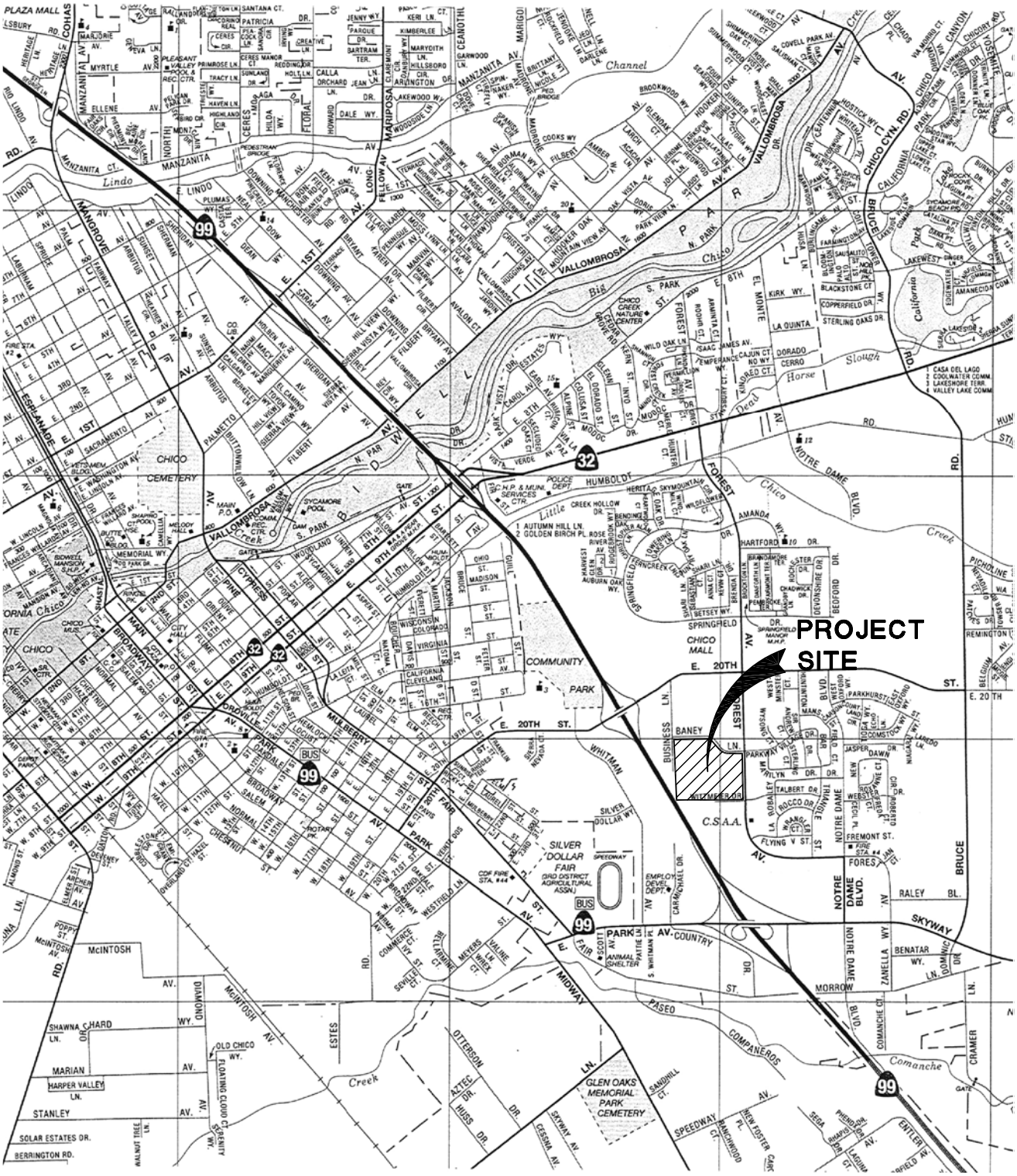
The proposed project would provide for construction of an additional 97,124 sq. ft. to the south side of the existing 125,889 sq. ft. Wal-Mart store to create a 223,013 sq. ft. Wal-Mart Supercenter. Approximately 60,000 sq. ft. of the expansion would be used for a grocery sales area. The remaining square footage would be used for storage and general merchandise sales. The parking lot would be expanded to the south of the existing lot adding 505 parking spaces, which would bring the total number of parking spaces on the project site to 1,134.

The project would utilize all of the existing driveways on Baney Lane, Business Lane, and Forest Avenue, as well as two new additional driveways to the south onto Wittmeier Drive as part of the expansion. The current proposed project site plan calls for all driveways along Baney Lane to be constructed with channelization to prohibit outbound left-turns and force all outbound traffic towards Forest Avenue. This restriction is intended to minimize traffic along Business Lane.

Also, although not officially a part of the project, the traffic analysis also considers the impacts associated with development of the 2.42 acre out parcel located within the extreme southeastern portion of the project site immediately northwest of the intersection of Forest Avenue/Wittmeier Drive. At present, there are no plans for development of this out parcel. For purposes of this study, based on information provided by the project proponent, this out parcel is assumed to be developed with a gas station (with 12 fueling stations) and a 5,000 sq. ft. fast food restaurant with drive through. Access to the out parcel is assumed to be via an additional right-in/right-out only driveway along Forest Lane, a driveway along Wittmeier Drive (planned as part of the Wal-Mart expansion), and additional cross access locations to/from the Wal-Mart parking lot.

Included in this report is a description of the existing transportation setting, including the current AM, PM, and Saturday peak hour traffic operations at key intersections which were selected for analysis by City of Chico staff. In addition, this report includes an analysis and discussion of the following items:

- Impacts of the approved/pending projects within the City of Chico on existing AM, PM, and Saturday peak hour intersection operations.
- Quantification of the trip generation and trip distribution associated with the proposed project and the resulting impacts on existing AM, PM, and Saturday peak hour intersection operations, assuming other regional approved/pending projects are in place.



Chico Wal Mart South - TIS

Figure 1

Project Vicinity Map

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- The projected cumulative (year 2018) peak hour intersection operations with and without the development of the proposed project.

- Potential base improvements and project-related mitigation measures that are needed to alleviate unacceptable level of traffic impacts at the study intersections and roadway segments, under conditions both without and with the development of the proposed project.

The following traffic scenarios are analyzed as a part of this report,

- *Existing* Conditions
- *Short Term No Project* Conditions (Existing + Approved/Pending Projects Scenario)
- *Short Term Plus Project* Conditions (Existing + Approved/Pending + Project Scenario)
- *Cumulative No Project* Conditions
- *Cumulative Plus Project* Conditions

Existing conditions describes the existing transportation facilities serving the project site, and the traffic operations, which currently exist for those facilities.

Short Term conditions refer to analysis scenarios which will exist following the assumed completion of approved and pending study area developments, and thus are typically a few years in the future from *Existing* conditions. For purposes of this study, City of Chico staff has directed that Short Term conditions be taken as year 2010 and be analyzed using 2010 traffic volumes provided by the City which were established assuming that 70% of the total approved and pending study area developments would be complete by year 2010. The *Short Term No Project* condition investigates traffic operations following completion of 70% of the total approved and pending projects, but excluding development of the proposed project. The *Short Term Plus Project* condition is the analysis scenario in which traffic impacts associated with the proposed project (i.e., the Chico Wal-Mart) are investigated in comparison to the *Short Term No Project* condition scenario. Wal-Mart Expansion volumes as established using trip generation and distribution methodologies provided for within this analysis were added to *Short Term No Project* volumes to establish *Short Term Plus Project* volumes. Short Term conditions assumes that some programmed or planned improvements might be completed, including potentially some project related improvements.

Cumulative conditions refer to analysis scenarios which would exist following assumed build out of the local General Plan, and thus also includes the development of approved/pending projects as identified under Short Term conditions. For purposes of this study, City of Chico staff has directed that *Cumulative* conditions be taken as year 2018 and be analyzed using 2018 traffic volumes provided by the City. The *Cumulative No Project* condition investigates traffic operations following completion of all approved and pending projects (as well as other regional growth and background growth), but excluding development of the proposed project. The *Cumulative Plus Project* condition is the analysis scenario in which traffic impacts associated with the proposed project (i.e., the Chico Wal-Mart Expansion) are investigated in comparison to the *Cumulative No Project* condition scenario. Wal-Mart Expansion volumes as established using trip generation and distribution methodologies provided for within this analysis were added to *Cumulative No Project* volumes to establish *Cumulative Plus Project* volumes. Cumulative conditions assume that programmed or planned improvements will be completed, including potentially some project related improvements.

The above traffic scenarios are described in further detail and evaluated in subsequent sections of this report.

To perform the traffic analysis for the Wal-Mart Expansion, the "*City of Chico, 2005-06 Update of Development Impact Fees, Analysis and Recommendations (Nexus Study) October 2005, Final Report*" was utilized to establish key base assumptions for the analysis. Traffic volumes for Short Term (2010) and Cumulative (2018) conditions were used to establish baseline sets of future traffic volumes, with adjustments as described in detail elsewhere within this report. Additionally, improvements to Caltrans as described within the Nexus Study were assumed for Cumulative (2018) conditions.

EXISTING ROADWAY SYSTEM

Existing conditions describes the existing transportation facilities serving the project site.

ROADWAY NETWORK

Roadways that provide primary circulation in the vicinity of the project site are described below.

State Highways

State Route 99 (SR 99) is a major state freeway facility that traverses north/south through central and northern California. SR 99 serves as the primary inter-regional auto and truck travel route that connects the northern valley cities of Chico and Yuba City with Sacramento and central valley cities of Stockton, Modesto, Fresno, and Bakersfield. Within the City of Chico, SR 99 also serves as a major commuter route providing vital north/south circulation, providing a four-lane divided cross section with a posted speed limit of 55 mph. Caltrans reported an Annual Average Daily Traffic Volume (AADT) of 58,000 and 69,000 vehicles on SR 99 just south and north of the East 20th Street interchange, respectively. Based upon Caltrans Publication "*2004 Annual Average Daily Truck Traffic on the California State Highway System*", the average truck percentage on SR 99 is approximately 10% for the section south and north of the East 20th Street interchange.

City Roadways

The following local roadways are under the jurisdiction of the City of Chico. Given roadway classifications are based on those established within the report *City of Chico General Plan, Transportation Element.*

East 20th Street is a major east-west arterial that begins in the west at Park Avenue, and continues east through an SR 99 interchange to Bruce Road, where the roadway continues as Warfield Lane into residential development. With the exception of the easternmost ½ mile of roadway near Bruce Road, East 20th Street is a divided 4-lane roadway with channelized left turn pockets at major streets, a posted Class II bike lane, and a posted speed limit of 35 mph.

East Park Avenue and ***Skyway*** combine to serve as a major east-west arterial. East Park Avenue (Business SR 99) extends westward from the SR 99 interchange approximately ¾ mile terminating at Midway. ***Skyway*** extends eastward from the SR 99 interchange deep into the foothills. In the vicinity of the project site, both roadways are divided 4-lane facilities with channelized left turn pockets at major streets, except within the SR 99 interchange where only a single westbound through lane exists between the ramps. The roadways maintain a posted speed limit of 35 mph west of Notre Dame Boulevard, 45 mph between Notre Dame Boulevard and the City's eastern limits, and 50-55 mph east of the City.

Forest Avenue is a major north-south arterial providing connection between the east-west arterial streets of SR 32, 20th Street, and Skyway (via Notre Dame Boulevard as described below). Within the vicinity of the project, Forest Avenue maintains a divided 4-lane configuration arterial with channelized left turn pockets at major streets, a posted Class II bike lane, and a posted speed limit of 35 mph.

Notre Dame Boulevard is north-south arterial connecting Forest Avenue and Skyway, serving basically as the southern continuation for Forest Avenue traffic. Although Notre Dame Boulevard continues north from Forest Avenue and south from Skyway, these facilities are 2-lane collector roadways. Between Forest Avenue and Skyway, the roadway is a divided 4-lane facility with channelized left turn pockets and a posted speed limit of 35 mph.

Whittmeier Drive is a short 2-lane east-west roadway which exists along the southern boundary of the proposed project, terminating to the west as a cul-de-sac, and to the east at Forest Avenue. The roadway

continues east through Forest Avenue into a residential subdivision as Talbert Drive. Two future driveways along Wittmeier Drive will provide access to the proposed Wal-Mart Expansion.

The following roadways are private roads that provide access in the vicinity of the project site.

Baney Lane is a private street that runs in an east-west direction and has a two-lane undivided cross-section with a left-turn pocket provided at the easternmost Wal-Mart driveway. At the eastern terminus, Baney Lane forms a signalized intersection with Forest Avenue, and continues east through Forest Avenue into a residential subdivision as Parkway Village Drive. At the western terminus, Baney Lane tees into Business Lane. There are three existing Wal-Mart driveways on Baney Lane that will continue to provide access to the project site, although with some modifications to prohibit outbound left turns.

Business Lane is a private street that runs in a north-south direction providing connection between 20th Street and Baney Lane. Business Lane has a two-lane undivided cross-section. At the northern terminus, Business Lane forms a right-turn-only stop sign controlled intersection with 20th Street. Within the cul-de-sac located at the roadway's southern terminus south of Baney Lane, the roadway transitions into the alley behind the existing Wal-Mart, which will also exist behind the proposed project as an additional access to the project site.

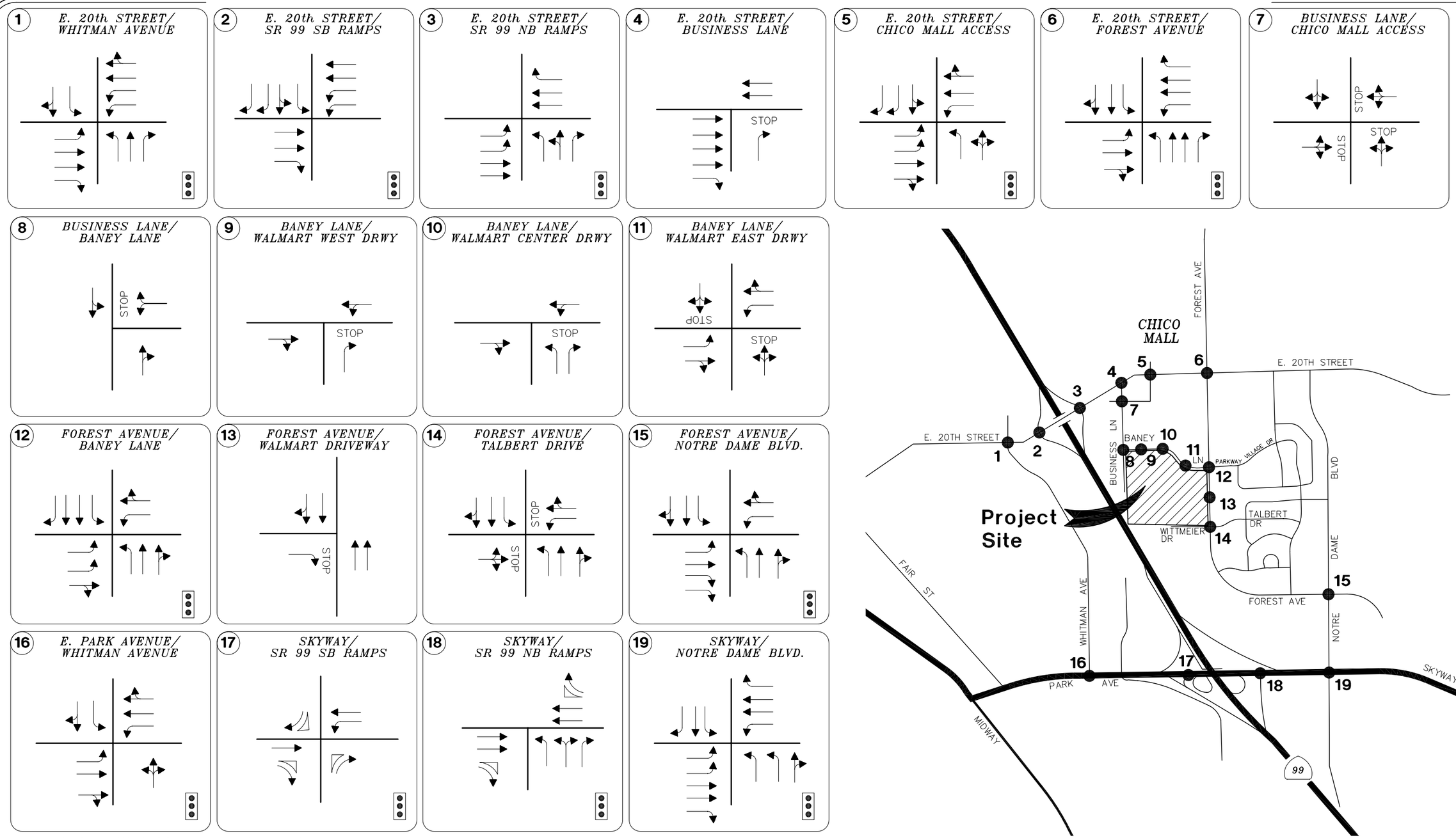
STUDY INTERSECTIONS

- E. 20th Street / Whitman Avenue
- E. 20th Street / SR 99 SB Ramps
- E. 20th Street / SR 99 NB Ramps
- E. 20th Street / Business Lane
- E. 20th Street / Chico Mall Access
- E. 20th Street / Forest Avenue
- Business Lane / Chico Mall Access
- Baney Lane / Business Lane-Wal-Mart Driveway
- Baney Lane / Wal-Mart West Driveway
- Baney Lane / Wal-Mart Central Driveway
- Baney Lane / Wal-Mart East Driveway
- Forest Avenue / Baney Lane-Parkway Village Drive
- Forest Avenue / Wal-Mart Driveway
- Forest Avenue / Talbert Drive-Whittmeier Drive
- Forest Avenue / Notre Dame Boulevard
- E. Park Avenue-Skyway / Whitman Road
- Skyway / SR 99 SB Off-Ramp
- Skyway / SR 99 NB Off-Ramp
- Skyway / Notre Dame Boulevard

Intersection turning lane geometrics and traffic control for the above nineteen critical study intersections are illustrated on Figure 2.

Existing traffic volumes were provided by the City of Chico for weekday AM, weekday PM, and Saturday peak hour periods at the critical study intersections listed above. These volumes were adjusted and balanced as necessary to establish a reasonable and final set of existing intersection volumes. The AM peak hour is defined as the one-hour of peak traffic flow (which is the highest total volume count over four consecutive 15-minute count periods) counted between 7:00 AM and 9:00 AM on a typical weekday. The PM peak hour is defined as the one-hour of peak traffic flow counted between 4:00 PM and 6:00 PM on a typical weekday.

The Saturday peak hour is defined as the one-hour of peak traffic flow counted between 11:30 AM and 1:30 PM on a Saturday.



Chico Wal Mart South - TIS

Figure 2

EXISTING LANE GEOMETRICS AND CONTROL

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Existing AM, PM, and Saturday peak hour traffic volumes at the study intersections identified above are shown on Figure 3.

FREEWAY MAINLINE

Existing freeway mainline volumes were provided by the City of Chico along the following freeway mainline segments:

- SR 99 – E. Park Avenue-Skyway Interchange to E. 20th Street Interchange
- SR 99 – E. 20th Street Interchange to SR 32 Interchange

FREEWAY RAMPS

Existing volumes along the following freeway ramps were derived by Omni-Means based on existing volumes at the ramp intersections which were provided by the City:

- NB SR 99 on-ramp from E. Park Avenue-Skyway
- NB SR 99 off-ramp to E. 20th Street
- NB SR 99 on-ramp from E. 20th Street
- NB SR 99 off-ramp to SR 32
- SB SR 99 on-ramp from SR 32
- SB SR 99 off-ramp to E. 20th Street
- SB SR 99 on-ramp from E. 20th Street
- SB SR 99 off-ramp to E. Park Avenue-Skyway

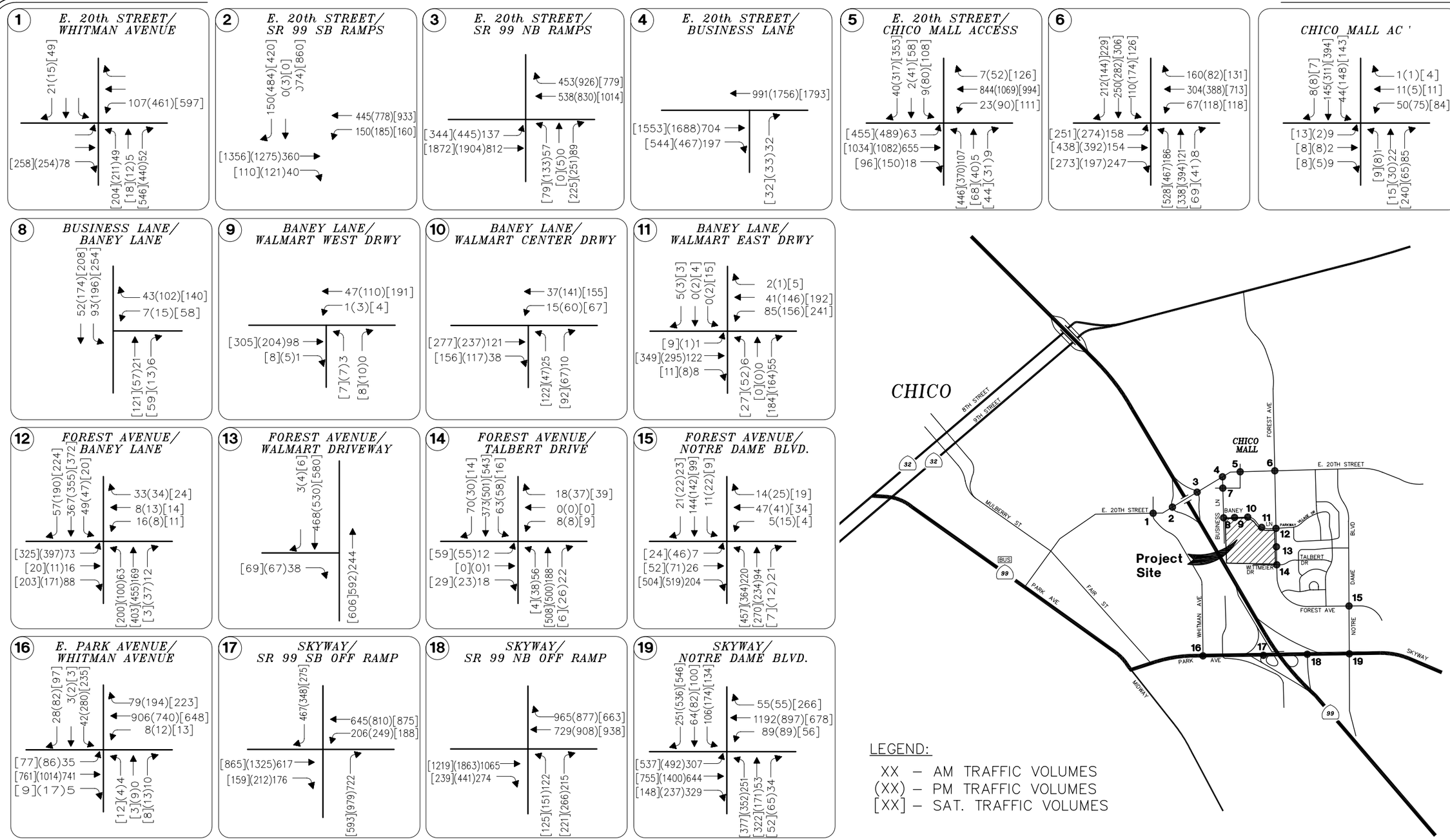
Existing AM, PM, and Saturday peak hour traffic volumes at the freeway mainline segments and ramp junctions identified above are shown on Figure 4.

ANALYSIS METHODOLOGIES/POLICIES

Traffic operations have been quantified through the determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions.

LEVEL OF SERVICE ANALYSIS METHODOLOGIES

Levels of Service have been calculated for all intersection control types using the methods documented in the Transportation Research Board Publication *Highway Capacity Manual, Fourth Edition, 2000*. For signalized intersections and all-way-stop-controlled (AWSC) intersections, the intersection delays and levels of service are average values for all intersection movements. For two-way-stop-controlled (TWSC) intersections, the intersection delays and levels of service are representative of those for the worst-case approach. Level of service criteria for different types of intersection control are outlined in Table 1. The average daily traffic based roadway level of service thresholds are shown in Table 2.



Chico Wal Mart South - TIS

Figure 3

EXISTING PEAK HOUR VOLUMES

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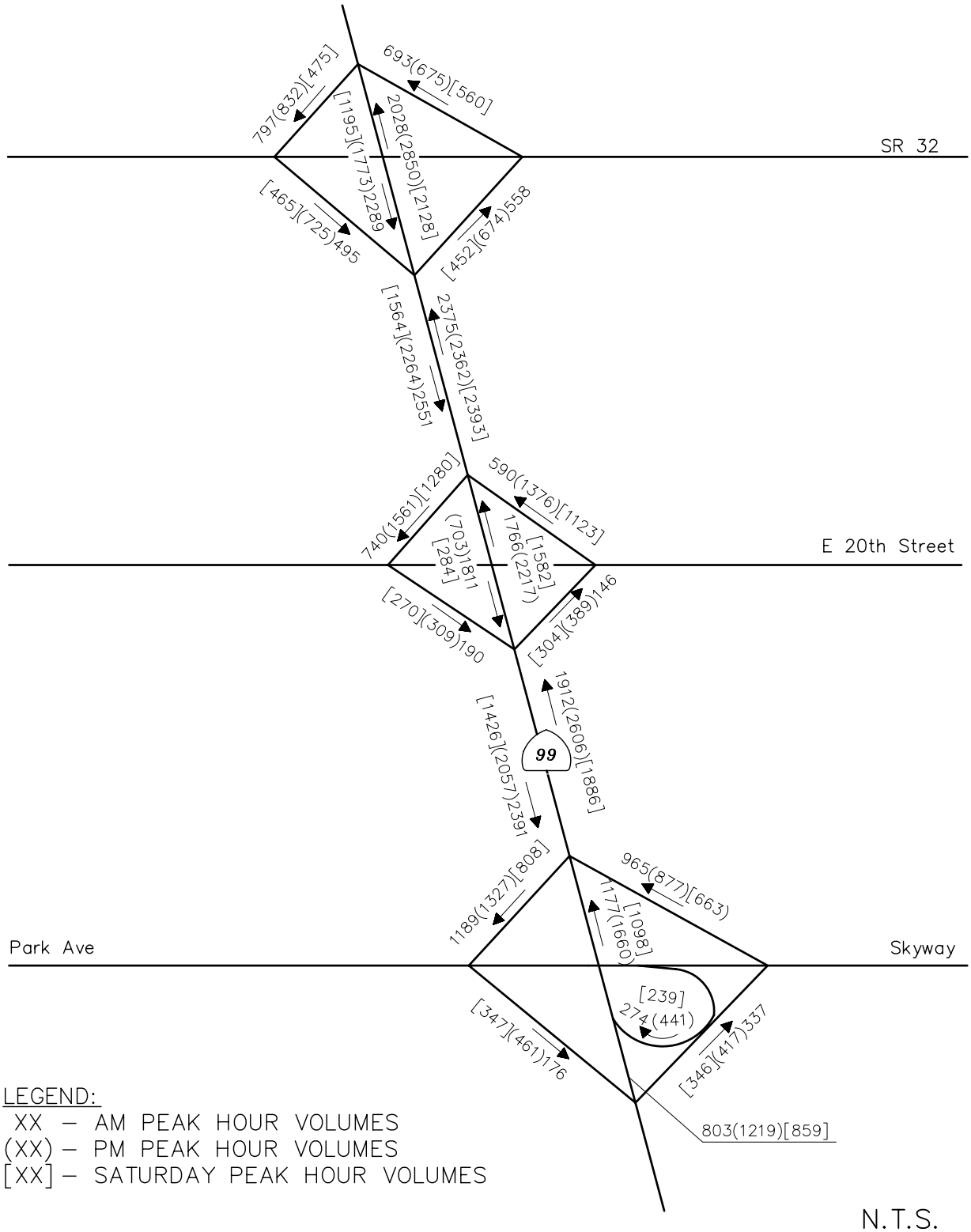

LEGEND:
XX – AM PEAK HOUR VOLUMES
(XX) – PM PEAK HOUR VOLUMES
[XX] – SATURDAY PEAK HOUR VOLUMES

N.T.S.

Chico Wal Mart South - TIS

Figure 4

Existing Freeway Mainline & Ramp Volumes

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TABLE 1
LEVEL OF SERVICE (LOS) CRITERIA FOR INTERSECTIONS

Level of Service	Type of Flow	Delay	Maneuverability	Control Delay (seconds/vehicle)		
				Signalized	Unsignalized	All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	≤ 10.0	≤ 10.0	≤ 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10 and ≤ 20.0	>10 and ≤ 15.0	>10 and ≤ 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20 and ≤ 35.0	>15 and ≤ 25.0	>15 and ≤ 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35 and ≤ 55.0	>25 and ≤ 35.0	>25 and ≤ 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55 and ≤ 80.0	>35 and ≤ 50.0	>35 and ≤ 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0	> 50.0

References: 1. Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000.

TABLE 2
LEVEL OF SERVICE (LOS) CRITERIA FOR ROADWAYS

Roadway Type	Average Daily Traffic (ADT) – Total of Both Directions				
	LOS "A"	LOS "B"	LOS "C"	LOS "D"	LOS "E"
6-Lane Expressway (high access control)	36,000	42,000	48,000	54,000	60,000
6-Lane Divided Arterial (with left-turn lane)	32,000	38,000	43,000	49,000	54,000
4-Lane Expressway (high access control)	24,000	28,000	32,000	36,000	40,000
4-Lane Divided Arterial (with left-turn lane)	22,000	25,000	29,000	32,500	36,000
4-Lane Undivided Arterial (no left-turn lane)	18,000	21,000	24,000	27,000	30,000
2-Lane Arterial (with left-turn lane)	11,000	12,500	14,500	16,000	18,000
2-Lane Arterial (no left-turn lane)	9,000	10,500	12,000	13,500	15,000
4-Lane Collector	12,000	15,000	18,000	21,000	24,000
3-Lane Collector	9,000	11,250	13,500	15,750	18,000
2-Lane Collector	6,000	7,500	9,000	10,500	12,000

Notes: 1. Based on Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000.
2. All volume thresholds are approximate and assume ideal roadway characteristics. Actual thresholds for each LOS listed above may vary depending on a variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange spacing, driveway spacing, percentage of trucks and other heavy vehicles, lane widths, signal timing, on-street parking, volume of cross traffic and pedestrians, etc.

STANDARDS OF SIGNIFICANCE

To measure whether transportation facilities operate acceptably, or are significantly impacted by the addition of project generated traffic, the applicable standards of significance policies were identified for this study. Standards of significance policies establish level of service thresholds for acceptable/tolerable operations of transportation facilities, as well as the policies regarding what triggers a significant project impact. The governing policy for a particular study intersection or roadway segment is that which is established by the agency which owns and maintains the facility, although it might be necessary to also consider contradicting policies of other agencies which may have some jurisdictional interest with the facility.

Within this study, the City of Chico and Caltrans all have standards of significance policies which apply to some, or all, of the study facilities. The standards of significance policies for each of these agencies are described in detail below, along with how the policies were interpreted for this study. The following local public agency planning documents were referenced to establish standards of significance for this analysis.

1) *City of Chico General Plan 1999,* City of Chico Planning Department, 1999.
2) *State Route 99 – Chico Corridor Study, Quincy Engineering,* October 2001.

City of Chico Standards of Significance

The *City of Chico General Plan (April 1999) Transportation Element* quotes the following under the "Standards for Traffic Level of Service" section:

> *T-G-11: Strive to maintain traffic LOS "C" on residential streets and LOS "D" or better on arterial and collector streets, at all intersections, and on principal arterials in the CMP during peak hours.*
>
> *T-G-12: Accept LOS "E" for built-out areas served by transit after finding that:*
>
> - *There is no practical and feasible way to mitigate the lower level of service; and*
> - *The uses resulting in the lower level of service are of clear, overall public benefit.*

Based on the above standards established in the general plan, LOS "D" is designated as the minimum acceptable LOS standard on City facilities in general. In this report, a peak-hour LOS of "D" is taken as the threshold for acceptable traffic operations at all study intersections.

Caltrans Standards of Significance

The Caltrans published *Guide for the Preparation of Traffic Impact Studies* (dated December 2002) states the following:

> *"Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS."*

The "concept level of service" for study freeway mainline segments along the SR 99 corridor as stated within the *State Route 99 – Chico Corridor Study, Quincy Engineering* (October 2001) is provided below. Note that the "concept level of service" within the *Chico Corridor Study* were in turn obtained from the *State Route 99 Route Concept Report (Caltrans District 3, July 1989)*

- State Route 99 – Estates Drive to Skyway: LOS "D"
- State Route 99 – Skyway to Mud Creek Bridge: LOS "E"

Private Streets Standards of Significance

A few of the roadways analyzed within the traffic study are private streets for which there are no designated standards of significance. These include Baney Lane, Business Lane, and all private driveways leading to City streets (i.e. Chico Mall Access, Wal-Mart driveways). The City of Chico has established that the City's LOS standards should not be applied to private intersections or private driveway approaches to City arterials.

Standards of Significance Summary

For non-Caltrans facilities owned and maintained by the City, LOS "D" will be taken as the governing threshold.

For private facilities, including Baney Lane, Business Lane, Chico Mall Access, and Wal-Mart driveways, there will be no LOS threshold. Rather, delay conditions should be considered in addressing vehicle conflict and safety issues.

For Caltrans facilities, the minimum acceptable LOS for SR 99 mainline, ramp junction, and at-grade ramp intersections is based on the concept LOS for the segments identified above. Based on the above discussion, Table 3 provides the target level of service that will be utilized for the mainline, ramp junction, and at-grade ramp intersections.

TABLE 3
TARGET LEVEL OF SERVICE (LOS) FOR CALTRANS FACILITIES

Mainline/ Ramp Junction/ At-Grade Ramp Intersections	Target LOS
SR 99 Mainline Segment– north of Skyway	E
SR 99/Skyway Ramp Junction – NB On-Ramp	E
SR 99/Skyway Ramp Junction – SB Off-Ramp	E
SR 99 NB Ramps/Skyway Intersection	D
SR 99 SB Ramps/Skyway Intersection	D
SR 99 Mainline Segment – north of 20th Street	E
SR 99/20th Street Ramp Junction – NB On and Off-Ramp	E
SR 99/20th Street Ramp Junction – SB On and Off-Ramp	E
SR 99 NB Ramps/20th Street Intersection	D
SR 99 SB Ramps/20th Street Intersection	D
SR 99/SR 32 Ramp Junction – NB Off-Ramp	E
SR 99/ SR 32 Ramp Junction – SB On-Ramp	E

TRAFFIC SIGNAL WARRANT ANALYSIS CRITERIA

To determine whether "significance" should be associated with unsignalized intersection operations, a supplemental traffic signal "warrant" analysis will also be completed. The term "signal warrants" refers to the list of established criteria used by Caltrans and other public agencies to quantitatively justify or ascertain the need for installation of a traffic signal at an otherwise unsignalized intersection location. This study will employ the signal warrant criteria presented in the latest edition of the Federal Highway Administration's (FHWA) *Manual on Uniform Traffic Control Devices (MUTCD)*, as amended by the *MUTCD 2003 California Supplement*, for all study intersections. The signal warrant criteria are based upon several factors including volume of vehicular and pedestrian traffic, frequency of accidents, location of school areas, etc. Both the FHWA's MUTCD and the *MUTCD 2003 California Supplement* indicate that the installation of a traffic signal should be considered if one or more of the signal warrants are met. Specifically, this study will utilize the Peak Hour Volume based Warrant 3 as one representative type of traffic signal warrant analysis. Warrant 3 criteria are basically identical for both the FHWA's MUTCD and the *MUTCD 2003 California Supplement*.

TECHNICAL ANALYSIS PARAMETERS

Intersections

This traffic study focuses on a "planning level" evaluation of traffic operating conditions, which is considered sufficient for CEQA/NEPA purposes. The planning level evaluation incorporates appropriate heavy vehicle adjustment factors, peak hour factors, and signal lost time factors and reports the resulting intersection delays and LOS as estimated using the HCM-2000 based analysis methodologies. Based on consultations with City of Chico, a peak hour factor (PHF) of 0.90 was established for use in the analysis of all study intersections under all scenarios for this analysis. Per HCM standards, a loss time of 4 seconds per critical movement is applied for the analysis of all signalized intersections. The *Traffix 7.7* (Dowling Associates) software program was used to implement the HCM-2000 analysis methodologies. Assessment of "design level" parameters (including queuing on intersection lane groups, stacking length requirements, coordinated signal operations analyses, etc.) have been included in this study.

Freeway Mainline, Ramp Merge/Diverge and Weaving LOS Methodologies

Freeway mainline, ramp (merge/diverge) junction and mainline weaving operations peak hour traffic operations were analyzed using methodologies presented in the *Highway Capacity Manual (HCM 2000)*. The Transportation Research Board (TRB) published *Highway Capacity Software 2000 (HCS-2000)*, *Version 4.1*, was applied in this analysis. Assumptions used in this analysis include:

- 0.90 peak hour factor (both mainline and ramps)
- 10 % heavy vehicles during the peak hour periods analyzed - obtained from Average Annual Daily Truck Traffic on the California State Highway System, November 2004 (*http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/truck2003final.pdf*)
- A Passenger Car Equivalency (PCE) factor of 1.5 (level terrain), established based on the terrain (level, rolling, or mountainous), was utilized for evaluating the mainline, ramp merge/diverge and weaving operations.

EXISTING TRAFFIC OPERATIONS

Existing conditions were simulated by using existing intersection volumes.

INTERSECTIONS

Existing peak hour intersection traffic operations were analyzed utilizing existing traffic volumes (shown on Figure 3) and existing intersection lane geometrics and control (shown on Figure 2). Table 4 provides a summary of the *Existing* peak hour intersection levels of service.

TABLE 4
EXISTING CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

				AM Peak Hour			PM Peak Hour			Sat Peak Hour		
#	Intersection	Control Type[1]	Target LOS	Delay	LOS	Warrant Met?[2]	Delay	LOS	Warrant Met?[2]	Delay	LOS	Warrant Met?[2]
1	E 20th St./ Whitman Avenue	Signal	D	18.1	B	-	26.3	C	-	38.9	D	-
2	E 20th St./ SB SR-99 Ramps	Signal	D	22.4	C	-	35.6	D	-	27.1	C	-
3	E 20th St./ NB SR-99 Ramps	Signal	D	11.1	B	-	41.0	D	-	23.4	C	-
4	E 20th St./Business Lane	TWSC	D	9.6	A	No	12.1	B	No	11.6	B	No
5	**E 20th St./ Chico Mall Access**	**Signal**	**D**	13.6	B	-	49.1	D	-	**61.9**	**E**	**-**
6	**E 20th St./Forest Ave**	**Signal**	**D**	33.2	C	-	48.0	D	-	**78.8**	**E**	**-**
7	Business Lane/ Chico Mall Access	TWSC	pvt[3]	11.9	B	No	23.7	C	No	37.3	E	No
8	Business Lane/ Baney Lane	TWSC	pvt[3]	8.9	A	No	10.3	B	No	18.4	C	No
9	Baney Lane/ Walmart West Dwy	TWSC	pvt[3]	9.4	A	No	10.1	B	No	11.4	B	No
10	Baney Lane/ Walmart Central Dwy	TWSC	pvt[3]	9.7	A	No	12.2	B	No	16.3	C	No
11	Baney Lane/ Walmart East Dwy	TWSC	pvt[3]	9.6	A	No	19.0	C	No	50.0	E	No
12	Forest Ave/Baney Lane/Pkwy Village Dr.	Signal	D	25.9	C	-	27.4	C	-	28.3	C	-
13	Forest Ave/ Wal Mart Dwy	TWSC	D	10.0	A	No	10.7	B	No	11.0	B	No
14	**Forest Ave/ Talbert-Whittmeier Dr.**	**TWSC**	**D**	15.0	B	No	**36.4**	**E**	**No**	26.5	D	No
15	Forest Ave/ Notre Dame Blvd.	Signal	D	19.8	B	-	17.8	B	-	13.2	B	-
16	E.Park Ave/ Whitman Ave	Signal	D	8.5	A	-	23.2	C	-	21.3	C	-
17	E.Park Ave/Skyway/ SB SR-99 Ramps	TWSC	D	10.2	B	-	23.6	C	-	12.0	B	-
18	E.Park Ave/Skyway/ NB SR-99 Ramps	Signal	D	10.1	B	-	10.8	B	-	9.5	A	-
19	Skyway/ Notre Dame Blvd	Signal	D	27.7	C	-	45.7	D	-	37.7	D	-

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**

1) TWSC = Two-Way-Stop Control (LOS and delay are based on LOS and delay for worst approach).

2) Warrant = Caltrans peak hour-volume based signal warrant

3) pvt = private roadways, driveways and/or intersections. City's LOS criteria not applicable and excessive delays analyzed in terms of unacceptable vehicle conflict and safety issues.

As shown in Table 4, the following intersections were found to be currently operating at unacceptable LOS under *Existing* conditions during at least one peak hour period.

- East 20th Street/Chico Mall Access – This signalized intersection is found to be operating at unacceptable LOS "E" during the Saturday peak hour period.
- East 20th Street/Forest Avenue – This signalized intersection is found to be operating at unacceptable LOS "E" during the Saturday peak hour period.
- Forest Avenue/Talbert-Wittmeier Drive – This unsignalized intersection is found to be operating at unacceptable LOS "E" during the weekday PM peak hour period.

The following private intersections were found to be operating at poor levels of service. Since there is no LOS threshold, potential mitigation will be described later to address any potential vehicle conflict and safety issues.

- Business Lane/Chico Mall Access – This private unsignalized intersection is found to be operating at LOS "E" during the Saturday peak hour period.
- Business Lane/Wal-Mart East Driveway – This private unsignalized intersection is found to be operating at LOS "E" during the Saturday peak hour period.

None of the unsignalized intersections identified above meet Caltrans Peak Hour Volume Warrant-3 (Urban Areas) indicating that the peak hour volumes of minor-street vehicles are not large enough to warrant installation of a traffic signal at these locations.

FREEWAY MAINLINE SEGMENTS

Existing peak hour mainline operations were evaluated utilizing the existing peak hour traffic volumes shown on Figure 4. Table 5 summarizes *Existing* conditions' SR 99 freeway mainline operations.

TABLE 5
EXISTING CONDITIONS: SR 99 MAINLINE LEVELS-OF-SERVICE

			AM Peak Hour			PM Peak Hour			Sat Peak Hour		
Freeway Mainline Segment	**No. Lanes**	**Target LOS**	**Volume**	**Density, (pc/mi/ln)**	**LOS**	**Volume**	**Density, (pc/mi/ln)**	**LOS**	**Volume**	**Density, (pc/mi/ln)**	**LOS**
SR 99 NB, north of Skyway I/C	2	E	1,912	17.2	B	2,606	23.4	C	1,886	16.9	B
SR 99 SB, north of Skyway I/C	2	E	2,391	21.5	C	2,057	18.5	C	1,426	12.8	B
SR 99 NB, north of 20th Street I/C	2	E	2,375	21.3	C	3,362	31.6	D	2,393	21.5	C
SR 99 SB, north of 20th Street I/C	2	E	2,551	22.9	C	2,264	20.3	C	1,564	14.0	B

Notes: *pc/mi/ln = Passenger Cars per Mile per Lane*

As shown in Table 5, all four mainline segments are projected to operate at acceptable LOS (LOS "E" or better) during AM, PM and Saturday peak hour periods under *Existing* conditions.

FREEWAY RAMP JUNCTIONS

Existing peak hour ramp operations were evaluated utilizing the existing peak hour traffic volumes shown on Figure 4. Table 6 presents the *Existing* conditions' ramp merge/diverge peak hour LOS at the three study interchange locations in the vicinity of the study area.

TABLE 6
EXISTING CONDITIONS: SR 99 RAMP JUNCTION LEVELS-OF-SERVICE

SR 99 & Skyway Interchange	Junction Type	Target LOS	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Density (pc/mi/ln)	Sat Peak Hour LOS
SR 99 NB Direct On-Ramp	Merge	E	17.6	B	21.2	C	14.3	B
SR 99 NB Loop On-Ramp	Merge	E	8.2	A	13.4	B	8.4	A
SR 99 SB Off-Ramp	Diverge	E	25.8	C	22.5	C	16.1	B
SR 99 & 20th Street Interchange	**Junction Type**	**Target LOS**	**AM Peak Hour Density (pc/mi/ln)**	**AM Peak Hour LOS**	**PM Peak Hour Density (pc/mi/ln)**	**PM Peak Hour LOS**	**Sat Peak Hour Density (pc/mi/ln)**	**Sat Peak Hour LOS**
SR 99 NB Off-Ramp	Diverge	E	21.0	C	28.0	C	20.7	C
SR 99 NB On-Ramp	Merge	E	19.8	B	30.5	D	22.6	D
SR 99 SB Off-Ramp	Diverge	E	27.4	C	24.5	C	17.5	B
SR 99 SB On-Ramp	Merge	E	16.7	B	7.6	A	3.5	A
SR 99 & SR 32 Interchange	**Junction Type**	**Target LOS**	**AM Peak Hour Density (pc/mi/ln)**	**AM Peak Hour LOS**	**PM Peak Hour Density (pc/mi/ln)**	**PM Peak Hour LOS**	**Sat Peak Hour Density (pc/mi/ln)**	**Sat Peak Hour LOS**
SR 99 NB Off-Ramp	Diverge	E	25.7	C	35.6	E	25.8	C
SR 99 SB On-Ramp	Merge	E	23.7	C	20.9	C	13.4	B

Notes: *pc/mi/ln = Passenger Cars per Mile per Lane*

As shown in Table 6, all study ramp merge/diverge junctions are projected to operate at acceptable LOS (LOS "E" or better) during AM, PM and Saturday peak hour periods under *Existing* conditions.

SHORT TERM (2010) CONDITIONS

Short Term conditions refer to analysis scenarios a few years in the future from Existing conditions where approved and pending study area developments are assumed to be completed, with traffic generated by this future development added to existing traffic volumes. At the direction of the City of Chico, Short Term conditions within this analysis are taken as year 2010. Raw 2010 traffic volumes were provided by the City and established by assuming that 70% of the traffic generated by all of the identified approved/pending projects would be added to area roadways by 2010, including the proposed Wal-Mart Expansion project. However, it is important to note that trip generation as assumed within the Nexus Study, and trip generation as assumed within this traffic study, are different. Whereas the Nexus Study assumed more generalized macro level trip generation and distribution assumptions for the Wal-Mart Expansion project, this traffic study requires a more detailed and refined approach (i.e., specialized trip generation, detailed trip assignments at project driveways and nearby roadways, pass-by and diverted trips adjustments, and diverted trips to/from SR 99). For purposes of this traffic analysis, it is necessary to back out the specific traffic volumes within the raw volumes associated with the Wal-Mart Expansion project (as established within the Nexus Study) for no project conditions, and add them back in (as established for this traffic study) for plus project conditions. In the course of performing the traffic analysis, when Wal-Mart Expansion volumes as provided by the City for year 2010 conditions were backed out, it was noted that the resulting volume sets were not consistent with existing volumes. Specifically, it was noted that the resulting 2010 volumes were less than existing volumes at some locations. Therefore, for purposes of this analysis, these volumes were not backed out resulting in a conservative analysis with respect to Short Term conditions. The *Short Term Plus Project* condition is the analysis scenario in which traffic impacts associated with the proposed project (i.e., the Chico Wal-Mart) are investigated in comparison to the *Short Term No Project* condition scenario. Wal-Mart Expansion volumes as established using trip generation and distribution methodologies provided for within this analysis were added to *Short Term No Project* volumes to establish *Short Term Plus Project* volumes. Short Term conditions assume that some programmed or planned improvements might be completed, including potentially some project related improvements.

ROADWAY/INTERSECTION IMPROVEMENTS

It is assumed that roadway and intersection geometrics for *Short Term No Project* conditions will be identical to those which were described for *Existing* conditions.

SHORT TERM NO PROJECT TRAFFIC OPERATIONS

Short Term (2010) conditions typically refer to analysis scenarios which will exist following the assumed completion of approved and pending study area developments, and thus are typically a few years in the future from *Existing* conditions. As noted previously, for purposes of this study, the Short Term (2010) scenario assumes that 70% of the total approved and pending study area developments would be complete by year 2010. Figure 5 shows the *Short Term No Project* traffic volumes used in this study established using methodologies described previously.

INTERSECTIONS

Short Term No Project peak hour intersection traffic operations were analyzed utilizing derived *Short Term No Project* peak hour intersection traffic volumes (shown on Figure 6) and *Existing* lane geometries and control (shown on Figure 2). Table 7 provides a summary of the resulting peak hour intersection levels of service.

TABLE 7
SHORT TERM NO PROJECT CONDITIONS: INTERSECTION LEVELS-OF-SERVICE

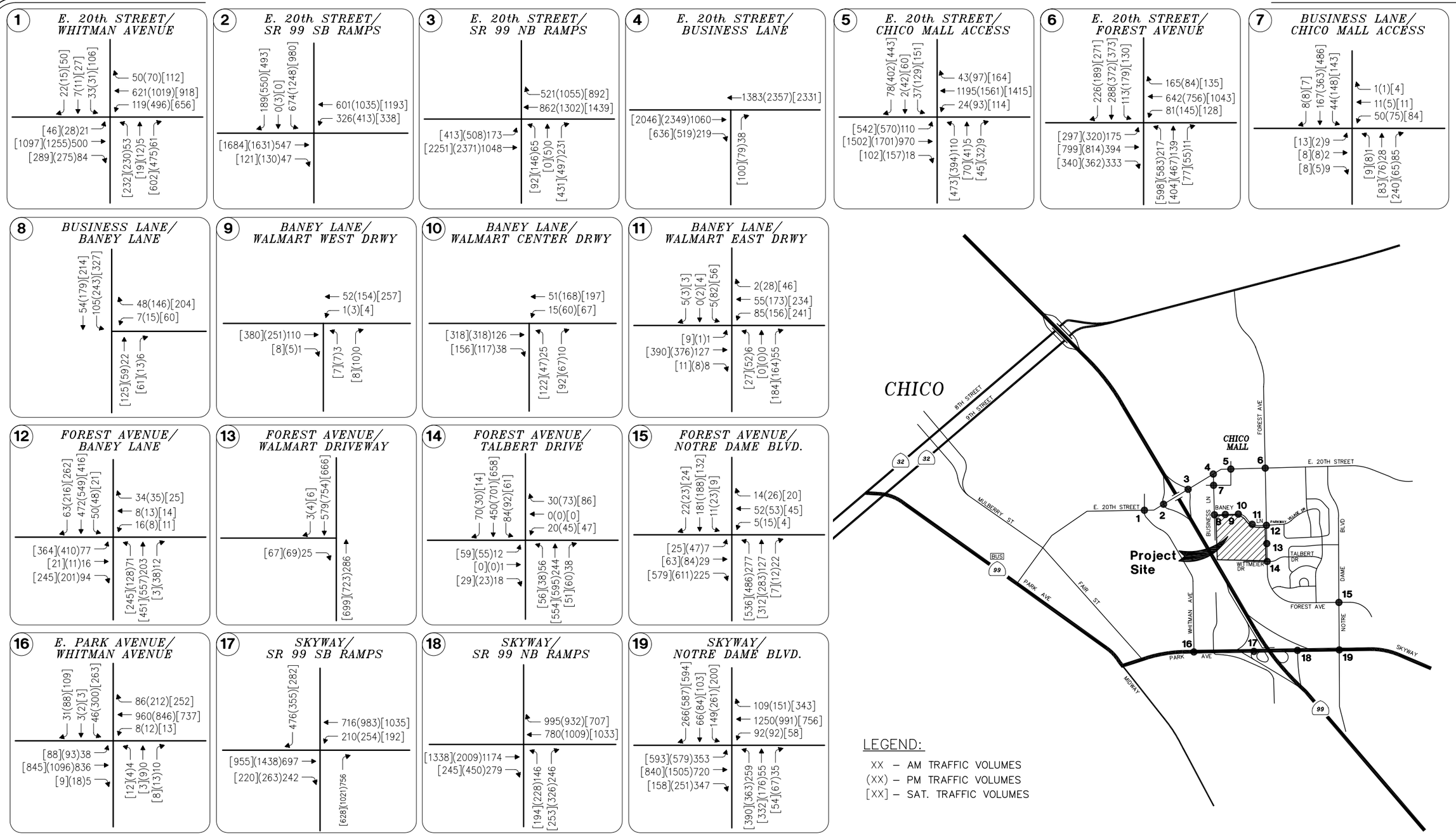
#	Intersection	Control Type[1]	Target LOS	AM Peak Hour Delay	AM Peak Hour LOS	AM Peak Hour Warrant Met?[2]	PM Peak Hour Delay	PM Peak Hour LOS	PM Peak Hour Warrant Met?[2]	Sat Peak Hour Delay	Sat Peak Hour LOS	Sat Peak Hour Warrant Met?[2]
1	E 20th St./ Whitman Avenue	Signal	D	16.1	B	-	30.8	C	-	44.6	D	-
2	**E 20th St./ SB SR-99 Ramps**	**Signal**	**D**	23.6	C	-	**80.3**	**F**	-	42.6	D	-
3	**E 20th St./ NB SR-99 Ramps**	**Signal**	**D**	15.8	B	-	**100.5**	**F**	-	**61.9**	**E**	-
4	E 20th St./ Business Lane	TWSC	D	10.4	B	No	16.0	C	No	15.0	B	No
5	**E 20th St./ Chico Mall Access**	**Signal**	**D**	15.0	B	-	**133.3**	**F**	-	**140.2**	**F**	-
6	**E 20th St./ Forest Ave**	**Signal**	**D**	37.0	D	-	**134.5**	**F**	-	**161.2**	**F**	-
7	Business Lane/ Chico Mall Access	TWSC	pvt[3]	12.3	B	No	29.4	D	No	64.1	F	No
8	Business Lane/ Baney Lane	TWSC	pvt[3]	9.0	A	No	10.7	B	No	27.2	D	No
9	Baney Lane/ Walmart West Dwy	TWSC	pvt[3]	9.5	A	No	10.6	B	No	12.6	B	No
10	Baney Lane/ Walmart Central Dwy	TWSC	pvt[3]	9.8	A	No	13.5	B	No	18.4	C	No
11	Baney Lane/ Walmart East Dwy	TWSC	pvt[3]	10.7	B	No	85.4	F	No	198.2	F	No
12	Forest Ave/ Baney Lane/Pkwy Village Dr.	Signal	D	24.5	C	-	27.4	C	-	29.8	C	-
13	Forest Ave/ Wal Mart Dwy	TWSC	D	10.5	B	No	12.1	B	No	11.5	B	No
14	**Forest Ave/ Talbert-Whittmeier Dr.**	**TWSC**	**D**	18.1	C	No	**133.6**	**F**	**No**	**97.9**	**F**	**No**
15	Forest Ave/ Notre Dame Blvd.	Signal	D	19.5	B	-	18.1	B	-	14.0	B	-
16	E.Park Ave/ Whitman Ave	Signal	D	8.7	A	-	24.2	C	-	22.4	C	-
17	E.Park Ave/ Skyway/SB SR-99 Ramps	TWSC	D	10.8	B	-	30.1	D	-	13.0	B	-
18	E.Park Ave/ Skyway/NB SR-99 Ramps	Signal	D	10.8	B	-	13.7	B	-	10.9	B	-
19	**Skyway/ Notre Dame Blvd**	**Signal**	**D**	29.1	C	-	**58.5**	**E**	-	44.9	D	-

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**

1) TWSC = Two-Way-Stop Control (LOS and delay are based on LOS and delay for worst approach).

2) Warrant = Caltrans peak hour-volume based signal warrant

3) pvt = private roadways, driveways and/or intersections. City's LOS criteria not applicable and excessive delays analyzed in terms of unacceptable vehicle conflict and safety issues.



Chico Wal Mart South - TIS

Figure 5

YEAR 2010 NO PROJECT TRAFFIC VOLUMES

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As shown in Table 7, the following intersections were found to operate at unacceptable LOS under *Short Term No Project* conditions during at least one peak hour period.

- E. 20th Street/SR 99 SB Ramps – This signalized intersection is projected to operate at unacceptable LOS "F" during the PM peak hour period
- E. 20th Street/SR 99 NB Ramps – This signalized intersection is projected to operate at unacceptable LOS "F" during the PM peak hour period, and LOS "E" during the Saturday peak hour period
- E. 20th Street/Chico Mall Access – This signalized intersection is projected to operate at unacceptable LOS "F" during the PM and Saturday peak hour periods
- E. 20th Street/Forest Avenue – This signalized intersection is projected to operate at unacceptable LOS "F" during the PM and Saturday peak hour periods
- Forest Avenue/Talbert-Wittmeier Drive – This unsignalized intersection is projected to operate at unacceptable LOS "F" during the PM and Saturday peak hour periods
- Skyway/Notre Dame Boulevard – This signalized intersection is projected to operate at unacceptable LOS "E" during the PM peak hour

The following private intersections are projected to operate at poor levels of service for *Short Term No Project* conditions. Since there is no LOS threshold, potential mitigation will be described later to address any potential vehicle conflict and safety issues.

- Business Lane/Chico Mall Access – This private unsignalized intersection is projected to operate at LOS "D" during the PM peak hour period, and LOS "F" during the Saturday peak hour period
- Business Lane/Baney Lane – This private unsignalized intersection is projected to operate at LOS "D" during the Saturday peak hour
- Business Lane/Wal-Mart East Driveway – This private unsignalized intersection is projected to operate at LOS "F" during the PM and Saturday peak hour periods

None of the unsignalized intersections identified above meet Caltrans Peak Hour Volume Warrant-3 (Urban Areas) indicating that the peak hour volumes of minor-street vehicles are not large enough to warrant installation of a traffic signal at these locations.

FREEWAY MAINLINE SEGMENTS

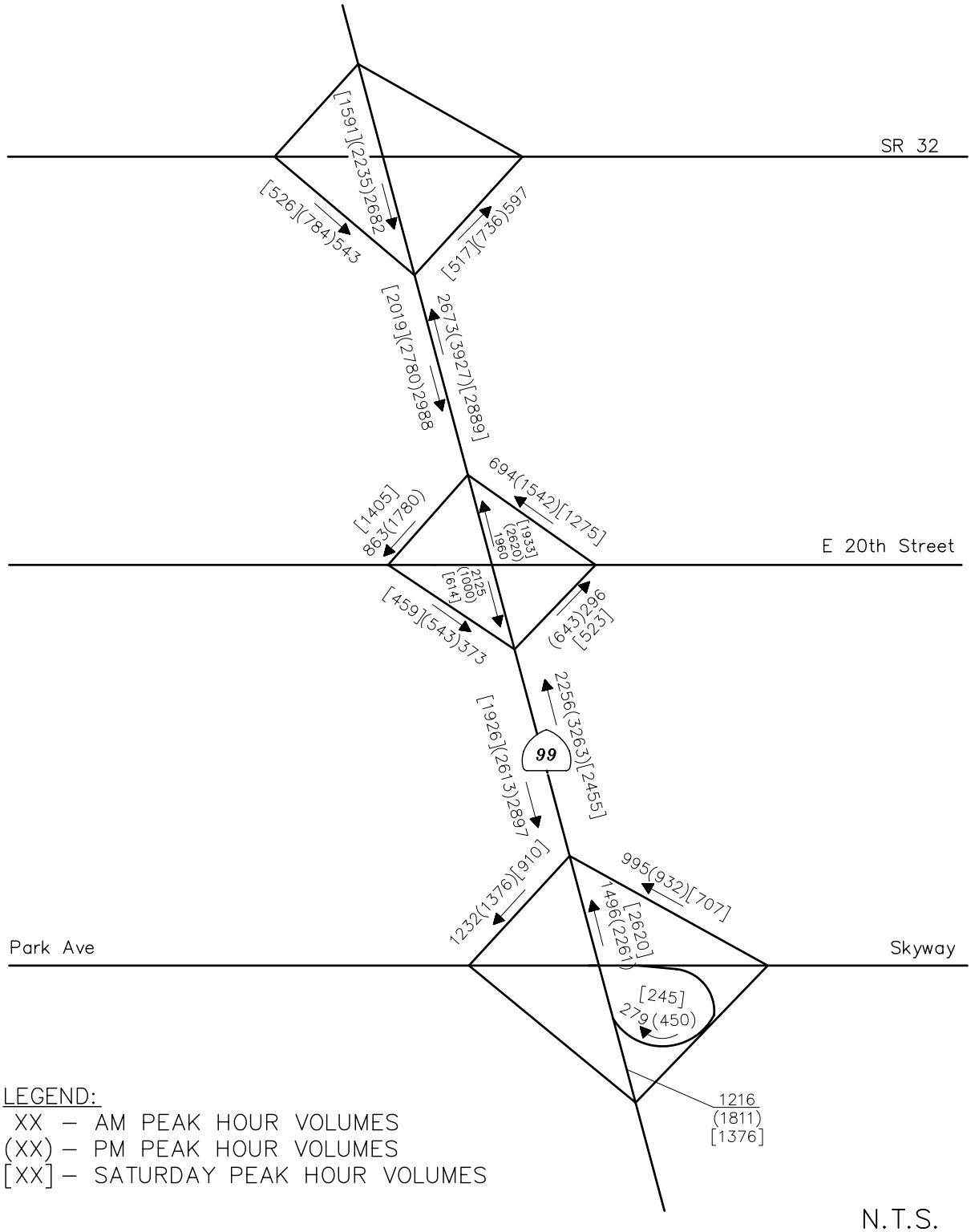
Short Term No Project peak hour mainline operations were evaluated utilizing the existing peak hour traffic volumes shown on Figure 6. Table 8 summarizes *Short Term No Project* conditions' SR 99 freeway mainline operations.

TABLE 8
SHORT TERM NO PROJECT CONDITIONS: SR 99 MAINLINE LEVELS-OF-SERVICE

Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour Volume	AM Peak Hour Density, (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density, (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Volume	Sat Peak Hour Density, (pc/mi/ln)	Sat Peak Hour LOS
SR 99 NB, north of Skyway I/C	2	E	2,256	20.2	C	3,263	30.3	D	2,455	22.0	C
SR 99 SB, north of Skyway I/C	2	E	2,897	26.2	D	2,613	23.5	C	1,926	17.3	B
SR 99 NB, north of 20th Street I/C	2	E	2,673	24.0	C	3,927	42.2	E	2,889	26.1	D
SR 99 SB, north of 20th Street I/C	2	E	2,988	27.1	D	2,780	25.0	C	2,019	18.1	C

Notes: *pc/mi/ln = Passenger Cars per Mile per Lane*

As shown in Table 8, all four mainline segments are projected to operate at acceptable LOS (LOS "E" or better) during AM, PM and Saturday peak hour periods under *Short Term No Project* conditions.



LEGEND:
XX – AM PEAK HOUR VOLUMES
(XX) – PM PEAK HOUR VOLUMES
[XX] – SATURDAY PEAK HOUR VOLUMES

N.T.S.

Chico Wal Mart South - TIS

Figure 6

Year 2010 No Project Freeway Mainline and Ramp Volumes

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FREEWAY RAMP JUNCTIONS

Short Term No Project peak hour ramp operations were evaluated utilizing the *Short Term No Project* peak hour traffic volumes shown on Figure 6. Table 9 presents the *Short Term No Project* conditions' ramp merge/diverge peak hour LOS at the three study interchange locations in the vicinity of the study area.

TABLE 9
SHORT TERM NO PROJECT CONDITIONS: SR 99 RAMP JUNCTION LEVELS-OF-SERVICE

			AM Peak Hour		PM Peak Hour		Sat Peak Hour	
SR 99 & Skyway Interchange	**Junction Type**	**Target LOS**	**Density (pc/mi/ln)**	**LOS**	**Density (pc/mi/ln)**	**LOS**	**Density (pc/mi/ln)**	**LOS**
SR 99 NB Direct On-Ramp	Merge	E	20.7	C	27.1	C	28.5	D
SR 99 NB Loop On-Ramp	Merge	E	12.0	B	18.9	B	13.2	B
SR 99 SB Off-Ramp	Diverge	E	30.9	D	28.0	D	21.1	C
			AM Peak Hour		**PM Peak Hour**		**Sat Peak Hour**	
SR 99 & 20th Street Interchange	**Junction Type**	**Target LOS**	**Density (pc/mi/ln)**	**LOS**	**Density (pc/mi/ln)**	**LOS**	**Density (pc/mi/ln)**	**LOS**
SR 99 NB Off-Ramp	Diverge	E	24.5	C	34.6	D	26.5	C
SR 99 NB On-Ramp	**Merge**	**E**	22.4	C	**35.6**	**F**	27.1	C
SR 99 SB Off-Ramp	**Diverge**	**E**	31.8	D	**29.7**	**F**	22.1	C
SR 99 SB On-Ramp	Merge	E	21.1	C	12.3	B	8.1	A
			AM Peak Hour		**PM Peak Hour**		**Sat Peak Hour**	
SR 99 & SR 32 Interchange	**Junction Type**	**Target LOS**	**Density (pc/mi/ln)**	**LOS**	**Density (pc/mi/ln)**	**LOS**	**Density (pc/mi/ln)**	**LOS**
SR 99 NB Off-Ramp	**Diverge**	**E**	28.6	D	**41.2**	**F**	30.8	D
SR 99 SB On-Ramp	Merge	E	27.6	C	25.6	C	17.6	B

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
pc/mi/ln = Passenger Cars per Mile per Lane

As shown in Table 9, all study ramp merge/diverge junctions are projected to operate at acceptable LOS (LOS "E" or better) during AM, PM and Saturday peak hour periods under *Short Term No Project* conditions, with the exception of the following ramp junctions which are projected to operate at unacceptable LOS "F":

- Northbound on-ramp at the SR 99/20th Street interchange
- Southbound off-ramp at the SR 99/20th Street interchange
- Northbound off-ramp at the SR 99/SR 32 interchange

PROPOSED PROJECT

This section describes the proposed project and methodologies used to quantify the project trips added to area transportation facilities.

PROJECT DESCRIPTION

The proposed project, which is depicted in the project site plan in Figure 7, is located at 2044 Forest Avenue in the southeastern portion of the City of Chico in Butte County. The project site comprises 27.11 acres and is bounded to the north by Baney Lane, to the east by Forest Avenue, to the south by Wittmeier Drive, and to the west by office-commercial development fronting SR 99. The site is currently designated as "Community Commercial and Service Commercial" within the City of Chico General Plan, and is currently zoned as "Community Commercial". The project site consists of three parcels. Two of the parcels (APN 002-370-055 and 002-370-057) comprise 16.75 acres and currently contain an existing 125,889 sq. ft. Wal-Mart retail store and an adjacent parking lot containing 629 parking spaces. The third parcel (APN 002-170-004) is 10.62 acres and consists of undeveloped land located adjacent to and south of the existing Wal-Mart store. The proposed expansion would be occurring on 8.20 acres and the remaining 2.42 acres (of the 10.62 acre parcel) would be developed to include a gas station and fast food restaurant (described below). The existing Wal-Mart store is currently accessed via three Baney Lane driveways, a Forest Avenue driveway, and a Business Lane driveway which leads into the rear alley.

The proposed project would provide for construction of an additional 97,124 sq. ft. to the south side of the existing 125,889 sq. ft. Wal-Mart store to create a 223,013 sq. ft. Wal-Mart Supercenter. Approximately 60,000 sq. ft. of the expansion would be used for a grocery sales area. The remaining square footage would be used for storage and general merchandise sales. The parking lot would be expanded to the south of the existing lot adding 505 parking spaces, which would bring the total number of parking spaces on the project site to 1,134. The new Supercenter will be open 24 hours a day/7 days a week.

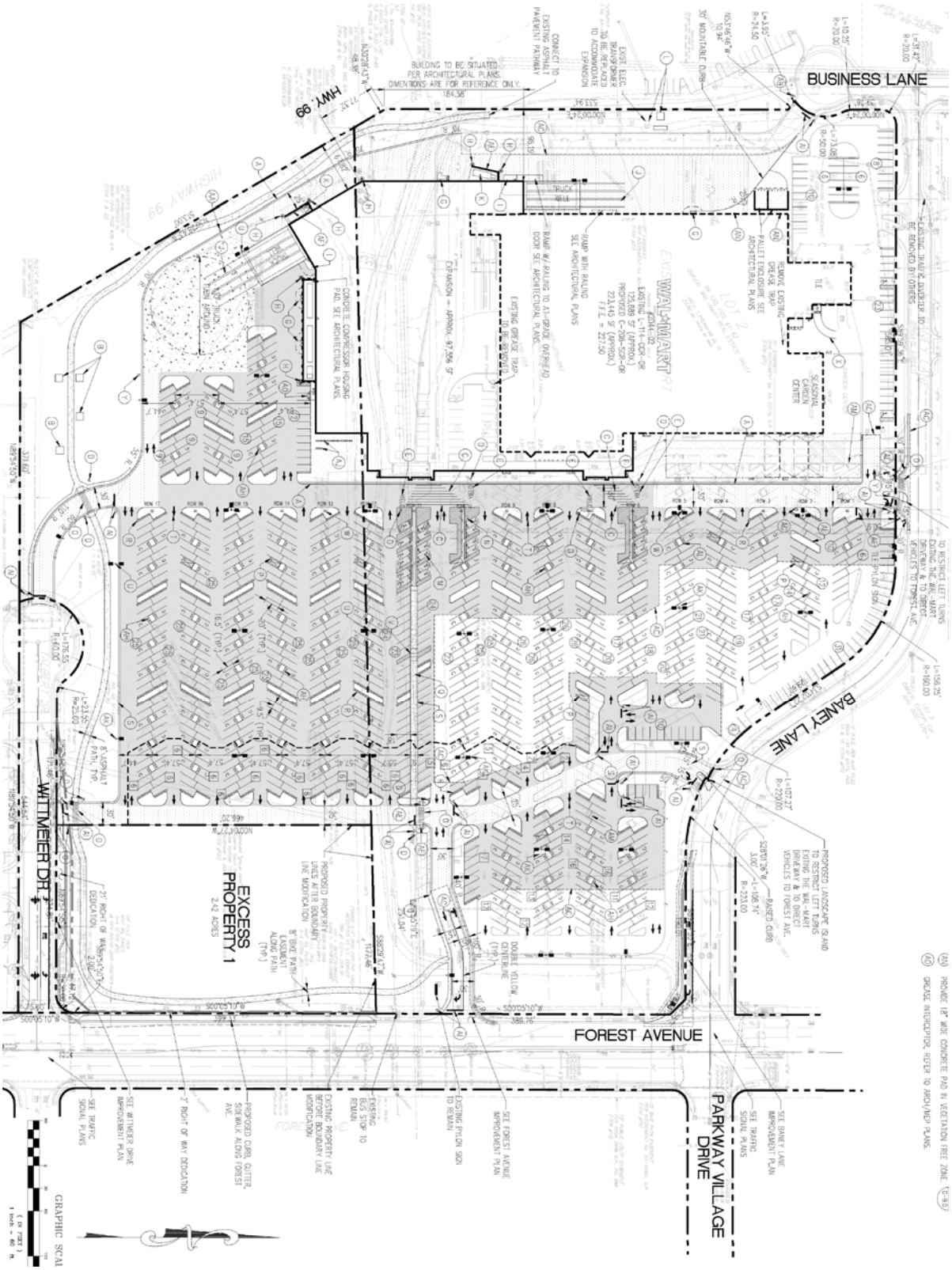
Also, although not officially a part of the project, the traffic analysis also considers the impacts associated with development of the 2.42 acre out parcel located within the extreme southeastern portion of the project site immediately northwest of the intersection of Forest Avenue/Wittmeier Drive. At present, there are no plans for development of this out parcel. For purposes of this study, based on information provided by the project proponent, this out parcel is assumed to be developed with a gas station (with 12 fueling stations) and a 5,000 sq. ft. fast food restaurant with drive through.

Thus, for purposes of this traffic analysis, the term "project" (as used in this report) will refer to the development of the entire 10.62 acre site including the new Wal-Mart Supercenter, gas station, and fast food restaurant. Although it is recognized that the expansion (and associated improvements) will likely be completed prior to development of the gas station and fast food restaurant, for purposes of this traffic study, it will be assumed that the site will be fully developed will all three land uses.

PROJECT TRIP GENERATION

Table 10 provides a summary of trip generation characteristics for the proposed project.

Typically, project site trip generation is estimated utilizing trip generation rates contained in the Institute of Transportation Engineers (ITE) Publication Trip Generation (Seventh Edition). However, traffic counts conducted at the existing Wal-Mart store indicate that trip generation rates and volumes are significantly higher than those calculated from the ITE Trip Generation Manual using the existing store square footage and ITE rates for a "Free Standing Discount Store" (land use 815). Thus, given this existing characteristic, it is



Chico Wal Mart South - TIS

Figure 7

Project Site Plan

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also assumed that trip rates for the proposed Wal-Mart Supercenter would also be higher than ITE trip rates for a comparable "Free Standing Discount Superstore". For this reason, it was necessary to establish an alternative methodology to estimate trip generation rates for the proposed Wal-Mart store. Details of this methodology, which was approved by City of Chico staff, is provided in an appendix at the end of the report.

As shown in Table 10, within the "'Unadjusted Project Trip Generation" portion of the table, it is estimated that the proposed project site will generate a total of 551 AM peak hour trips, 1,157 PM peak hour trips and 1,396 trips during the Saturday peak hour. However, these total unadjusted project trips do not take into account existing trips which are already generated by the existing Wal-Mart, nor internal trips, diverted trips, or pass-by trips which would be associated with the proposed project.

Existing Wal-Mart trips, as well as internal, diverted, and pass-by trips, will reduce the number of "new" trips which will be distributed to the study intersections and roadways. Each of these trip types are described in further detail below.

Existing Wal-Mart Trips

The existing Wal-Mart store currently generates and distributes trips to study intersections and roadways, which need to be taken into consideration in determining proposed project trips. The proposed, expanded Wal-Mart Supercenter will result in higher trip generation than the existing facility. Vehicle trips currently generated by the existing store should be backed out of the trip generation calculated for the proposed Wal-Mart Supercenter since they already exist within local traffic volumes, and failure to back them out would result in the double counting of trips. As Table 10 shows within the "Existing Wal-Mart Trip Generation" portion of the table, the existing Wal-Mart store generates a total of 314 AM peak hour trips, 844 PM peak hour trips and 1,116 trips during the Saturday peak hour. These peak hour trips were established from the driveway counts conducted by OMNI-MEANS in April 2005.

The inbound vs. outbound splits for AM and PM peak hour traffic for the existing Wal-Mart store are different than those established for the proposed Wal-Mart Supercenter. This difference is to be expected since the two versions of the store experience different trip generation characteristics, due largely to the presence of the grocery store.

As shown in Table 10, after deducting trips which are generated by the existing Wal-Mart facility, the proposed Wal-Mart Expansion project is projected to generate 237 "net new" unadjusted Wal-Mart AM peak hour trips, 313 "net new" unadjusted Wal-Mart PM peak hour trips and 280 "net new" unadjusted Wal-Mart trips during the Saturday peak hour period.

TABLE 10
PROJECT TRIP GENERATION

Project Trip Generation Rates

Land Use Category (ITE Code)	Rate Unit	AM Pk Hr Trip Rate			PM Pk Hr Trip Rate			SAT Pk Hr Trip Rate		
		Total	In %	Out %	Total	In %	Out %	Total	In %	Out %
PROPOSED WALMART SUPERSTORE										
Free-Standing Discount Superstore [1]	per ksf	2.47	51%	49%	5.19	49%	51%	6.26	51%	49%
Gas Station (944)[2]	per f.s.	12.07	50%	50%	13.86	50%	50%	19.24	50%	50%
Fast Food Restaurant w/ Drive-Through (934)[2]	per ksf	53.11	51%	49%	34.64	52%	48%	59.2	51%	49%

Notes: ksf = 1,000 square feet, f.s. = fueling station

1) Trip generation rates equations derived based on the actual field data for Wal-Mart Superstore (See Text).

2) Trip generation volumes estimated using the trip rate equations presented in the ITE Trip Generation (7th Edition) for individual use quantities.

Existing Wal-Mart Trip Generation[3]

Land Use Description	Quantity	AM Pk Hr Trips			PM Pk Hr Trips			SAT Pk Hr Trips		
		Total	In	Out	Total	In	Out	Total	In	Out
EXISTING WALMART TRIPS	125.889 ksf	314	185	129	844	425	419	1,116	594	522

3) Existing Wal-Mart Trips based on actual counts conducted at the Wal-Mart driveways.

TABLE 10 – PROJECT TRIP GENERATION CONTINUED

"Unadjusted" Proposed Wal-Mart Trip Generation[4]

Land Use Category (ITE Code)	Rate Unit	AM Pk Hr Trip Rate[1] Total	In %	Out %	PM Pk Hr Trip Rate[1] Total	In %	Out %	SAT Pk Hr Trip Rate[1] Total	In %	Out %
PROPOSED WALMART SUPERSTORE										
Free-Standing Discount Superstore	per ksf	2.47	51%	49%	5.19	49%	51%	6.26	51%	49%
Land Use Description	**Quantity**	**AM Pk Hr Trips Total**	**In**	**Out**	**PM Pk Hr Trips Total**	**In**	**Out**	**SAT Pk Hr Trips Total**	**In**	**Out**
PROPOSED WALMART SUPERSTORE	223.013 ksf	551	281	270	1,157	567	590	1,396	712	684
"UNADJUSTED" WAL-MART TRIPS		551	281	270	1,157	567	590	1,396	712	684
NET NEW "UNADJUSTED" WAL-MART TRIPS		**237**	**96**	**141**	**313**	**142**	**171**	**280**	**118**	**162**

4) Net New "Unadjusted" Trips are derived by subtracting the existing Wal-Mart Trips from the "Unadjusted" Wal-Mart Trips.

Net New "Unadjusted" Project Trip Generation (with Diverted/Pass-By and Internal Trips)

Land Use Description	Quantity	AM Peak Hour Trips Total	In	Out	PM Peak Hour Trips Total	In	Out	SAT Pk Hr Trips Total	In	Out
PROPOSED WALMART SUPERSTORE	223.013 ksf	237	96	141	313	142	171	280	118	162
Gas Station	12 f.s.	145	73	72	166	83	83	231	116	115
Fast Food Restaurant w/ Drive-Through	5 ksf	266	136	130	173	90	83	296	151	145
TOTAL NET NEW "UNADJUSTED" PROPOSED PROJECT TRIPS		**648**	**305**	**343**	**652**	**315**	**337**	**807**	**385**	**422**

Note: Net New "Unadjusted" External Trips include both Diverted/Pass-By Trips and Internal trips.

Internal Trip Reduction[5]

Land Use Description	Internal Trip Reduction % AM,PM and SAT	AM Peak Hour Trips Total	In	Out	PM Peak Hour Trips Total	In	Out	SAT Pk Hr Trips Total	In	Out
PROPOSED WALMART SUPERSTORE	10%	24	10	14	31	14	17	28	12	16
Gas Station	10%	14	7	7	16	8	8	23	12	11
Fast Food Restaurant w/ Drive-Through	10%	27	14	13	17	9	8	30	15	15
TOTAL PROPOSED PROJECT Diverted/Pass-By TRIPS		**65**	**31**	**34**	**64**	**31**	**33**	**81**	**39**	**42**

5) Internal Trips calculated based on methodlogies outlind within the ITE Trip Generation Handbook (October 1998).

"Unadjusted" External Trip Generation (with Diverted Trips)

	AM Peak Hour Trips Total	In	Out	PM Peak Hour Trips Total	In	Out	SAT Pk Hr Trips Total	In	Out
PROPOSED WALMART SUPERSTORE	213	86	127	282	128	154	252	106	146
Gas Station	131	66	65	150	75	75	208	104	104
Fast Food Restaurant w/ Drive-Through	239	122	117	156	81	75	266	136	130
TOTAL "UNADJUSTED" PROPOSED PROJECT EXTERNAL TRIPS	**583**	**274**	**309**	**588**	**284**	**304**	**726**	**346**	**380**

Note: Unadjusted External Trips includes Diverted Trips

Diverted/Pass-By Trips

Land Use Description	Diverted/Pass By Trip % AM,PM	SAT	AM Peak Hour Trips Total	In	Out	PM Peak Hour Trips Total	In	Out	SAT Pk Hr Trips Total	In	Out
PROPOSED WALMART SUPERSTORE[6,7]	46.4%	45.8%	99	40	59	131	59	72	115	49	66
Gas Station[7]	42%	42%	55	28	27	63	32	31	87	44	43
Fast Food Restaurant w/ Drive-Through[7]	49%	49%	117	67	50	76	44	32	130	74	56
TOTAL PROPOSED PROJECT Diverted/Pass-By TRIPS			**271**	**135**	**136**	**270**	**135**	**135**	**332**	**167**	**165**

6) Diverted/Pass-By Trip percentage for the Superstore established based on information provided by the city staff and verified with data available from ITE.

7) Diverted/Pass-By Trip percentages established based on multiple ITE sources (see text).

Net New Proposed Project Trip Generation[8]

Land Use Description	AM Peak Hour Trips Total	In	Out	PM Peak Hour Trips Total	In	Out	SAT Pk Hr Trips Total	In	Out
PROPOSED WALMART SUPERSTORE	114	46	68	151	69	82	137	57	80
Gas Station	76	38	38	87	43	44	121	60	61
Fast Food Restaurant w/ Drive-Through	122	55	67	80	37	43	136	62	74
"NET NEW" PROPOSED PROJECT TRIPS	**312**	**139**	**173**	**318**	**149**	**169**	**394**	**179**	**215**

8) "Net New" Trips exclude Diverted/Pass-By Trips, Internal Trips,and existing WalMart trips within proposed project. Plus project scenarios were analyzed by adding diverted/pass-by trips to the "Net New" trips at all applicable intersections and the project driveways.

Internal Trip Reductions

As noted previously, this traffic analysis considers development of the entire 10.62 acre site including the new Wal-Mart Supercenter, gas station, and fast food restaurant. Since the proposed project is a mixed use development with complimentary land uses, it is expected that some vehicles visiting one of the three different sections of the project site (Wal-Mart Supercenter, gas station, and fast food restaurant) will also be visiting one (or both) of the other land uses. For example, a vehicle leaving the Wal-Mart store may very well stop at the gas station, and/or the fast food restaurant before leaving the project site. Additionally, some vehicles drawn to the site to stop at the gas station will also decide to stop at the fast food restaurant (or vice versa), or perhaps the Wal-Mart store. When a vehicle visits a project site, it is typically calculated as two trips to account for the inbound and outbound component of the round trip. However, if this same vehicle also visited one (or both) of the other two land uses, it would result in four (or six) trips when taking into account the inbound and outbound component to and from each land use. Given the proximity of the proposed land uses to each other, some of these trips might not even occur using a vehicle but rather could be accomplished on foot after parking. Since the primary objective of the traffic study is to analyze impacts to the adjacent roadway system, it is reasonable to reduce raw trip generation volumes to account for only the inbound vehicular trip entering the project site, and the outbound vehicular trip exiting the project site, and neglecting these other internal trips between land uses. Internal trip characteristics were established based on information and methodologies outlined within the Institute of Transportation Engineers (ITE) *Trip Generation Handbook* (October 1998) from which internal trip reduction factors for each of the three land uses, and for each analysis period (daily, AM peak hour, PM peak hour), were established. It was observed that the Wal-Mart superstore would capture 21% and 10% internal trips during the AM and PM peak hour periods, respectively. The gas station would capture 50% and 51% trips during the AM and PM peak hour periods, respectively. The fast food restaurant would capture 19% and 29% trips during the AM and PM peak hour periods, respectively. Similar results are also anticipated for the Saturday peak hour period. As shown in Table 10, only a 10% reduction in internal trips (based on PM peak hour for Wal-Mart) was applied within the analysis to provide for a conservative analysis, while still providing minimal credit for some internal capture.

Pass-by Trips and Diverted Trips

Not all of the traffic generated by either the existing Wal-Mart or the proposed project are newly generated trips, but rather are trips which will exist with or without the project, and which will be drawn to the project for a variety of reasons. Pass-by and diverted trips are drawn to the existing site, and are accounted for within trip generation calculations for the project site. It is expected that pass-by trips and diverted trips (which are both defined in detail below) are drawn to the existing site, and will be drawn to the proposed project site, from traffic volumes along: (1) Forest Avenue, (2) SR 99, (3) 20th Street, (4) Skyway.

Pass-by trips are defined as trips which would occur on the roadway immediately adjacent to the project with or without the project, which are drawn to the site as a matter of convenience. Within this analysis, pass-by trips are defined as those trips drawn to the project site which would be traveling along Forest Avenue. Since pass-by trips would exist along the adjacent roadway with or without the project, they would not add any trips to any intersections or roadways. However, through movements at the project driveways would change to left and right-turn movements at the project driveway intersections, or other intersections such as Forest Avenue/Baney Lane which channel traffic to other project driveways.

Diverted trips are similar in nature to pass-by trips. Whereas a pass-by trip is captured from existing traffic traveling along the roadway adjacent to the project, a diverted trip is captured from existing traffic along a nearby roadway. To arrive at the site, it is necessary for a diverted trip to go somewhat “out of its way”, and thus will add trips to selected roadways and intersections in the vicinity of the project. After leaving the site, the trip will eventually return to the course of travel it would have been on with or without the project. Since the trip is an existing trip which is already accounted for, trips are altered or added only to roadway and intersection volumes which correspond to the diverted portion of the travel route.

Within this analysis, it is assumed that trips will be diverted to the project site from the following nearby roadways: (1) SR 99 (2) 20th Street, and (3) Skyway.

Diverted/Pass-By trip percentages for the proposed Wal-Mart store were provided by the City and verified with the following three reference sources:

- *Trip Generation Handbook*, Institute of Transportation Engineers (ITE), October 1998
- *A Study of Pass-by Trips Associated with Retail Development*, ITE Journal, March 1991
- *Trip Generation Characteristics of Shopping Centers*, ITE Journal, June 1996

Diverted trips percentage for the fast food restaurant type of land use was established following a review of the ITE *Trip Generation Handbook*.

It is assumed that the gas station would draw only pass-by trips along Forest Avenue, and not any diverted trips. Thus, a pass-by trip reduction was applied for this land use.

As Table 10 shows within the "Diverted/Pass-By Trips" portion of the table, of the trips generated by the proposed project, it is assumed that 271 AM peak hour trips, 270 PM peak hour trips and 332 Saturday peak hour trips would be either diverted/pass-by trips which already exist along area roadways.

"Net New" Project Trips

As shown in Table 10, after deducting diverted trips, internal trips, and trips which are generated by the existing Wal-Mart facility, the proposed Wal-Mart Expansion project (including the gas station/fast food restaurant) is projected to generate 312 "net new" AM peak hour trips, 318 "net new" PM peak hour trips and 394 "net new" trips during the Saturday peak hour period.

PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

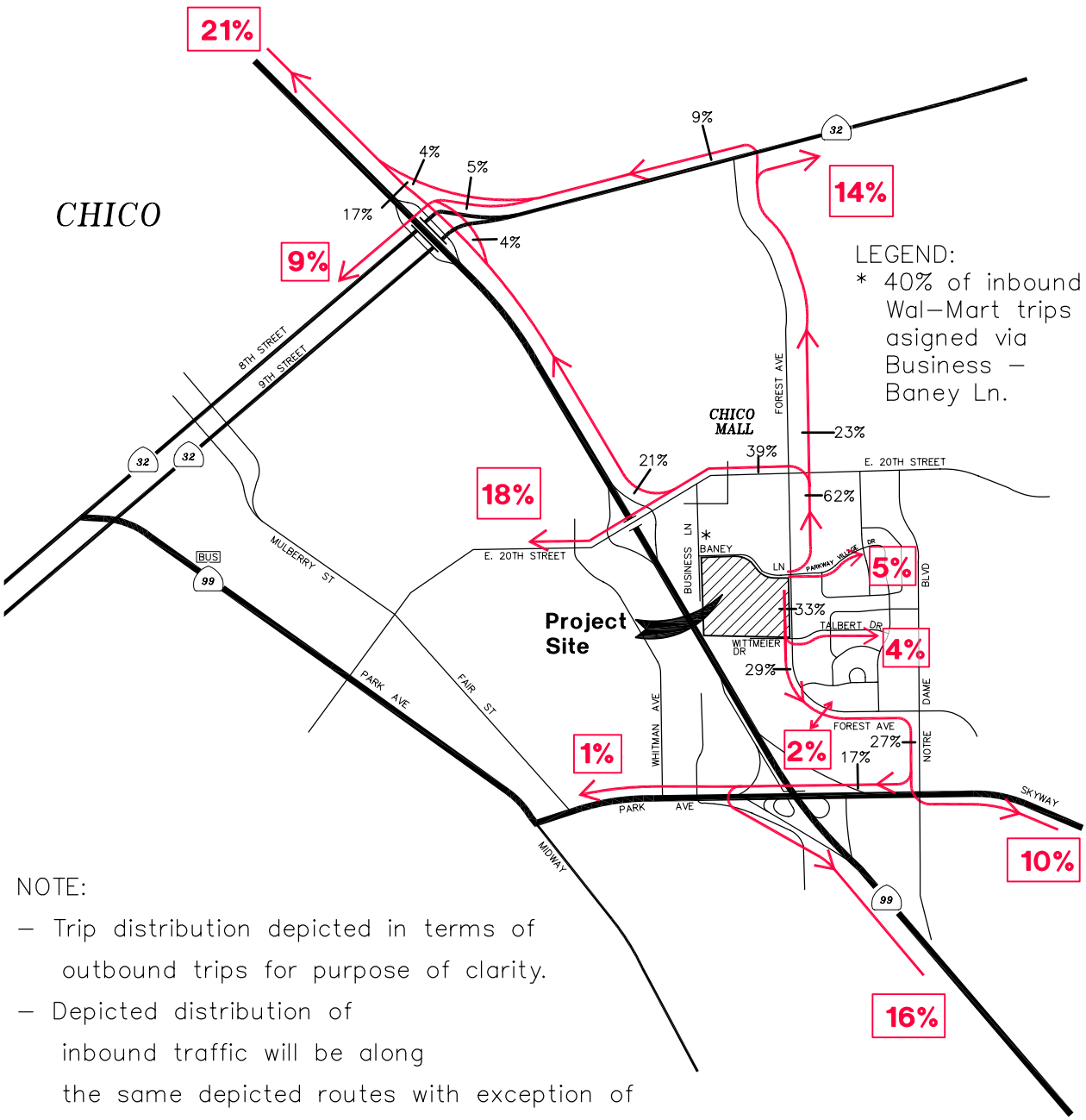
Because of the different nature of the land uses within the proposed project, trip distribution for the Wal-Mart store was analyzed separately from the trip distribution for the gas station and fast food restaurant.

The directional trip distribution and assignment for the Wal-Mart superstore was provided by City staff and was appropriately modified to reflect existing and projected future traffic flows and travel patterns within the vicinity of the project site. Due consideration was also given for the location of other similar facilities, and the location of local and regional housing and employment/commercial centers in relation to the proposed project site when deriving the trip distribution and assignment patterns for the Wal-Mart superstore.

The directional trip distribution and assignment of the gas station/fast food restaurant was estimated based on the location of other similar facilities, and the location of local and regional housing and employment/commercial centers in relation to the proposed project site.

Figure 8a shows the trip distribution for the Wal-Mart superstore and Figure 8b depicts the trip distribution for the gas station/fast food restaurant.

Figure 9 shows the resulting project trips along the study roadways and along effected turning movements at study intersections, assuming the trip generation, trip distribution, and trip assignment patterns described above.



NOTE:

- Trip distribution depicted in terms of outbound trips for purpose of clarity.
- Depicted distribution of inbound traffic will be along the same depicted routes with exception of SR-99 ramps and Business Lane.
- Trip generation does not include "Fast Food/Gas Station".

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Figure 8A

"Wal-Mart" Trip Distribution

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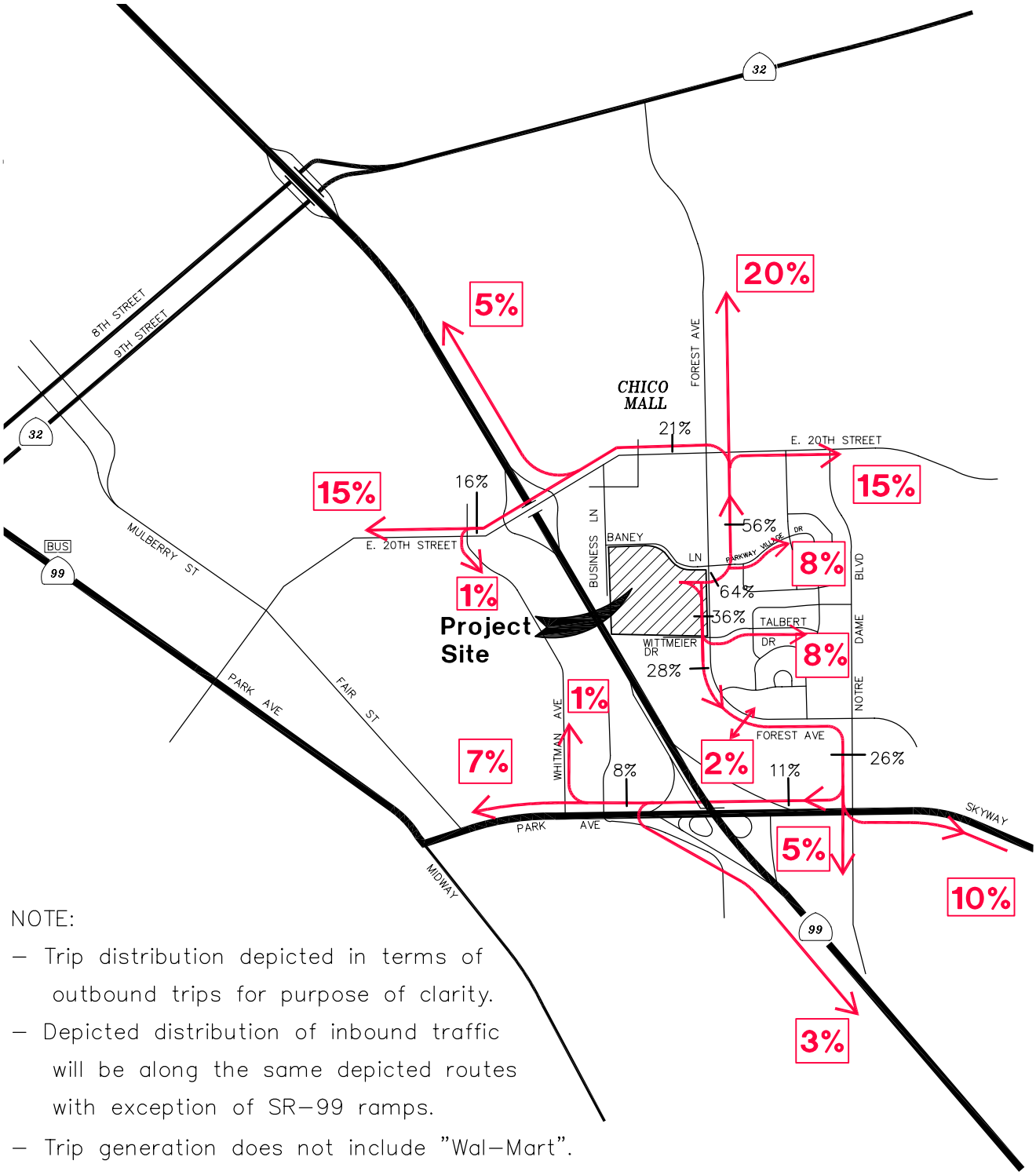

NOTE:

- Trip distribution depicted in terms of outbound trips for purpose of clarity.
- Depicted distribution of inbound traffic will be along the same depicted routes with exception of SR–99 ramps.
- Trip generation does not include "Wal–Mart".

Chico Wal Mart South - TIS

Figure 8B

"Fast Food Restaurant/Gas Station" Trip Distribution

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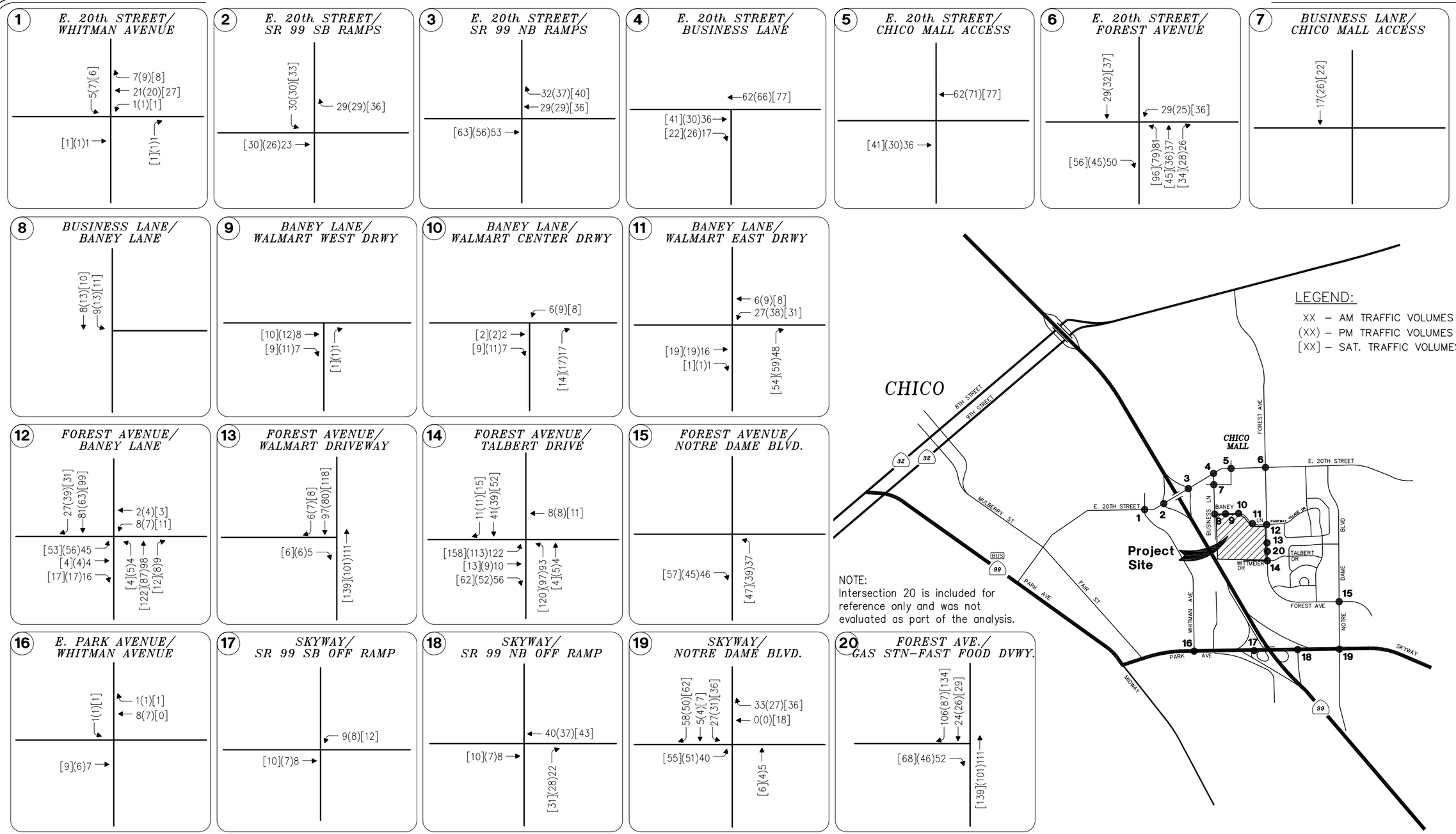

Chico Wal Mart South - TIS

Figure 9

PROJECT ONLY TRAFFIC VOLUMES

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PROJECT SITE ACCESS

The project would utilize all of the existing driveways on Baney Lane, Business Lane, and Forest Avenue, as well as two new additional driveways to the south onto Wittmeier Drive as part of the expansion. At present, all of the access points are full access intersections permitting left-turns in and out of the project site, with the exception of the Forest Avenue driveway, which is a right-in/right-out driveway. The main project access to the existing Wal-Mart store is currently provided via the signalized intersection of Forest Avenue/Baney Lane, with traffic traveling to/from the existing Wal-Mart driveways via Baney Lane.

The current proposed project site plan calls for all driveways along Baney Lane to be constructed with channelization to prohibit outbound left-turns and force all outbound traffic towards Forest Avenue. This restriction is intended to minimize traffic along Business Lane.

Access to the out parcel is assumed to be via an additional right-in/right-out only driveway along Forest Lane, a driveway along Wittmeier Drive (planned as part of the Wal-Mart expansion), and additional cross access locations to/from the Wal-Mart parking lot.

More detailed descriptions of all of the proposed project driveways, with changes and modifications pertaining to circulation patterns following the expansion, are provided below:

- As will be discussed under the recommendations and mitigation section of the report, it is assumed that vehicular movements along the back alley to/from the Baney Lane/Business Lane intersection be restricted to southbound through movements. Whereas traffic from the existing Wal-Mart store can currently exit out via the back alley and Business Lane, it is recommended (and assumed within the analysis) that appropriate signage be provided to prohibit northbound movements along the back alley to minimize project traffic exiting onto Business Lane. The primary truck route for the store is via the Baney Lane/Business Lane intersection with trucks continuing south along the back alley to access the truck bays located near the southwestern portion of the store. When departing from the store, it is assumed the trucks will exit primarily via Wittmeier Drive, although departure would be possible via the alley.

- Traveling east along Baney Lane from Business Lane, the Baney Lane/Wal-Mart West Driveway is located approximately 100 ft. east of Business Lane. The project proposes to allow only partial access, which provides full access into the driveway and permits only the right-turns out of the driveway. Given this, the only possible route available for the outbound Wal-Mart customers/employees who would like to access development along Business Lane would be a circuitous route via Forest Avenue, E 20th Street and Chico Mall access.

  Note: The provision of channelization at the Baney Lane/Wal-Mart West Driveway to prohibit outbound left turns is assumed within the traffic analysis to correspond with the proposed project site plan. However, following discussions with City of Chico staff, the Recommendations/Mitigations section of this report includes the recommendation that outbound left turns be permitted at this driveway to provide a limited opportunity for vehicles departing from the Wal-Mart site to access developments along Business Lane. Given that this driveway is located away from the main parking area, and thus experiences minimal traffic volumes, the net effect is that while some opportunity is provided to make an outbound left turn toward Business Lane, the actual number of left turns will be minimal, and negligible for purposes of this traffic study.

- The Baney Lane/Wal-Mart Central Driveway is located approximately 480 ft. east of Business Lane, and approximately 700 ft. west of Forest Avenue. The proposed project site plan (Figure 8) calls for the construction of a raised channelization island to physically prohibit outbound left turns at this

driveway, proposed partly to address sight distance issues at the driveway. This restriction is recommended, and assumed within the traffic analysis, and existing outbound left-turns from the Wal-Mart at this driveway have been appropriately reassigned onto the network.

- The Baney Lane/Wal-Mart East Driveway is located approximately 315 ft. west of Forest Avenue. The driveway also provides access to the development located at the northwest quadrant of Forest Lane/Baney Lane intersection via a north leg. The proposed project site plan (Figure 8) calls for the construction of a raised channelization island to physically prohibit outbound left turns at this driveway. This restriction is recommended, and assumed within the traffic analysis, and existing outbound left-turns from the Wal-Mart at this driveway have been appropriately reassigned onto the network.

- As with the existing store, the Forest Avenue driveway would provide right-in/right-out access to the project site.

- The Wittmeier Drive/Forest Avenue intersection would provide full access to the project site via two new driveways located along Wittmeier Drive.

- Due to unavailability of any circulation information for the gas station/fast food restaurant, it is assumed that a right-in/right-out access to this portion of the project will be provided via an additional undefined access driveway along Forest Avenue north of Wittmeier Drive. Additionally, the Wittmeier Drive/Forest Avenue intersection, and the easternmost new driveway along Wittmeier Drive, will also provide full access to this portion of the project.

PROJECT ON-SITE CIRCULATION

As the site plan shows, a major component of the on-site circulation system consists of one-way drive aisles located to the east of the proposed store striped for diagonal parking.

As noted within the Project Site Access section, Business Lane and Wittmeier Drive will provide access to the truck docking facilities located along the rear of the store.

The overall layout of the site provides satisfactory vehicle circulation throughout the project site.

The project site plan also provides for a pedestrian system of sidewalks and crosswalks which will channel pedestrians arriving from the new sidewalk/crosswalk system along Forest Avenue to the new store.

PROJECT TRUCK TRAFFIC

The existing Wal-Mart store currently averages 61 deliveries per week, 31 of which are large 18-wheelers. It is anticipated that the proposed Wal-Mart Supercenter will have an average of 85 deliveries per week, 24 more than the existing store. Of these, it is anticipated that 39 will be large 18-wheelers, which is 8 more than the existing store. As described above, a review of the project site plan shows that the overall layout of the site provides satisfactory truck access and circulation throughout the majority of the site. The existing truck route/fire lane behind the existing store would remain, but it would be extended. A truck turnaround approximately 130 feet in diameter would be designated at the end of the truck route extension, in the southwestern portion of the project site.

PROJECT ROADWAY IMPROVEMENTS

The project circulation improvements that will be in place following the expansion are as follows:

- The redesigned intersection of Forest Avenue/Wittmeier Drive would be signalized and improved to contain the following lane geometrics:
  - The northbound Forest Avenue approach would provide a through lane, combined through-right lane and an exclusive left-turn lane.
  - The southbound Forest Avenue approach would provide a through lane, combined through-right lane and an exclusive left-turn lane.
  - The eastbound Wittmeier Drive approach would provide a left-turn lane and combined through-right-left lane.
  - The westbound Talbert Drive approach would provide a combined through-right-left lane.

- The existing traffic signal at the intersection of Forest Avenue/Baney Lane will be modified.

SHORT TERM PLUS PROJECT TRAFFIC OPERATIONS

The *Short Term Plus Project* condition is the analysis scenario in which traffic impacts associated with the proposed project (i.e., the Chico Wal-Mart Store Expansion) are investigated in comparison to the *Short Term No Project* condition scenario.

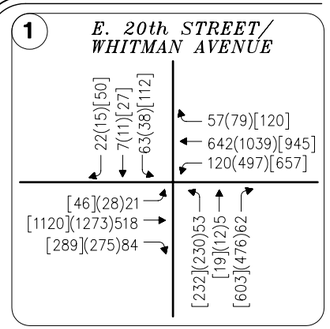
INTERSECTIONS

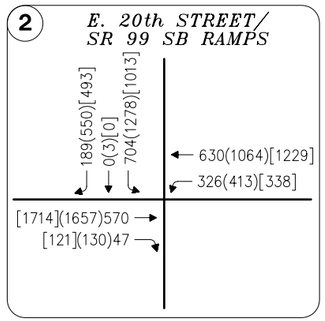
Short Term Plus Project conditions were simulated by superimposing traffic generated by the proposed project onto *Short Term No Project* intersection traffic volumes. The resulting *Short Term Plus Project* traffic volumes are illustrated on Figure 10. *Short Term Plus Project* peak hour intersection traffic operations were quantified utilizing the *Short Term Plus Project* peak hour intersection traffic volumes. Table 11 contains a summary of the resulting *Short Term Plus Project* intersection levels of service.

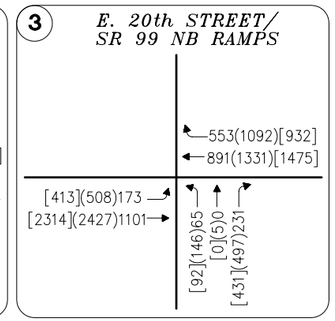
TABLE 11
SHORT TERM PLUS PROJECT INTERSECTION LEVELS-OF-SERVICE

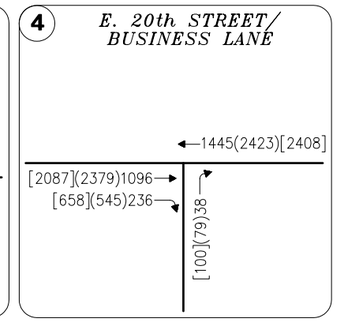
				AM Peak Hour			PM Peak Hour			Sat Peak Hour		
#	Intersection	Control Type[1]	Target LOS	Delay	LOS	Warrant Met?[2]	Delay	LOS	Warrant Met?[2]	Delay	LOS	Warrant Met?[2]
1	E 20th St./ Whitman Avenue	Signal	D	16.1	B	-	31.6	C	-	46.6	D	-
2	**E 20th St./ SB SR-99 Ramps**	**Signal**	**D**	23.7	C	-	**85.7**	**F**	**-**	46.2	D	-
3	**E 20th St./ NB SR-99 Ramps**	**Signal**	**D**	15.8	B	-	**107.1**	**F**	**-**	**67.9**	**E**	**-**
4	E 20th St./ Business Lane	TWSC	D	10.5	B	No	16.2	C	No	15.2	C	No
5	**E 20th St./ Chico Mall Access**	**Signal**	**D**	15.0	B	-	**133.3**	**F**	**-**	**140.2**	**F**	**-**
6	**E 20th St./ Forest Ave**	**Signal**	**D**	45.9	D	-	**192.3**	**F**	**-**	**252.3**	**F**	**-**
7	Business Lane/ Chico Mall Access	TWSC	pvt[3]	12.3	B	No	31.2	D	No	64.1	F	No
8	Business Lane/ Baney Lane	TWSC	pvt[3]	9.3	A	No	11.9	B	No	32.6	D	No
9	Baney Lane/ Walmart West Dwy	TWSC	pvt[3]	9.5	A	No	10.3	B	No	11.8	B	-
10	Baney Lane/ Walmart Central Dwy	TWSC	pvt[3]	9.8	A	No	11.7	B	No	12.2	B	No
11	Baney Lane/ Walmart East Dwy	TWSC	pvt[3]	11.8	B	No	231.6	F	No	433.2	F	Yes
12	Forest Ave/ Baney Lane/Pkwy Village Dr.	Signal	D	24.5	C	-	28.0	C	-	29.9	C	-
13	Forest Ave/ Wal Mart Dwy	TWSC	D	11.1	B	No	12.8	B	No	12.4	B	No
14	Forest Ave/ Talbert-Whittmeier Dr.	Signal	D	28.6	C	-	29.4	C	-	32.5	C	-
15	Forest Ave/ Notre Dame Blvd.	Signal	D	19.5	B	-	17.8	B	-	14.0	B	-
16	E.Park Ave/ Whitman Ave	Signal	D	8.7	A	-	24.2	C	-	22.4	C	-
17	E.Park Ave/ Skyway/SB SR-99 Ramps	TWSC	D	11.1	B	-	33.1	D	-	13.4	B	-
18	E.Park Ave/ Skyway/NB SR-99 Ramps	Signal	D	11.2	B	-	14.5	B	-	11.5	B	-
19	**Skyway/ Notre Dame Blvd**	**Signal**	**D**	31.5	C	-	**65.8**	**E**	**-**	51.1	D	-

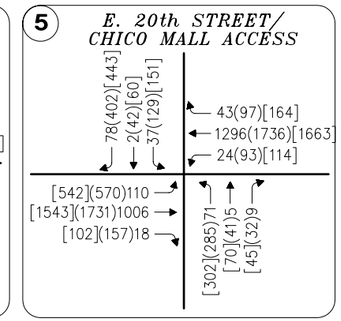
Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
1) TWSC = Two-Way-Stop Control (LOS and delay are based on LOS and delay for worst approach).
2) Warrant = Caltrans peak hour-volume based signal warrant
3) pvt = private roadways, driveways and/or intersections. City's LOS criteria not applicable and excessive delays analyzed in terms of unacceptable vehicle conflict and safety issues.

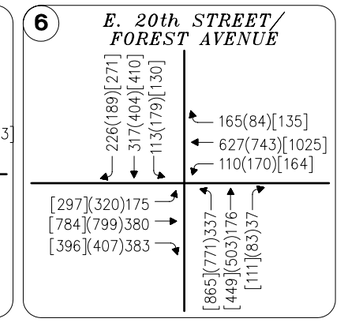


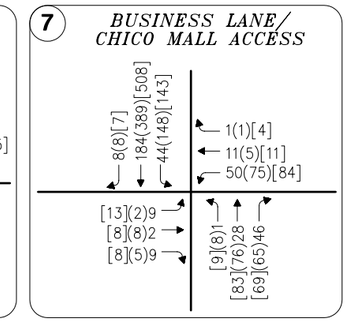


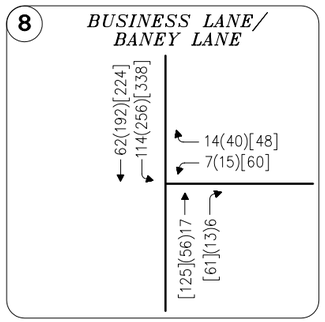


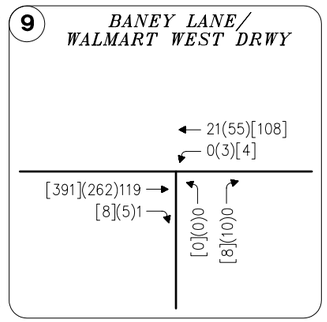


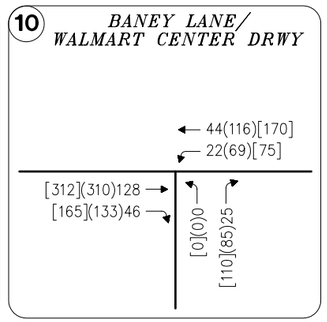


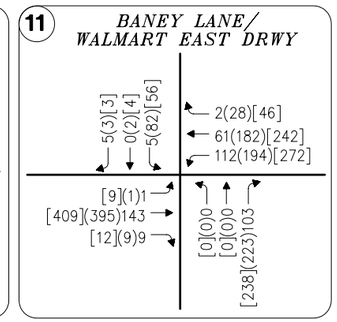


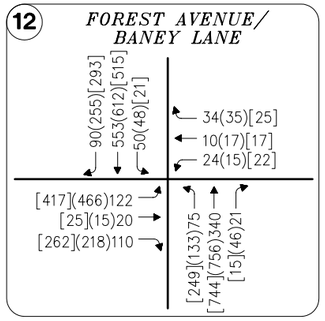


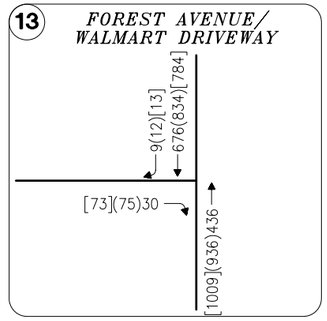


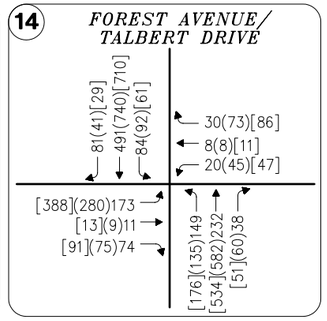


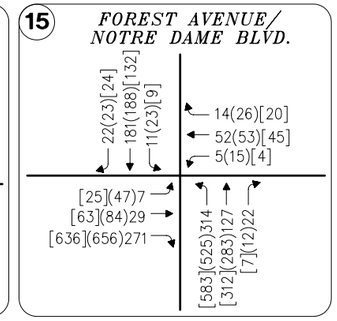


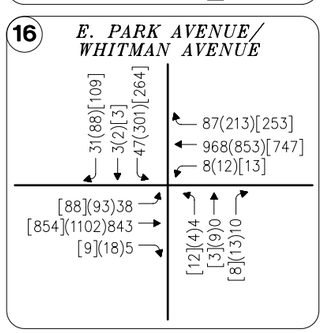


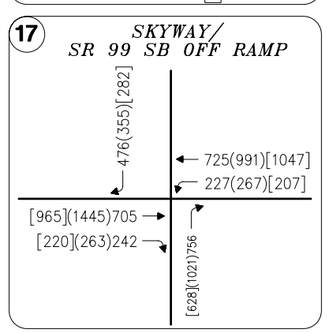


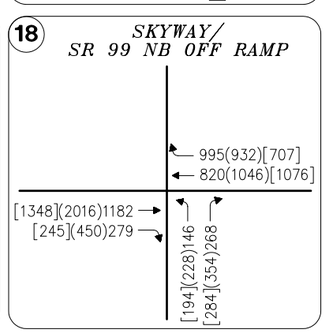


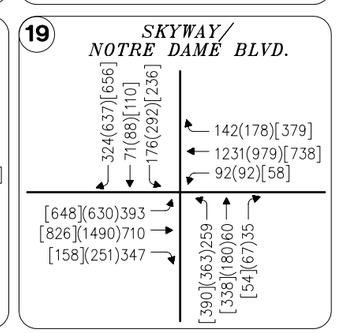


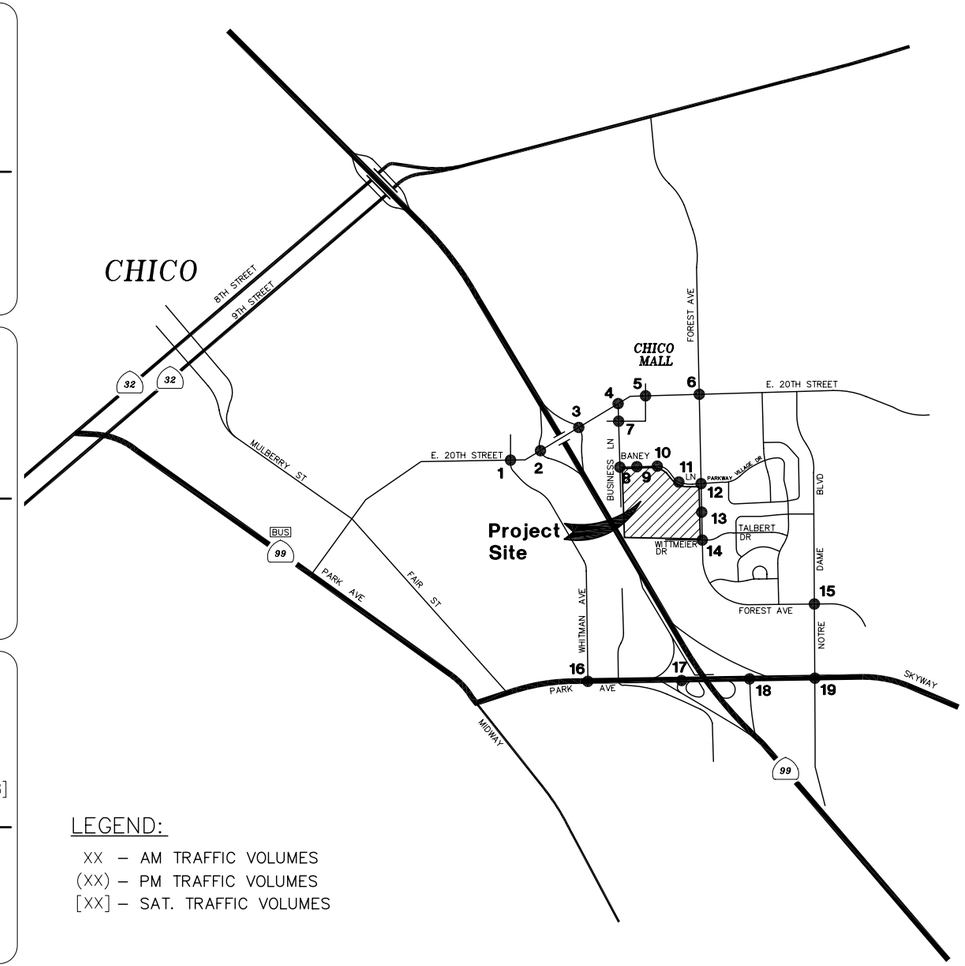












LEGEND:

XX – AM TRAFFIC VOLUMES
(XX) – PM TRAFFIC VOLUMES
[XX] – SAT. TRAFFIC VOLUMES

Chico Wal Mart South - TIS

Figure 10

YEAR 2010 PLUS PROJECT TRAFFIC VOLUMES

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Whereas the intersection of Forest Avenue/Talbert-Whittmeier Drive was found to be operating unacceptably at LOS "F" under *Short Term No Project* conditions during the PM and Saturday peak periods, with the plus project roadway improvements in place, the intersection is projected to operate at LOS "C" during all three study peak periods.

Based on a comparison of "no project" vs. "plus project" intersection levels of service as presented in Table 7 and Table 11, respectively, the following intersections which were found to operate unacceptably for *Short Term No Project* conditions will experience an increase in delay with the addition of project traffic as described below:

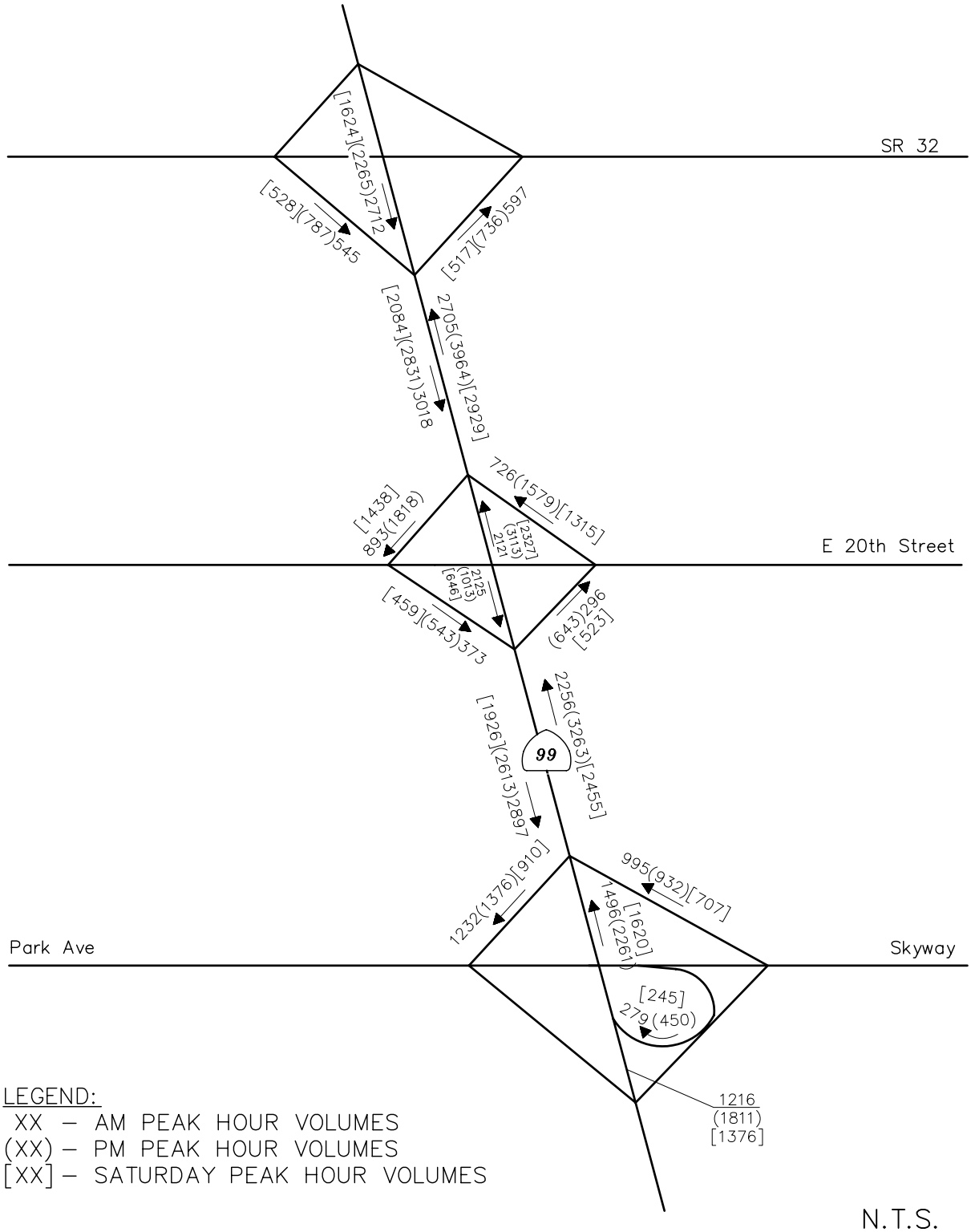
- E. 20th Street/SR 99 SB Ramps – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM peak hour period. The proposed expansion would increase the intersection delay by 5.4 seconds during the PM peak hour.
- E. 20th Street/SR 99 NB Ramps – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM peak hour, and unacceptable LOS "E" during the Saturday peak hour periods. The proposed expansion would increase the intersection delay by 6.6 and 6.0 seconds during the PM and Saturday peak hour periods, respectively.
- E. 20th Street/Chico Mall Access – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM and Saturday peak hour periods, with negligible increases in delay following the proposed expansion.
- E. 20th Street/Forest Avenue – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM and Saturday peak hour periods. The proposed expansion would increase the intersection delay by 57.8 seconds during the PM peak hour period and 91.1 seconds during the Saturday peak hour period.
- Skyway/Notre Dame Boulevard – This signalized intersection is projected to continue to operate at unacceptable LOS "E" during the PM peak hour, with the addition of project traffic increasing the intersection delay by 7.3 seconds.

The following private intersections are projected to operate at poor levels of service for *Short Term Plus Project* conditions. Since there is no LOS threshold, potential mitigation will be described later to address any potential vehicle conflict and safety issues.

- Business Lane/Chico Mall Access – This private unsignalized intersection is projected to continue to operate at LOS "D" during the PM peak hour, and LOS "E" during the Saturday peak hour. The proposed expansion would increase the intersection delay by less than 2 seconds during the PM and Saturday peak hour periods.
- Business Lane/Baney Lane – This private unsignalized intersection is projected to continue to operate at LOS "D" during the Saturday peak hour period, with the addition of project traffic increasing the intersection delay by 5.4 seconds
- Business Lane/Wal-Mart East Driveway – This private unsignalized intersection is projected to continue operating at LOS "F" during the PM and Saturday peak hour periods, with increases in delays exceeding 100 seconds.

FREEWAY MAINLINE SEGMENTS

Short Term Plus Project peak hour mainline operations were evaluated utilizing the peak hour traffic volumes shown on Figure 11. Table 12 summarizes *Short Term Plus Project* conditions' SR 99 freeway mainline operations at the two interchange locations in the vicinity of the study area.



LEGEND:
XX – AM PEAK HOUR VOLUMES
(XX) – PM PEAK HOUR VOLUMES
[XX] – SATURDAY PEAK HOUR VOLUMES

N.T.S.

Chico Wal Mart South - TIS

Figure 11

Year 2010 Plus Project Freeway Mainline and Ramp Volumes

T782TG15.DWG(23NOV05)25–5130–10

TABLE 12
SHORT TERM PLUS PROJECT CONDITIONS: SR 99 MAINLINE LEVELS-OF-SERVICE

Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour Volume	AM Peak Hour Density, (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density, (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Volume	Sat Peak Hour Density, (pc/mi/ln)	Sat Peak Hour LOS
SR 99 NB, north of Skyway I/C	2	E	2,256	20.2	C	3,263	30.3	D	2,455	22.0	C
SR 99 SB, north of Skyway I/C	2	E	2,897	26.2	C	2,613	23.5	C	1,926	17.3	B
SR 99 NB, north of 20th Street I/C	2	E	2,705	24.3	C	3,964	43.2	E	2,929	26.5	D
SR 99 SB, north of 20th Street I/C	2	E	3,018	27.4	D	2,831	26.5	C	2,084	18.7	C

Notes: *pc/mi/ln = Passenger Cars per Mile per Lane*

As shown in Table 12, all four mainline segments are projected to operate at acceptable LOS (LOS "E" or better) during AM, PM and Saturday peak hour periods under *Short Term Plus Project* conditions.

FREEWAY RAMP JUNCTIONS

Short Term Plus Project peak hour ramp operations were evaluated utilizing the peak hour traffic volumes shown on Figure 11.

Table 13 presents the *Short Term Plus Project* conditions' ramp merge/diverge peak hour LOS at the three study interchange locations in the vicinity of the study area.

TABLE 13
SHORT TERM PLUS PROJECT CONDITIONS: SR 99 RAMP JUNCTION LEVELS-OF-SERVICE

SR 99 & Skyway Interchange	Junction Type	Target LOS	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Density (pc/mi/ln)	Sat Peak Hour LOS
SR 99 NB Direct On-Ramp	Merge	E	20.7	C	27.1	C	19.4	B
SR 99 NB Loop On-Ramp	Merge	E	12.0	B	18.9	B	13.2	B
SR 99 SB Off-Ramp	Diverge	E	30.9	D	28.0	D	21.1	C
SR 99 & 20th Street Interchange	**Junction Type**	**Target LOS**	**AM Peak Hour Density (pc/mi/ln)**	**AM Peak Hour LOS**	**PM Peak Hour Density (pc/mi/ln)**	**PM Peak Hour LOS**	**Sat Peak Hour Density (pc/mi/ln)**	**Sat Peak Hour LOS**
SR 99 NB Off-Ramp	Diverge	E	24.5	C	34.6	D	26.5	C
SR 99 NB On-Ramp	**Merge**	**E**	22.6	C	**35.9**	**F**	27.4	C
SR 99 SB Off-Ramp	**Diverge**	**E**	32.1	D	**30.2**	**F**	22.7	C
SR 99 SB On-Ramp	Merge	E	21.1	C	9.8	A	8.4	A
SR 99 & SR 32 Interchange	**Type**	**Target LOS**	**AM Peak Hour (pc/mi/ln)**	**AM Peak Hour LOS**	**PM Peak Hour (pc/mi/ln)**	**PM Peak Hour LOS**	**Sat Peak Hour (pc/mi/ln)**	**Sat Peak Hour LOS**
SR 99 NB Off-Ramp	**Diverge**	**E**	29.0	D	**41.6**	**F**	31.2	D
SR 99 SB On-Ramp	Merge	E	27.9	C	25.9	C	17.9	B

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
pc/mi/ln = Passenger Cars per Mile per Lane

As shown in Table 13, all study ramp merge/diverge junctions are projected to operate at acceptable LOS (LOS "E" or better) during AM, PM and Saturday peak hour periods under *Short Term Plus Project* conditions, with the following exceptions:

- The northbound on-ramp at the SR 99/20th Street interchange is projected to continue operating at unacceptable LOS "F" during the PM peak hour, with an increase in density of 0.3 pc/mi/ln.
- The southbound off-ramp at the SR 99/20th Street interchange is projected to continue operating at unacceptable LOS "F" during the PM peak hour, with an increase in density of 0.5 pc/mi/ln.
- The northbound off-ramp at the SR 99/SR 32 interchange is projected to continue operating at unacceptable LOS "F" during the PM peak hour, with an increase in density of 0.4 pc/mi/ln.

CUMULATIVE CONDITIONS

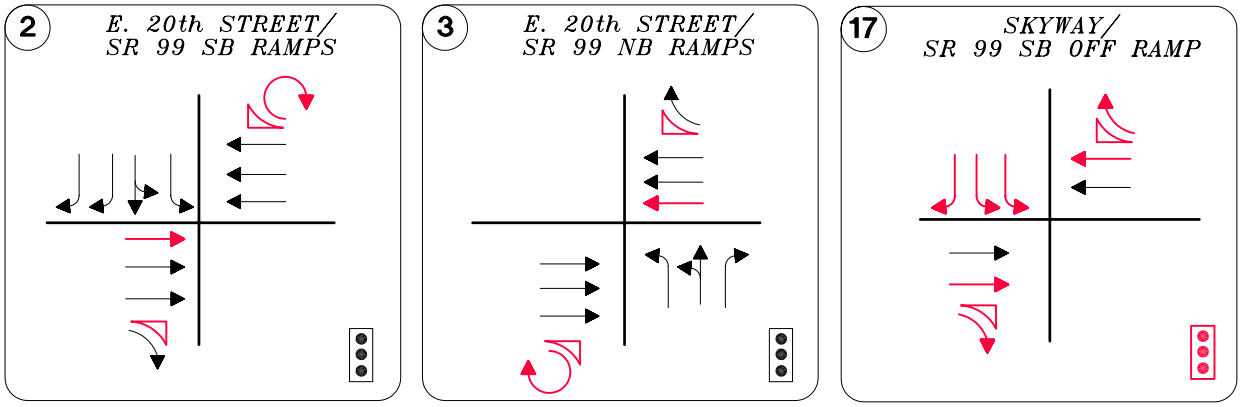
Cumulative conditions refer to analysis scenarios which would exist following assumed build out of the local General Plan, and thus also includes the development of approved/pending projects as identified under Short Term conditions. For purposes of this study, City of Chico staff has directed that Cumulative conditions be taken as year 2018 and be analyzed using 2018 traffic volumes provided by the City. The *Cumulative No Project* condition investigates traffic operations following completion of all approved and pending projects (as well as other regional growth and background growth), but excluding development of the proposed project. The *Cumulative Plus Project* condition is the analysis scenario in which traffic impacts associated with the proposed project (i.e., the Chico Wal-Mart Expansion) are investigated in comparison to the *Cumulative No Project* condition scenario. Wal-Mart Expansion volumes as established using trip generation and distribution methodologies provided for within this analysis were added to *Cumulative No Project* volumes to establish *Cumulative Plus Project* volumes. Cumulative conditions assume that programmed or planned improvements will be completed, including potentially some project related improvements.

PLANNED/PROGRAMMED IMPROVEMENTS

The "*City of Chico, 2005-06 Update of Development Impact Fees, Analysis and Recommendations (Nexus Study) October 2005, Final Report"* included the following list of improvements for facilities analyzed within this study. The City of Chico has directed that these improvements be assumed to be in place for Cumulative conditions.

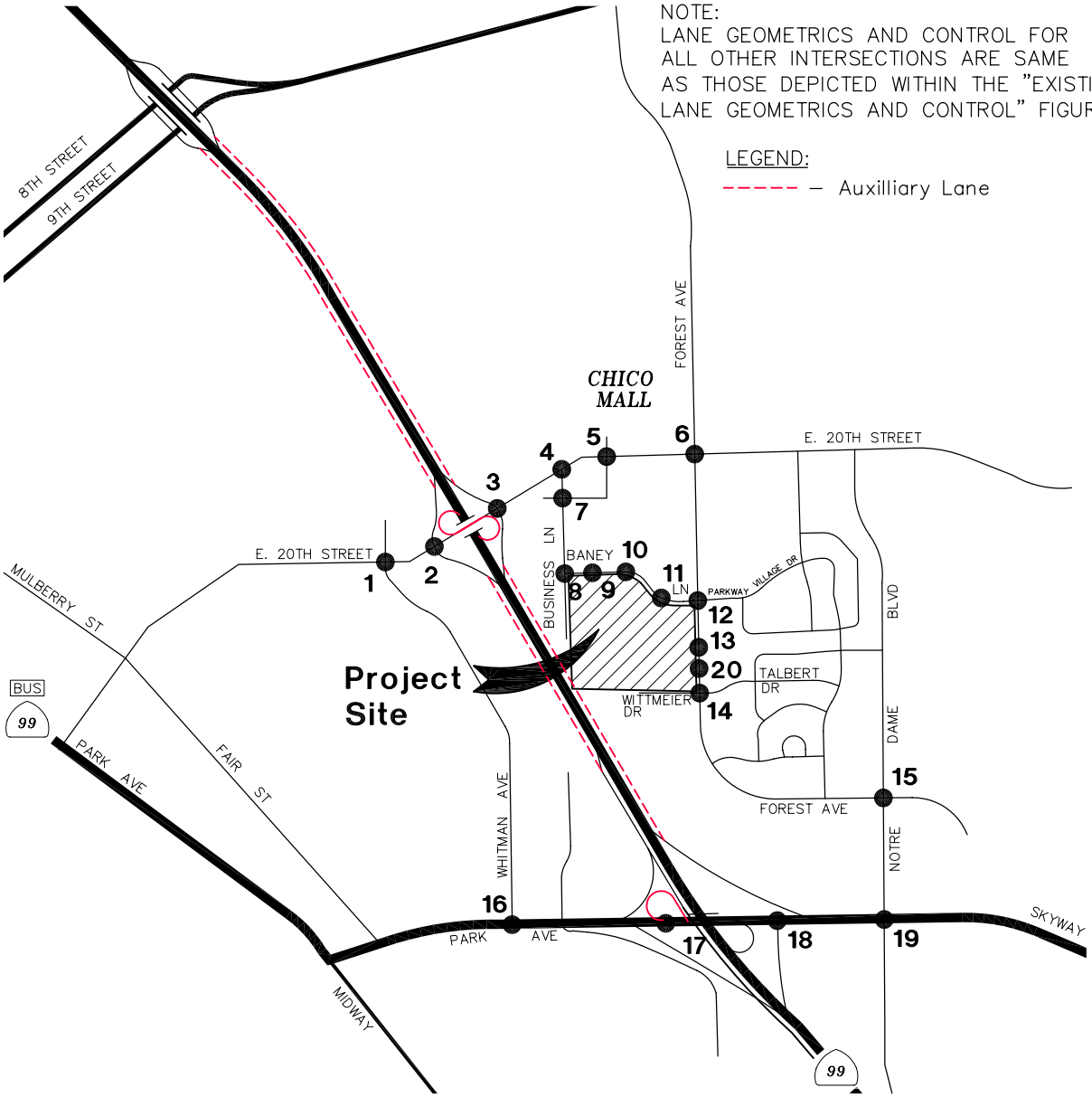
- Auxiliary Lanes will be provided in both directions on SR 99 between Skyway and East 20th Street interchanges
- Auxiliary Lanes will be provided in both directions on SR 99 between East 20th Street and SR 32 interchanges
- SR 99/20th Street Northbound Ramp intersection – (1) Provide eastbound to northbound on-ramp loop, (2) Provide westbound free right with ramp improvements, (3) Provide an additional westbound through lane
- SR 99/20th Street Southbound Ramp intersection – (1) Provide westbound to southbound on-ramp loop, (2) Provide eastbound free right with ramp improvements, (3) Provide an additional eastbound through lane
- SR 99/Skyway Southbound Ramp intersection – (1) Eliminate the existing southbound off-ramp loop, (2) Provide westbound to southbound on-ramp loop, (3) Provide two lefts and a shared through-right lanes at the southbound approach, (4) Provide four through lanes through the intersection, (5) Provide a signal at the intersection of Skyway/SR 99 SB Ramps

No other improvements are assumed to be in place for Cumulative conditions. Figure 12 shows the baseline lane geometrics and control assumed for Cumulative conditions.



NOTE:
LANE GEOMETRICS AND CONTROL FOR ALL OTHER INTERSECTIONS ARE SAME AS THOSE DEPICTED WITHIN THE "EXISTING LANE GEOMETRICS AND CONTROL" FIGURE.

LEGEND:
- - - - - Auxilliary Lane



Chico Wal Mart South - TIS

Figure 12

Year 2018 Lane Geometrics and Control

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TRAFFIC VOLUMES

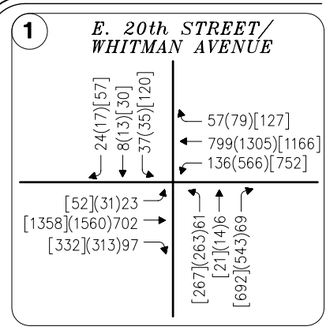
The City of Chico provided volumes sets for all three peak hour periods for Cumulative conditions. As with Short Term conditions, volumes associated with the Wal-Mart Expansion were included within the Cumulative 2018 volumes the City provided. As with Short Term conditions, trip generation as assumed within the Nexus Study, and trip generation as assumed within this traffic study, are different. Whereas the Nexus Study assumed more generalized macro level trip generation and distribution assumptions for the Wal-Mart Expansion project, this traffic study requires a more detailed and refined approach (i.e., specialized trip generation, detailed trip assignments at project driveways and nearby roadways, pass-by and diverted trips adjustments, and diverted trips to/from SR 99). For purposes of this traffic analysis, it is necessary to back out the specific traffic volumes within the raw volumes associated with the Wal-Mart Expansion project (as established within the Nexus Study) for no project conditions, and add them back in (as established for this traffic study) for plus project conditions. In the course of performing the traffic analysis, when Wal-Mart Expansion volumes as provided by the City for year 2018 conditions were backed out, it was noted that the resulting volume sets were not consistent with 2010 volumes established in the previous section of the report at some locations (i.e. resulting 2018 volumes were less than 2010 volumes). Therefore, for purposes of this analysis, at locations where resulting volumes were noted to be inconsistent with 2010 volumes, these volumes were not backed out. Figure 13 shows the projected Cumulative Base (*Cumulative No Project)* traffic volumes.

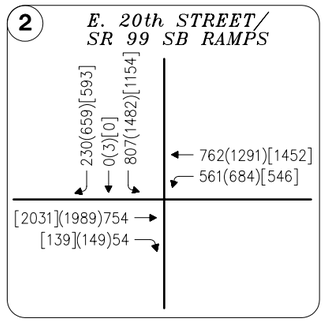
CUMULATIVE NO PROJECT TRAFFIC OPERATIONS

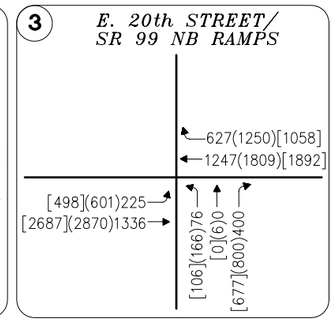
Cumulative No Project conditions establishes a baseline cumulative condition scenario in which the proposed Chico Wal-Mart Store Expansion is assumed to remain undeveloped (i.e., a "vacant" project site) through year 2018, and year 2018 model land uses are assumed elsewhere.

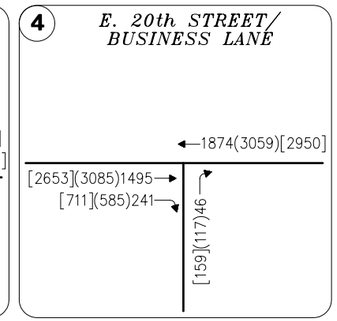
INTERSECTIONS

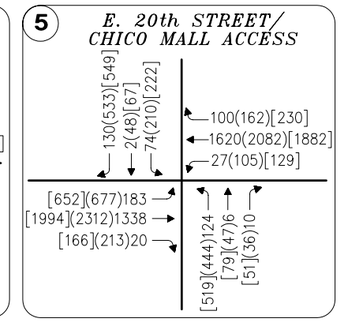
Cumulative No Project AM, PM, and Saturday peak hour intersection traffic operations were quantified utilizing the *Cumulative No Project* peak hour intersection traffic volumes (shown on Figure 13). Table 14 contains a summary of the resulting *Cumulative No Project* intersection levels of service.

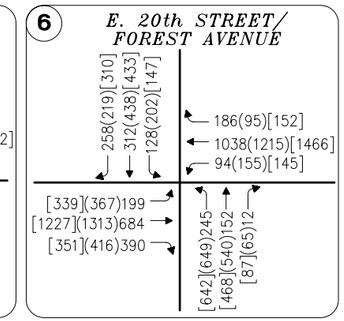


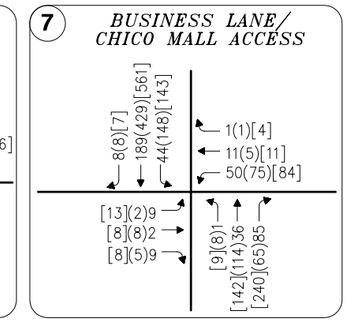


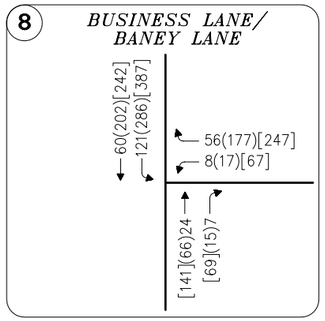


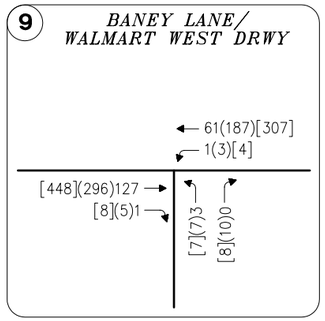


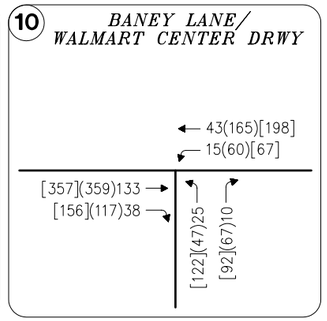


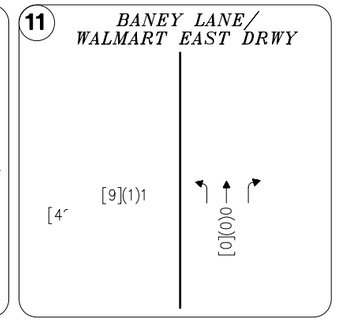


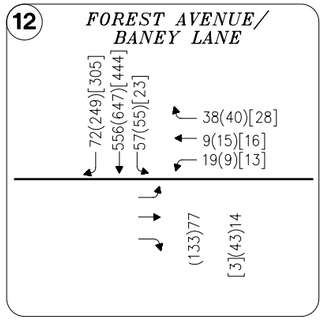


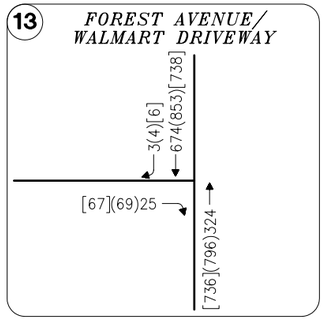


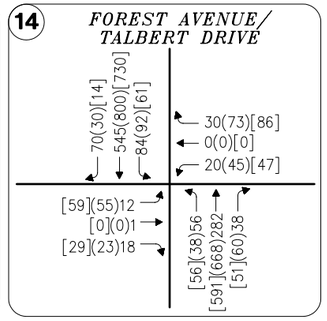


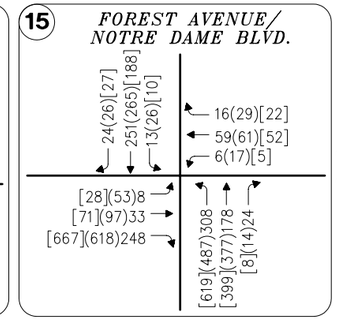


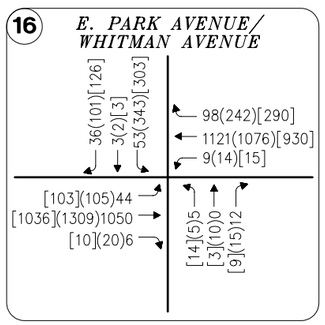


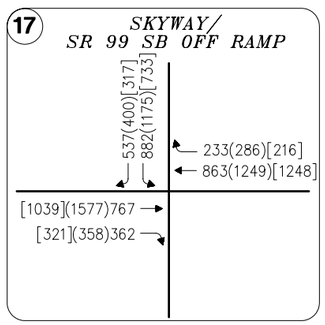


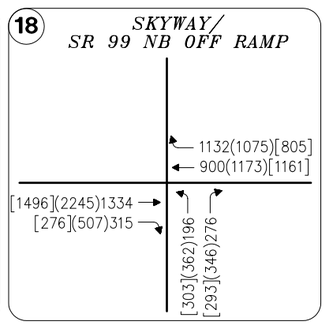


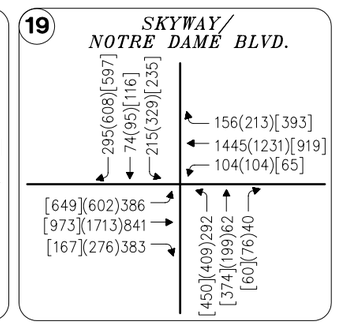


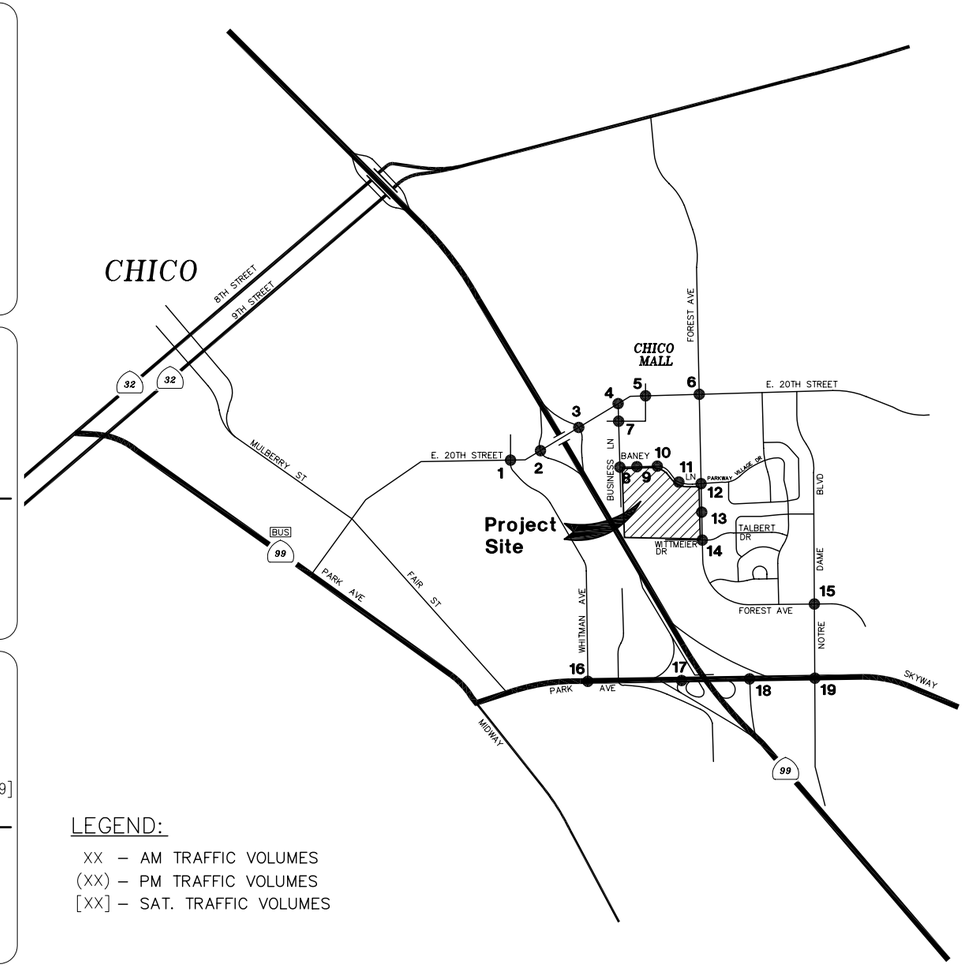












LEGEND:

XX – AM TRAFFIC VOLUMES
(XX) – PM TRAFFIC VOLUMES
[XX] – SAT. TRAFFIC VOLUMES

Chico Wal Mart South - TIS

Figure 13

YEAR 2018 NO PROJECT TRAFFIC VOLUMES

T782TG07.DWG(15NOV05)25–5130–10

TABLE 14
CUMULATIVE NO PROJECT CONDITIONS INTERSECTION LEVELS-OF-SERVICE

				AM Peak Hour			PM Peak Hour			Sat Peak Hour		
#	Intersection	Control Type[1]	Target LOS	Delay	LOS	Warrant Met?[2]	Delay	LOS	Warrant Met?[2]	Delay	LOS	Warrant Met?[2]
1	**E 20th St./ Whitman Avenue**	**Signal**	**D**	15.4	B	-	51.3	D	-	**80.2**	**F**	**-**
2	E 20th St./ SB SR-99 Ramps	Signal	D	19.6	B	-	41.5	D	-	24.2	C	-
3	**E 20th St./ NB SR-99 Ramps**	**Signal**	**D**	20.1	C	-	**106.3**	**F**	**-**	**66.4**	**E**	**-**
4	E 20th St./ Business Lane	TWSC	D	11.7	B	No	25.3	D	No	23.7	C	No
5	**E 20th St./ Chico Mall Access**	**Signal**	**D**	22.7	C	-	**285.2**	**F**	**-**	**274.7**	**F**	**-**
6	**E 20th St./ Forest Ave**	**Signal**	**D**	53.1	D	-	**247.1**	**F**	**-**	**259.4**	**F**	**-**
7	Business Lane/ Chico Mall Access	TWSC	pvt[3]	12.7	B	No	38.2	E	No	113.4	F	No
8	Business Lane/ Baney Lane	TWSC	pvt[3]	9.1	A	No	11.5	B	No	71.8	F	Yes
9	Baney Lane/ Walmart West Dwy	TWSC	pvt[3]	9.7	A	No	11.2	B	No	13.8	B	No
10	Baney Lane/ Walmart Central Dwy	TWSC	pvt[3]	9.9	A	No	14.1	B	No	19.8	C	No
11	Baney Lane/ Walmart East Dwy	TWSC	pvt[3]	11.6	B	No	169.2	F	No	744.9	F	Yes
12	Forest Ave/Baney Lane/Pkwy Village Dr.	Signal	D	24.2	C	-	28.1	C	-	31.8	C	-
13	Forest Ave/ Wal Mart Dwy	TWSC	D	11.0	B	No	12.8	B	No	11.9	B	No
14	**Forest Ave/ Talbert-Whittmeier Dr.**	**TWSC**	**D**	33.9	D	No	**268.6**	**F**	**No**	**168.4**	**F**	**Yes**
15	Forest Ave/ Notre Dame Blvd.	Signal	D	20.4	C	-	20.0	B	-	15.6	B	-
16	E.Park Ave/ Whitman Ave	Signal	D	9.2	A	-	28.8	C	-	25.3	C	-
17	E.Park Ave/ Skyway/SB SR-99 Ramps	Signal	D	20.5	C	-	30.6	C	-	18.3	B	-
18	E.Park Ave/ Skyway/NB SR-99 Ramps	Signal	D	11.6	B	-	19.2	B	-	12.9	B	-
19	**Skyway/ Notre Dame Blvd**	**Signal**	**D**	36.0	D	-	**97.5**	**F**	**-**	**63.6**	**E**	**-**

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
1) TWSC = Two-Way-Stop Control (LOS and delay are based on LOS and delay for worst approach).
2) Warrant = Caltrans peak hour-volume based signal warrant
3) pvt = private roadways, driveways and/or intersections. City's LOS criteria not applicable and excessive delays analyzed in terms of unacceptable vehicle conflict and safety issues.

The intersection of E 20th Street/SR 99 SB Ramps is projected to operate at acceptable LOS "D" or better with the cumulative lane geometrics in place. However, the intersection of E 20th Street/SR 99 NB Ramps would operate at unacceptable LOS "F" during the PM peak hour even with the cumulative lane geometrics in place.

As shown in Table 14, the following signalized intersections are projected to operate at unacceptable LOS at least during one peak hour period under *Cumulative No Project* conditions:

- E. 20th Street/Whitman Avenue
- E. 20th Street/NB SR 99 Ramps
- E. 20th Street/Chico Mall Access
- E. 20th Street/Forest Avenue
- Skyway/Notre Dame Boulevard

As shown in Table 14, the following unsignalized intersection is projected to operate at unacceptable LOS at least during one peak hour period under *Cumulative No Project* conditions:

- Forest Avenue/Wittmeier Drive (projected to meet the warrant criteria during the Saturday peak hour period)

The following private intersections are projected to operate at poor levels of service for *Cumulative No Project* conditions. Since there is no LOS threshold, potential mitigation will be described later to address any potential vehicle conflict and safety issues.

- Business Lane/Chico Mall Access
- Business Lane/Baney Lane (projected to meet the warrant criteria during the Saturday peak hour period)
- Baney Lane/Wal-Mart East Driveway (projected to meet the warrant criteria during the Saturday peak hour period)

FREEWAY MAINLINE SEGMENTS

Cumulative No Project peak hour mainline operations were evaluated utilizing the *Cumulative No Project* peak hour traffic volumes shown on Figure 14. Table 15 summarizes *Cumulative No Project* conditions' SR 99 freeway mainline operations at the two interchange locations in the vicinity of the study area.

TABLE 15
CUMULATIVE NO PROJECT CONDITIONS: SR 99 MAINLINE LEVELS-OF-SERVICE

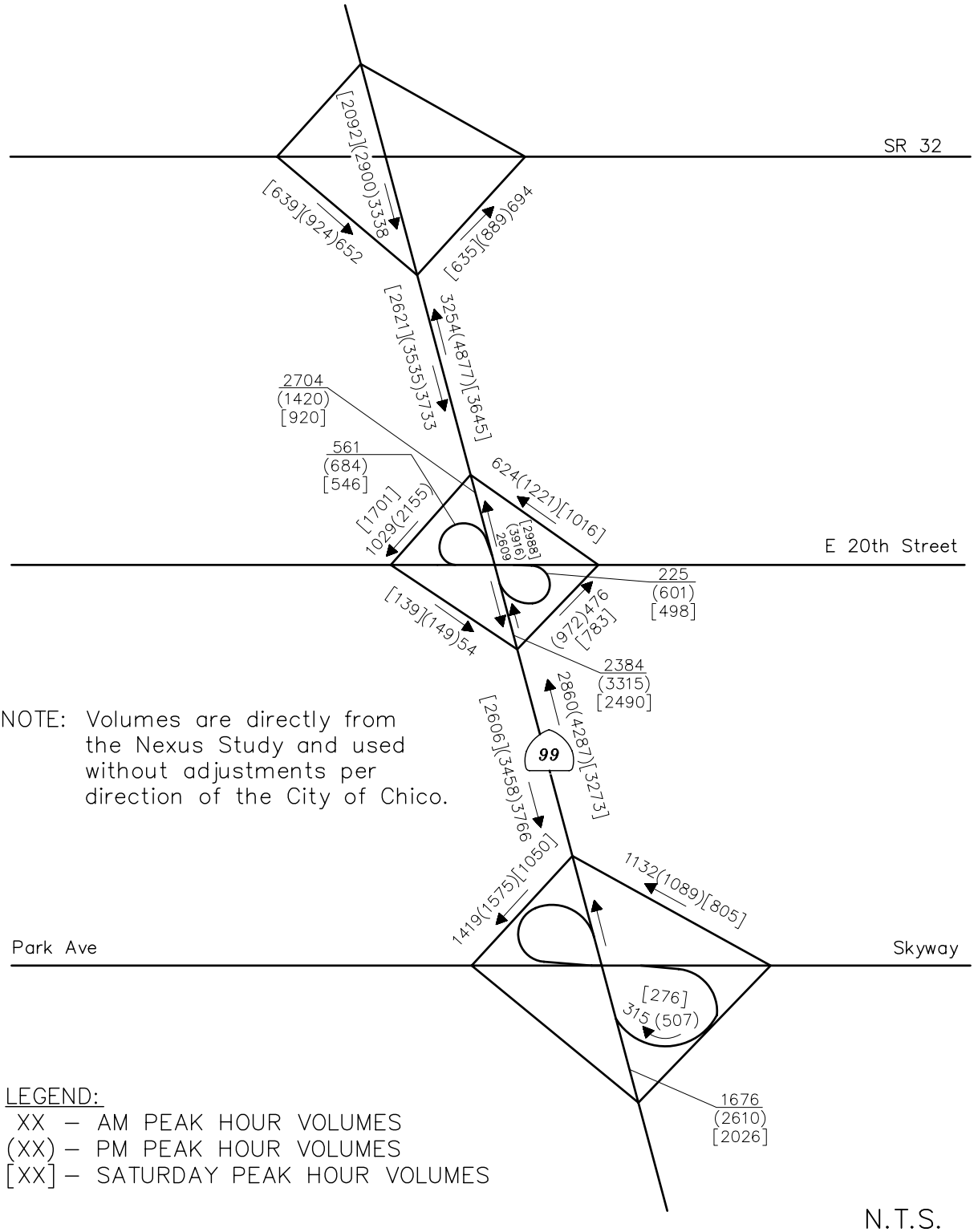
			AM Peak Hour			PM Peak Hour			Sat Peak Hour		
Freeway Mainline Segment	**No. Lanes**	**Target LOS**	**Volume**	**Density, (pc/mi/ln)**	**LOS**	**Volume**	**Density, (pc/mi/ln)**	**LOS**	**Volume**	**Density, (pc/mi/ln)**	**LOS**
SR 99 NB, north of Skyway I/C	3	E	2,860	17.1	B	4,287	25.8	C	3,273	19.6	C
SR 99 SB, north of Skyway I/C	3	E	3,766	22.5	C	3,458	20.7	C	2,606	15.6	B
SR 99 NB, north of 20th Street I/C	3	E	3,254	19.5	C	4,877	30.1	D	3,645	21.8	C
SR 99 SB, north of 20th Street I/C	3	E	3,733	22.3	C	3,535	21.2	C	2,621	15.7	B

Notes: *pc/mi/ln = Passenger Cars per Mile per Lane*

As shown in Table 15, all four mainline segments are projected to operate at acceptable LOS (LOS "E" or better) during AM, PM and Saturday peak hour periods under *Cumulative No Project* conditions. As noted before, auxiliary lanes along SR 99 between the Skyway and Route 32 interchanges are assumed to be in place for *Cumulative No Project* conditions. As such, the SR 99 mainline operations are evaluated assuming a 6-lane facility.

FREEWAY RAMP JUNCTIONS

Cumulative No Project peak hour ramp operations were evaluated utilizing the *Cumulative No Project* peak hour traffic volumes shown on Figure 14. Table 16 presents the *Cumulative No Project* conditions' ramp merge/diverge peak hour LOS at the three study interchange locations in the vicinity of the study area.



NOTE: Volumes are directly from the Nexus Study and used without adjustments per direction of the City of Chico.

LEGEND:
XX – AM PEAK HOUR VOLUMES
(XX) – PM PEAK HOUR VOLUMES
[XX] – SATURDAY PEAK HOUR VOLUMES

N.T.S.

Chico Wal Mart South - TIS

Figure 14

Year 2018 No Project Freeway Mainline and Ramp Volumes

T782TG13.DWG(22NOV05)25–5130–10

TABLE 16
CUMULATIVE NO PROJECT CONDITIONS: SR 99 RAMP JUNCTION LEVELS-OF-SERVICE

SR 99 & Skyway Interchange	Junction Type	Target LOS	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Density (pc/mi/ln)	Sat Peak Hour LOS
SR 99 NB Loop On-Ramp	Merge	E	16.5	B	26.7	C	19.4	B
SR 99 & 20th Street Interchange	**Junction Type**	**Target LOS**	**AM Peak Hour Density (pc/mi/ln)**	**AM Peak Hour LOS**	**PM Peak Hour Density (pc/mi/ln)**	**PM Peak Hour LOS**	**Sat Peak Hour Density (pc/mi/ln)**	**Sat Peak Hour LOS**
SR 99 NB Loop On-Ramp	Diverge	E	13.7	B	22.1	C	16.6	B
SR 99 NB Direct On-Ramp	Merge	E	18.9	B	32.3	D	24.2	C
SR 99 SB Off-Ramp	**Diverge**	**E**	31.8	D	**34.6**	**F**	24.4	C
SR 99 SB Loop On-Ramp	Merge	E	18.4	B	12.3	B	8.3	A
SR 99 & SR 32 Interchange	**Junction Type**	**Target LOS**	**AM Peak Hour Density (pc/mi/ln)**	**AM Peak Hour LOS**	**PM Peak Hour Density (pc/mi/ln)**	**PM Peak Hour LOS**	**Sat Peak Hour Density (pc/mi/ln)**	**Sat Peak Hour LOS**
SR 99 NB Off-Ramp	**Diverge**	**E**	27.7	C	**50.8**	**F**	33.2	D
SR 99 SB On-Ramp	Merge	E	24.5	C	32.9	D	18.4	B

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
pc/mi/ln = Passenger Cars per Mile per Lane

As shown in Table 16, the southbound off-ramp at the SR 99/20th Street interchange and the northbound off-ramp at the SR 99/SR 32 interchange are projected to operate at LOS "F" during the PM peak hour period.

WEAVING ANALYSIS

As noted before, an auxiliary lane would be provided along SR 99 between the Skyway and SR 32 interchanges. Since the spacing between the Skyway and 20th Street interchanges is less than 2500 feet, mainline weaving analysis was performed for the SR 99 segment between the interchanges. Table 17 presents the *Cumulative No Project* conditions' mainline weave peak hour LOS.

TABLE 17
CUMULATIVE NO PROJECT CONDITIONS: SR 99 WEAVING LEVELS-OF-SERVICE

WEAVING SEGMENT	No. Lanes On Frwy	Target Level of Service	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Density (pc/mi/ln)	Sat Peak Hour LOS
Northbound SR 99 – between Skyway and 20th	3	E	27.9	C	**43.8**	**F**	30.7	D
Southbound SR 99 – between Skyway and 20th	3	E	33.5	D	33.4	D	22.1	C

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
pc/mi/ln = Passenger Cars per Mile per Lane

As shown in Table 17, under *Cumulative No Project* conditions, the southbound SR 99 weave segment between the Skyway and 20th Street interchanges is projected to operate acceptably, while the northbound weave segment is projected to operate at unacceptable LOS "F" during the PM peak hour period.

CUMULATIVE PLUS PROJECT TRAFFIC OPERATIONS

Cumulative Plus Project conditions are simulated by superimposing traffic generated by the proposed project over the *Cumulative No Project* traffic volumes at the study intersections and roadway segments. The resulting *Cumulative Plus Project* traffic volumes are illustrated on Figure 15.

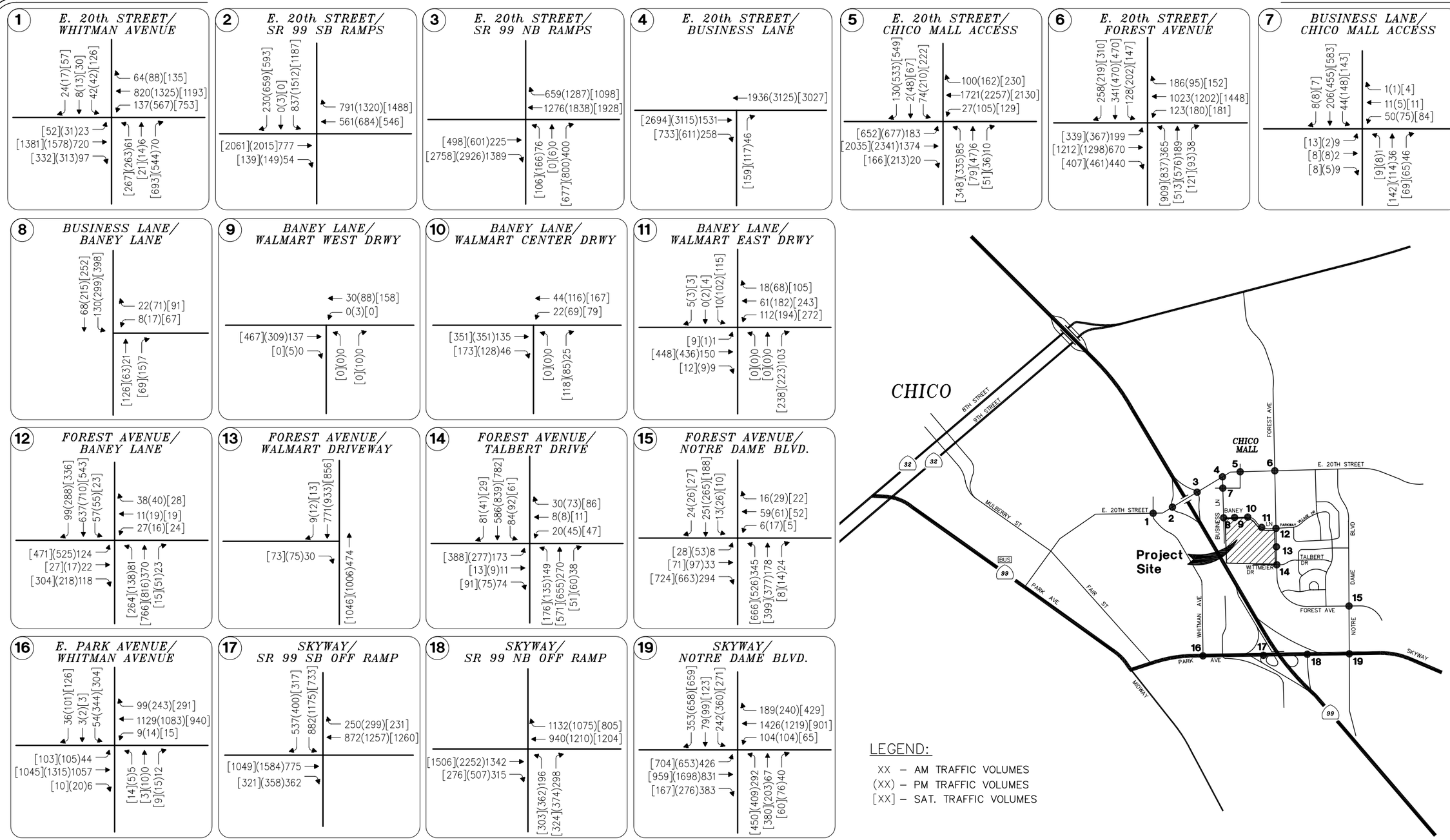
INTERSECTIONS

Cumulative Plus Project AM, PM, and Saturday peak hour intersection traffic operations were quantified utilizing the *Cumulative Plus Project* peak hour intersection traffic volumes shown in Figure 15. Table 18 contains a summary of the resulting intersection levels of service.

TABLE 18
CUMULATIVE PLUS PROJECT CONDITIONS INTERSECTION LEVELS-OF-SERVICE

#	Intersection	Control Type[1]	Target LOS	AM Peak Hour Delay	AM Peak Hour LOS	AM Peak Hour Warrant Met?[2]	PM Peak Hour Delay	PM Peak Hour LOS	PM Peak Hour Warrant Met?[2]	Sat Peak Hour Delay	Sat Peak Hour LOS	Sat Peak Hour Warrant Met?[2]
1	**E 20th St./ Whitman Avenue**	**Signal**	**D**	15.4	B	-	53.7	D	-	**83.4**	**F**	-
2	E 20th St./ SB SR-99 Ramps	Signal	D	19.8	B	-	45.0	D	-	25.0	C	-
3	**E 20th St./ NB SR-99 Ramps**	**Signal**	**D**	20.1	C	-	**109.9**	**F**	-	**70.0**	**E**	-
4	E 20th St./ Business Lane	TWSC	D	11.8	B	No	25.8	D	No	24.3	C	No
5	**E 20th St./ Chico Mall Access**	**Signal**	**D**	22.7	C	-	**285.2**	**F**	-	**274.7**	**F**	-
6	**E 20th St./ Forest Ave**	**Signal**	**D**	**84.4**	**F**	-	**308.4**	**F**	-	**353.4**	**F**	-
7	Business Lane/ Chico Mall Access	TWSC	pvt[3]	12.7	B	No	41.0	E	No	113.4	F	No
8	Business Lane/ Baney Lane	TWSC	pvt[3]	9.4	A	No	12.3	B	No	71.8	F	Yes
9	Baney Lane/ Walmart West Dwy	TWSC	pvt[3]	9.7	A	No	11.2	B	No	13.8	B	No
10	Baney Lane/ Walmart Central Dwy	TWSC	pvt[3]	9.3	A	No	14.1	B	No	19.8	C	No
11	Baney Lane/ Walmart East Dwy	TWSC	pvt[3]	13.2	B	No	446.4	F	No	OVR	F	Yes
12	Forest Ave/Baney Lane/ Pkwy Village Dr.	Signal	D	24.2	C	-	29.1	C	-	32.4	C	-
13	Forest Ave/ Wal Mart Dwy	TWSC	D	11.6	B	No	13.6	B	No	12.9	B	No
14	Forest Ave/ Talbert-Whittmeier Dr.	Signal	D	28.0	C	-	29.4	C	-	33.0	C	-
15	Forest Ave/ Notre Dame Blvd.	Signal	D	20.4	C	-	20.0	B	-	15.6	B	-
16	E.Park Ave/ Whitman Ave	Signal	D	9.2	A	-	28.9	C	-	25.4	C	-
17	E.Park Ave/ Skyway/SB SR-99 Ramps	Signal	D	20.5	C	-	30.8	C	-	18.3	B	-
18	E.Park Ave/ Skyway/NB SR-99 Ramps	Signal	D	12.0	B	-	20.2	C	-	13.4	B	-
19	**Skyway/ Notre Dame Blvd**	**Signal**	**D**	40.4	D	-	**109.3**	**F**	-	**73.4**	**E**	-

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
1) TWSC = Two-Way-Stop Control (LOS and delay are based on LOS and delay for worst approach).
2) Warrant = Caltrans peak hour-volume based signal warrant
3) pvt = private roadways, driveways and/or intersections. City's LOS criteria not applicable and excessive delays analyzed in terms of unacceptable vehicle conflict and safety issues.



Chico Wal Mart South - TIS

Figure 15

YEAR 2018 PLUS PROJECT TRAFFIC VOLUMES

T782TG17.DWG(23NOV05)25–5130–10

Based on a comparison of intersection LOS between the *Cumulative No Project* and *Cumulative Plus Project* conditions as presented in Tables 14 and 18, the following intersections that were projected to operate at unacceptable LOS under *Cumulative No Project* conditions would continue to operate at unacceptable LOS with an increase in delay due to the addition of project traffic, with the exception of Forest Avenue/Wittmeier intersection.

- E. 20th Street/Whitman Avenue – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM peak hour period. The proposed expansion would increase the intersection delay by 3.2 seconds during the PM peak hour period.
- E. 20th Street/NB SR 99 Ramps – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM peak hour period, and unacceptable LOS "E" during the Saturday peak hour period. The proposed expansion would increase the intersection delay by 3.6 seconds during the PM peak hour period, and 3.6 seconds during the Saturday peak hour period.
- E. 20th Street/Chico Mall Access – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM and Saturday peak hour periods, with negligible increases in delay following the proposed expansion.
- E. 20th Street/Forest Avenue – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM and Saturday peak hour periods, and the proposed expansion would also result in unacceptable LOS "F" during the AM peak hour. The proposed expansion would increase the intersection delay by 61.3 seconds during the PM peak hour period, and 94 seconds during the Saturday peak hour period.
- Skyway/Notre Dame Boulevard – This signalized intersection is projected to continue to operate at unacceptable LOS "F" during the PM peak hour period, and unacceptable LOS "E" during the Saturday peak hour period. The proposed expansion would increase the intersection delay by 11.8 seconds during the PM peak hour period, and 9.8 seconds during the Saturday peak hour period.

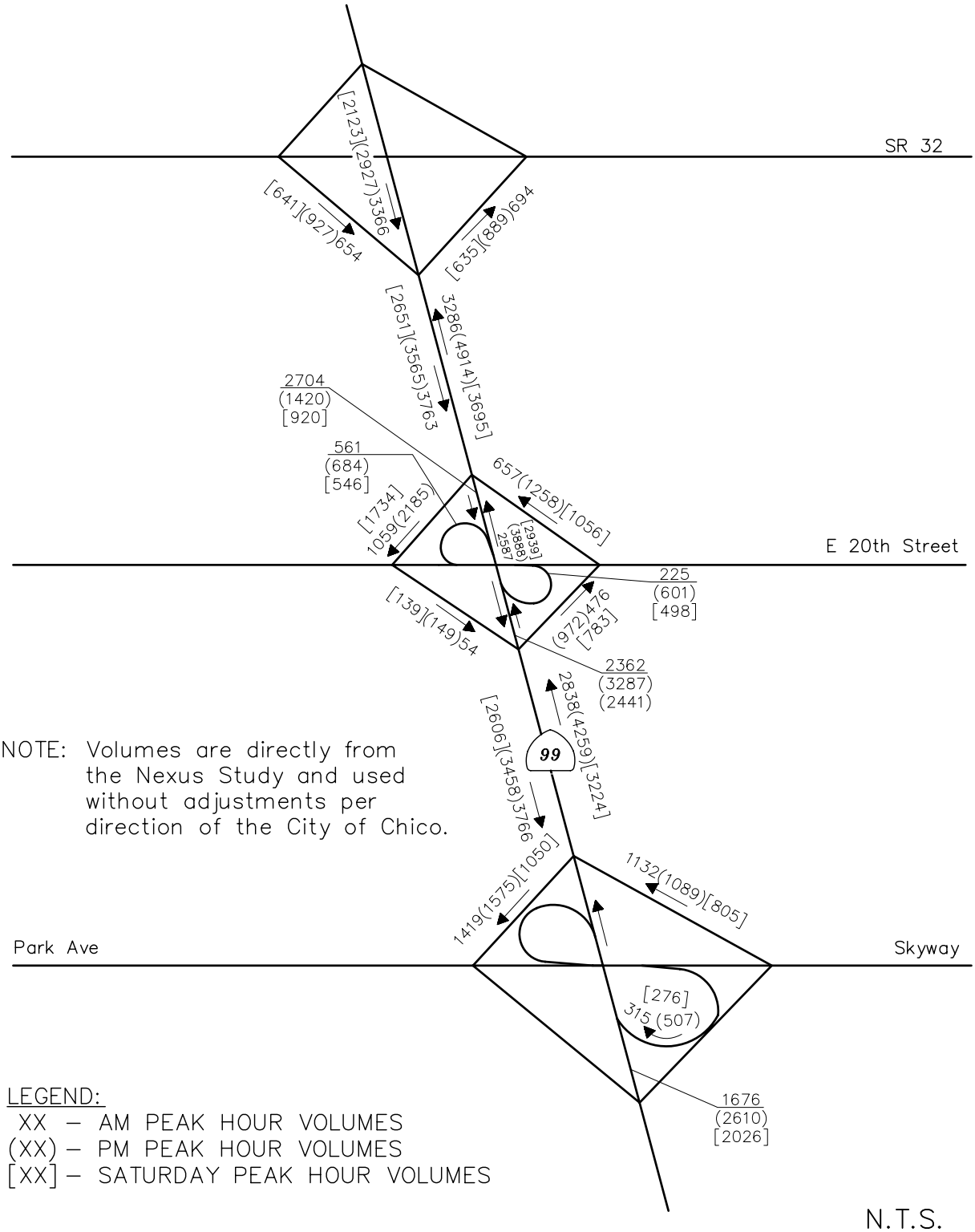
The Forest Avenue/Wittmeier intersection will be signalized following the expansion and is projected to operate at acceptable LOS "C" during all peak hour periods analyzed within the study.

The following private intersections are projected to operate at poor levels of service for *Cumulative Plus Project* conditions. Since there is no LOS threshold, potential mitigation will be described later to address any potential vehicle conflict and safety issues.

- Business Lane/Chico Mall Access – This private unsignalized intersection is projected to continue to operate at LOS "E" during the PM peak hour period, and LOS "F" during the Saturday peak hour period. The proposed expansion would increase the intersection delay by less than 2 seconds during the PM and Saturday peak hour periods.
- Business Lane/Baney Lane – This private unsignalized intersection is projected to continue to operate at LOS "F" during the Saturday peak hour period, with negligible increases in delay following the proposed expansion.
- Business Lane/Wal-Mart East Driveway – This private unsignalized intersection is projected to continue operating at LOS "F" during the PM and Saturday peak hour periods, with increases in delays exceeding 100 seconds.

FREEWAY MAINLINE SEGMENTS

Cumulative Plus Project peak hour mainline operations were evaluated utilizing the peak hour traffic volumes shown on Figure 16. Table 19 summarizes SR 99 freeway mainline operations at the two interchange locations in the vicinity of the study area for *Cumulative Plus Project* conditions.



NOTE: Volumes are directly from the Nexus Study and used without adjustments per direction of the City of Chico.

LEGEND:
XX – AM PEAK HOUR VOLUMES
(XX) – PM PEAK HOUR VOLUMES
[XX] – SATURDAY PEAK HOUR VOLUMES

N.T.S.

Chico Wal Mart South - TIS

Figure 16

Year 2018 Plus Project Freeway Mainline and Ramp Volumes

T782TG14.DWG(23NOV05)25–5130–10

TABLE 19
CUMULATIVE PLUS PROJECT CONDITIONS: SR 99 MAINLINE LEVELS-OF-SERVICE

Freeway Mainline Segment	No. Lanes	Target LOS	AM Peak Hour Volume	AM Peak Hour Density, (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Volume	PM Peak Hour Density, (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Volume	Sat Peak Hour Density, (pc/mi/ln)	Sat Peak Hour LOS
SR 99 NB, north of Skyway I/C	3	E	2,838	17.0	B	4,259	25.6	C	3,224	19.3	C
SR 99 SB, north of Skyway I/C	3	E	3,766	22.5	C	3,458	20.7	C	2,606	15.6	B
SR 99 NB, north of 20th Street I/C	3	E	3,286	19.7	C	4,914	30.5	D	3,695	22.1	C
SR 99 SB, north of 20th Street I/C	3	E	3,763	22.5	C	3,565	21.3	C	2,651	15.9	B

Notes: *pc/mi/ln = Passenger Cars per Mile per Lane*

As shown in Table 19, all four mainline segments are projected to operate at acceptable LOS (LOS "E" or better) during AM, PM and Saturday peak hour periods under *Cumulative Plus Project* conditions. As noted before, auxiliary lanes along SR 99 between the Skyway and SR 32 interchanges are assumed to be in place for *Cumulative Plus Project* conditions. As such, the SR 99 mainline operations are evaluated assuming a 6-lane facility.

FREEWAY RAMP JUNCTIONS

Cumulative Plus Project peak hour ramp operations were evaluated utilizing the *Cumulative Plus Project* peak hour traffic volumes shown on Figure 16. Table 20 presents the ramp merge/diverge peak hour LOS at the three study interchange locations in the vicinity of the study area for *Cumulative Plus Project* conditions.

TABLE 20
CUMULATIVE PLUS PROJECT CONDITIONS: SR 99 RAMP JUNCTION LEVELS-OF-SERVICE

SR 99 & Skyway Interchange	Junction Type	Target LOS	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Density (pc/mi/ln)	Sat Peak Hour LOS
SR 99 NB Loop On-Ramp	Merge	E	16.5	B	26.7	C	19.4	B
SR 99 & 20th Street Interchange	**Junction Type**	**Target LOS**	**AM Peak Hour Density (pc/mi/ln)**	**AM Peak Hour LOS**	**PM Peak Hour Density (pc/mi/ln)**	**PM Peak Hour LOS**	**Sat Peak Hour Density (pc/mi/ln)**	**Sat Peak Hour LOS**
SR 99 NB Loop On-Ramp	Diverge	E	13.6	B	21.9	C	16.4	B
SR 99 NB Direct On-Ramp	Merge	E	19.1	B	32.5	D	24.3	C
SR 99 SB Off-Ramp	**Diverge**	**E**	32.1	D	**34.9**	**F**	**24.6**	**F**
SR 99 SB Loop On-Ramp	Merge	E	18.4	B	12.3	B	8.3	A
SR 99 & SR 32 Interchange	**Junction Type**	**Target LOS**	**AM Peak Hour Density (pc/mi/ln)**	**AM Peak Hour LOS**	**PM Peak Hour Density (pc/mi/ln)**	**PM Peak Hour LOS**	**Sat Peak Hour Density (pc/mi/ln)**	**Sat Peak Hour LOS**
SR 99 NB Off-Ramp	**Diverge**	**E**	28.2	D	**51.1**	**F**	34.2	D
SR 99 SB On-Ramp	Merge	E	24.8	C	33.7	D	18.6	B

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
pc/mi/ln = Passenger Cars per Mile per Lane

As shown in Table 20, all of ramp merge/diverge junctions analyzed are projected to operate at acceptable LOS under the plus project conditions, with the following exceptions:

- The southbound off-ramp at the SR 99/20th Street interchange is projected to continue operating at unacceptable LOS "F" during the PM peak hour (as well as during the Saturday peak hour), with an increase in density of 0.3 pc/mi/ln or less.
- The northbound off-ramp at the SR 99/SR 32 interchange is projected to continue operating at unacceptable LOS "F" during the PM peak hour, with an increase in density of 0.3 pc/mi/ln.

WEAVING ANALYSIS

As noted before, an auxiliary lane would be provided along SR 99 between the Skyway and SR 32 interchanges. Since the spacing between the Skyway and 20th Street interchanges is less than 2,500 feet, mainline weaving analysis was performed for the SR 99 segment between the interchanges. **Table 21** presents the *Cumulative Plus Project* conditions' mainline weave LOS for all study peak hour periods.

TABLE 21
CUMULATIVE PLUS PROJECT CONDITIONS: SR 99 WEAVING LEVELS-OF-SERVICE

WEAVING SEGMENT	No. Lanes On Frwy	Target Level of Service	AM Peak Hour Density (pc/mi/ln)	AM Peak Hour LOS	PM Peak Hour Density (pc/mi/ln)	PM Peak Hour LOS	Sat Peak Hour Density (pc/mi/ln)	Sat Peak Hour LOS
Northbound SR 99 – between Skyway and 20th	3	E	27.9	C	**43.8**	**F**	30.7	D
Southbound SR 99 – between Skyway and 20th	3	E	33.5	D	33.4	D	22.1	C

Notes: **Bolded entries indicate intersections operating at Unacceptable LOS.**
pc/mi/ln = Passenger Cars per Mile per Lane

As shown in Table 21, with the proposed expansion under *Cumulative Plus Project* conditions, the southbound SR 99 weave segment between the Skyway and 20th Street interchanges is projected to continue operating acceptably. The northbound weave segment is projected to continue operating unacceptably at LOS "F" during the PM peak hour period, with a negligible increase in density.

RECOMMENDATIONS/MITIGATIONS

This section presents recommended base improvements as well as project-related mitigation measures at the study intersections and roadway segments, developed based on the findings from the analyses presented in the prior sections of this report. Additional recommendations regarding access to the project site are also included.

EXISTING CONDITIONS

City/Caltrans Intersections

The following intersections under the jurisdiction of either the City or Caltrans were found to operate at an undesirable level of service under *Existing* conditions.

E. 20th Street/Chico Mall Access – The signalized intersection is found to be currently operating at unacceptable LOS "E" during the Saturday peak hour periods under *Existing* conditions. Provision of overlap signal phasing for the southbound right turn movement and restricting the eastbound to westbound U-turns will yield acceptable operations at this intersection for the Saturday peak hour period under *Existing* conditions. As will be noted later, the improvement identified above would not provide acceptable operations for year 2010 conditions.

E. 20th Street/Forest Avenue – The signalized intersection is found to be currently operating at unacceptable LOS "E" during the Saturday peak hour period. In order to achieve acceptable levels of service at this intersection, the following improvement is suggested under *Existing* conditions*:*

- Provide an additional left-turn lane along the northbound Forest Avenue approach

With this improvement, acceptable LOS "D" would be achieved during the Saturday peak hour period under *Existing* conditions.

However, given the existing physical constraints at the intersection, it is not known if this improvement is economically feasible. If this improvement is not economically feasible, the unacceptable LOS would be significant and unavoidable.

As will be noted later, the improvement identified above would not provide acceptable operations for year 2010 conditions.

Forest Avenue/Wittmeier Drive – This unsignalized intersection currently operates at unacceptable LOS "E" during the PM peak hour period based on the delay along the eastbound Wittmeier Drive approach. The westbound left-turn operates at unacceptable LOS "D" and the left-turns along Forest Avenue currently operate at acceptable LOS "A". The intersection would operate at unacceptable LOS until the signalization improvements associated with the proposed Wal-Mart expansion development are implemented. The intersection does not meet Caltrans peak hour volume signal warrant criteria for *Existing* conditions, and as no other improvements to the intersection would improve the levels of service, no improvements are recommended under *Existing* conditions at this intersection.

Private Intersections

The following private intersections (all of which are unsignalized) were found to operate at poor levels of service under *Existing* conditions. Since there is no LOS threshold for private intersections, potential mitigation is described to address any potential vehicle conflict and safety issues.

Business Lane/Chico Mall Access – This unsignalized intersection currently operates at LOS "E" during the Saturday peak hour based on the delay along the worst approach (westbound Chico Mall Access). The high delays along the westbound approach is a circulation issue, and it is anticipated that drivers familiar with the area would seek alternative ingress and egress routes if undesirable queues are observed. The intersection does not meet Caltrans peak hour volume signal warrant criteria for *Existing* conditions.

The following measures are recommended to mitigate potential vehicle conflict and safety issues:

- Development and implementation of a Traffic Management Plan which would potentially include (1) adjusting the shifts of employees to non-peak periods, (2) providing directional signage to shift traffic towards other access points, and (3) providing on-site personnel during peak holiday seasons to physically direct traffic.
- Ultimately, consider redesigning and improving the access and circulation to/from the Chico Mall and development along Business Lane.

Baney Lane/Wal-Mart East Driveway – This unsignalized intersection currently operates at LOS "E" during the Saturday peak hour based on the delay along the worst approach (southbound driveway). Poor LOS and long queuing would be experienced only by southbound vehicles within the driveway exiting the gas station in the northwest quadrant of the Forest Avenue/Baney Lane intersection. Although restricting the outbound left-turns along the southbound approach would improve the levels of service, City staff has indicated that this improvement would not be feasible. The intersection does not meet Caltrans peak hour volume signal warrant criteria for *Existing* conditions, and as no other reasonable improvements to the intersection would improve the levels of service, no improvements are recommended under *Existing* conditions at this intersection.

Per information provided by City staff, the vacant property adjacent to the gas station is planned to be developed as a retail development, and access to the adjacent development will almost certainly be provided to both Forest Avenue and Baney Lane. It is suggested that when developed that a cross access connection be provided between the adjacent property and gas station which would provide alternative ingress and egress options for vehicles accessing the gas station. It is anticipated that provision of alternative ingress and egress options would provide better circulation and thereby improve LOS operations at the intersection.

SHORT TERM NO PROJECT CONDITIONS

City/Caltrans Intersections

The following intersections under the jurisdiction of either the City or Caltrans were found to operate at an undesirable level of service under *Short Term No Project* conditions.

E. 20th Street/SR 99 Southbound Ramps – The signalized intersection would operate at unacceptable LOS "F" during the PM peak hour period under *Short Term No Project* conditions. The following improvements would need to be provided to yield acceptable operations at the intersection:

- Provide a westbound to southbound loop-on ramp. Note that this improvement is identified to be in place for year 2018 conditions within the Nexus study.

E. 20th Street/SR 99 Northbound Ramps – The signalized intersection would operate at unacceptable LOS "F" during the PM peak hour and unacceptable LOS "E" during the Saturday peak hour period under *Short Term No Project* conditions. The following improvements would need to be provided to yield acceptable operations at the intersection:

- Re-stripe the northbound approach to include one shared through-left lane and two exclusive right turn lanes
- Provide a channelized free right turn along the westbound approach. Note that this improvement is identified to be in place for year 2018 conditions within the Nexus study.

E. 20th Street/Chico Mall Access – The signalized intersection would operate at unacceptable LOS "F" during the PM and Saturday peak hour periods under *Short Term No Project* conditions. The improvement identified under *Existing* conditions (overlapping southbound right turn and restricting the eastbound to westbound U-turns) would not provide acceptable levels of service for Short Term conditions. The unacceptable LOS is a circulation issue, and as such, it is assumed that when excessive queues begin to develop resulting in poor levels of service that drivers (who are likely frequent visitors familiar with the site) would seek alternative ingress and egress routes.

The following measures which were recommended to mitigate poor operations at the intersection of Business Lane/Chico Mall Access would also improve the levels of service at this intersection:

- Development and implementation of a Traffic Management Plan which would potentially include (1) adjusting the shifts of employees to non-peak periods, (2) providing directional signage to shift traffic towards other access points, and (3) providing on-site personnel during peak holiday seasons to physically direct traffic.
- Ultimately, consider redesigning and improving the access and circulation to/from the Chico Mall and development along Business Lane.

A review of future daily volumes along the E. 20th Street Corridor indicates that the roadway will eventually exceed the capacity of a 4-lane arterial. Therefore, consideration should be given to eventually widening the roadway to a 6-lane facility to accommodate future growth. Based on a 10% daily to peak hour volume ratio (i.e., daily volume is ten (10) times the peak hour volume), it is projected that 20th Street would carry approximately 47,000 and 36,000 daily vehicles to the west and east of Chico Mall Access, respectively, under *Short Term No Project* conditions. Based on the existing capacity configuration (four-lane divided arterial with a center left-turn lane), it is projected that that the E. 20th Street segment to the west and east of Chico Mall Access would operate at unacceptable LOS "F" conditions. As development continues to occur within the City, it is suggested that the City monitor the daily volumes along the E. 20th Street segment and give consideration to widening the E. 20th Street corridor to accommodate six travel lanes. It should be noted however that widening of E. 20th Street to a 6-lane facility alone would not yield acceptable LOS conditions at the E. 20th Street/Chico Mall Access intersection. In addition to widening E. 20th Street to six lanes, exclusive right turn lanes along both the eastbound and westbound approaches would need to be provided to accommodate *Short Term No Project* traffic. However, given the existing physical constraints at the intersection, it is not known if any or all of these improvements are economically feasible. If any or all improvements are not economically feasible, the unacceptable LOS would be significant and unavoidable.

As will be noted later, the improvements identified above would not provide acceptable operations for year 2018 conditions.

E. 20th Street/Forest Avenue – The signalized intersection would operate at unacceptable LOS "F" during the PM and Saturday peak hour periods. In order to achieve acceptable levels of service at this intersection, the following improvements are suggested under *Short Term No Project* conditions*:*

- Provide an additional left-turn lane along the northbound Forest Avenue approach
- Provide an exclusive right-turn lane along the southbound Forest Avenue approach with overlap phasing for the right turn and restrict the eastbound to westbound U-turns along E. 20th Street.
- Provide a third through lane and an exclusive right-turn lane along the eastbound 20th Street approach. This improvement requires widening the downstream receiving lanes to accommodate the

third through lane.

- Provide a third westbound through lane along the 20th Street. This improvement requires widening the downstream receiving lanes to accommodate the third through lane.

With these improvements, acceptable LOS "D" would be achieved during the PM and Saturday peak hour periods under *Short Term No Project* conditions.

However, given the existing physical constraints at the intersection, it is not known if any or all of these improvements are economically feasible. If any or all improvements are not economically feasible, the unacceptable LOS would be significant and unavoidable.

As will be noted later, the improvements identified above would not provide acceptable operations for year 2018 conditions.

Forest Avenue/Wittmeier Drive – This unsignalized intersection would operate unacceptably at LOS "F" during the PM and Saturday peak hour periods under *Short Term No Project* conditions. The intersection would operate at unacceptable LOS until the signalization improvements associated with the proposed Wal-Mart expansion development are implemented. The intersection does not meet Caltrans peak hour volume signal warrant criteria for *Short Term No Project* conditions, and as no other improvements to the intersection would improve the levels of service, no improvements are recommended under *Short Term No Project* conditions at this intersection.

Skyway/Notre Dame Boulevard – The signalized intersection would operate at unacceptable LOS "E" during the PM peak period under *Short Term No Project* conditions. Provision of an additional (2nd) right-turn lane along the southbound Notre Dame Boulevard approach would provide acceptable LOS "D" operations at this intersection. As will be noted later, this improvement would not provide acceptable operations for year 2018 conditions.

However, given the existing physical constraints at the intersection, it is not known if this improvement is economically feasible. If the improvement is not economically feasible, the unacceptable LOS would be significant and unavoidable.

Private Intersections

The following private intersections (all of which are unsignalized) are projected to operate at a poor level of service under *Short Term No Project* conditions. Since there is no LOS threshold for private intersections, potential mitigation is described to address any potential vehicle conflict and safety issues.

Business Lane/Chico Mall Access – This unsignalized intersection is projected to operate at LOS "D" and LOS "F" during the PM and Saturday peak hour periods, respectively, based on the delay along the worst approach (westbound Chico Mall Access). The eastbound gas station driveway is also projected to operate at LOS "D" during the Saturday peak hour period. The high delays along the westbound and eastbound approaches is a circulation issue, and it is anticipated that drivers familiar with the area would seek alternative ingress and egress routes if undesirable queues are observed. Implementation of measures as described for *Existing* conditions are recommended to mitigate potential vehicle conflict and safety issues.

Baney Lane/Wal-Mart East Driveway – This unsignalized intersection would operate at LOS "F" during the PM and Saturday peak hour periods based on the delay along the worst approach (southbound driveway) under *Short Term No Project* conditions. Poor LOS and long queuing would be experienced only by southbound vehicles within the driveway exiting the gas station in the northwest quadrant of the Forest Avenue/Baney Lane intersection during the PM peak hour period. During the Saturday peak hour period, both the northbound and southbound approaches at the intersection would operate at poor LOS conditions.

The intersection does not meet Caltrans peak hour volume signal warrant criteria for *Short Term No Project* conditions, and as no other reasonable improvements to the intersection would improve the levels of service, no improvements to the intersection are recommended under *Short Term No Project* conditions at this intersection.

Per information provided by City staff, the vacant property adjacent to the gas station is planned to be developed as a retail development, and access to the adjacent development will almost certainly be provided to both Forest Avenue and Baney Lane. It is suggested that when developed that a cross access connection be provided between the adjacent property and gas station which would provide alternative ingress and egress options for vehicles accessing the gas station. It is anticipated that provision of alternative ingress and egress options would provide better circulation and thereby improve LOS operations at the intersection.

Business Lane/Baney Lane – This unsignalized intersection is projected to operate at LOS "D" during the Saturday peak hour period based on the delay along the westbound Baney Lane approach under *Short Term No Project* conditions.

The following measures which were recommended to mitigate poor operations at the intersection of Business Lane/Chico Mall Access would also improve the levels of service at this intersection:

- Development and implementation of a Traffic Management Plan which would potentially include (1) adjusting the shifts of employees to non-peak periods, (2) providing directional signage to shift traffic towards other access points, and (3) providing on-site personnel during peak holiday seasons to physically direct traffic.
- Ultimately, consider redesigning and improving the access and circulation to/from the Chico Mall and development along Business Lane.

Ramp Junctions

SR 99/20th Street Interchange – Northbound On-Ramp – The northbound on-ramp at the SR 99/20th Street interchange would operate at unacceptable LOS "F" during the PM peak hour under *Short Term No Project* conditions. The poor level of service is due to the high volume of traffic utilizing the on-ramp. Provision of the improvement described below would yield acceptable LOS for the on-ramp:

- Provide an eastbound to northbound loop-on ramp. Note that this improvement will be in place under year 2018 conditions. As such, it is recommended that City consider implementing this improvement for year 2010 conditions.

SR 99/20th Street Interchange – Southbound Off-Ramp – The southbound off-ramp at the SR 99/20th Street interchange would operate at unacceptable LOS "F" during the PM peak hour under *Short Term No Project* conditions. The poor level of service is due to the high volume of traffic utilizing the off-ramp to access Chico Mall and other retail land uses along 20th Street. Provision of a 2-lane southbound off-ramp (two lanes exiting off the freeway) would yield acceptable operations at the southbound SR 99 off-ramp diverge junction to 20th Street.

SHORT TERM PLUS PROJECT CONDITIONS

City/Caltrans Intersections

The following intersections under the jurisdiction of either the City or Caltrans were found to operate at an undesirable level of service under *Short Term Plus Project* conditions.

- E. 20th Street/SR 99 SB Ramps

- E. 20th Street/SR 99 NB Ramps
- E. 20th Street/Chico Mall Access
- E. 20th Street/Forest Avenue
- Skyway/Notre Dame Boulevard

All discussions on base improvements provided under *Short Term No Project* are applicable to *Short Term Plus Project* conditions:

Private Intersections

The following private intersections (all of which are unsignalized) are projected to operate at a poor level of service under *Short Term Plus Project* conditions. Since there is no LOS threshold for private intersections, potential mitigation is described to address any potential vehicle conflict and safety issues.

- Business Lane/Chico Mall Access
- Baney Lane/Wal-Mart East Driveway
- Business Lane/Baney Lane

All discussions on base improvements provided under *Short Term No Project* are applicable to *Short Term Plus Project* conditions with the following exceptions:

Baney Lane/Wal-Mart East Driveway – This unsignalized intersection would operate at LOS "F" during the PM and Saturday peak hour periods based on the delay along the worst approach (southbound driveway) under *Short Term Plus Project* conditions. Poor LOS and long queuing would be experienced only by southbound vehicles within the driveway exiting the gas station in the northwest quadrant of the Forest Avenue/Baney Lane intersection. Although restricting the outbound left-turns along the southbound approach would improve levels of service, City staff has indicated that this improvement would not be feasible.

The intersection would meet Caltrans peak hour signal warrant criteria during the Saturday peak hour period. However, it is recognized that this location is undesirable for a signal since it is only ±350 ft. from the Forest Avenue/Baney Lane traffic signal. Per information provided by City staff, the vacant property adjacent to the gas station is planned to be developed as a retail development, and access to the adjacent development will almost certainly be provided to both Forest Avenue and Baney Lane. It is suggested that when developed that a cross access connection be provided between the adjacent property and gas station which would provide alternative ingress and egress options for vehicles accessing the gas station. It is anticipated that provision of alternative ingress and egress options would provide better circulation and thereby improve LOS operations at the intersection.

Ramp Junctions

The following ramp junctions were found to operate at an undesirable level of service under *Short Term Plus Project* conditions.

- SR 99/20th Street Interchange – Southbound Off-Ramp
- SR 99/20th Street Interchange – Northbound On-Ramp

All discussions on base improvements provided under *Short Term No Project* are applicable to *Short Term Plus Project* conditions.

CUMULATIVE NO PROJECT CONDITIONS

City/Caltrans Intersections

The following intersections under the jurisdiction of either the City or Caltrans were found to operate at an undesirable level of service under *Cumulative No Project* conditions.

E. 20th Street/Whitman Avenue – The signalized intersection would operate at unacceptable LOS "F" during the Saturday peak hour period under *Cumulative No Project* conditions. Provision of an additional (2nd) northbound right-turn lane would yield acceptable LOS "D" operations at the intersection.

E. 20th Street/SR 99 Northbound Ramps – The signalized intersection would operate at unacceptable LOS "F" during the PM peak hour period, and unacceptable LOS "E" during the Saturday peak hour period, under *Cumulative No Project* conditions. The improvement identified under *Short Term No Project* conditions re-striping the northbound approach to include one shared through-left lane and two exclusive right turn lanes would provide acceptable LOS conditions at the intersection.

E. 20th Street/Chico Mall Access – The signalized intersection would operate at unacceptable LOS "F" during the PM and Saturday peak hour periods under *Cumulative No Project* conditions. The unacceptable LOS is a circulation issue, and it is assumed that when excessive queues begin to develop resulting in poor levels of service that drivers (who are likely frequent visitors familiar with the site) would seek alternative ingress and egress routes. Mitigation measures recommended previously to mitigate poor operations at the intersection of Business Lane/Chico Mall Access (and described for the E. 20th Street/Chico Mall Access intersection for *Short Term No Project* conditions) would also improve the levels of service at this intersection.

With respect to other improvements identified under Short Term conditions, it should be noted that even with the widening of E. 20th Street to a 6-lane facility and provision of exclusive right turn lanes on E. 20th Street, the E. 20th Street/Chico Mall Access intersection would still operate at unacceptable LOS for *Cumulative No Project* conditions. In order to provide acceptable operations at the intersection the following improvements would need to be provided in addition the improvements identified under Short Term conditions:

- the northbound approach would need to be widened to accommodate dual left turn lanes and a shared through right lane
- the southbound approach would need to be widened to provide one left turn lane and one through lane exclusive

However, given the existing physical constraints at the intersection, it is not known if this improvement is economically feasible. If the improvement is not economically feasible, the unacceptable LOS would be significant and unavoidable.

E. 20th Street/Forest Avenue – The signalized intersection would operate at unacceptable LOS "F" during the PM and Saturday peak hour periods under *Cumulative No Project* conditions. Provision of an additional (second) eastbound left turn along E. 20th Street in addition to the improvements suggested under *Short Term No Project* conditions would yield acceptable operations under *Cumulative No Project* conditions.

However, given the existing physical constraints at the intersection, it is not known if any or all of these improvements are economically feasible, in particular the provision of an additional eastbound left-turn lane and exclusive eastbound right-turn lane along the eastbound 20th Street approach. If any or all improvements are not economically feasible, the unacceptable LOS would be significant and unavoidable.

As will be noted later, the improvements identified above would not provide acceptable operations for year 2018 conditions.

A review of future daily volumes along the E. 20th Street Corridor indicates that the roadway will eventually exceed the capacity of a 4-lane arterial. Therefore, consideration should be given to eventually widening the roadway to a 6-lane facility to accommodate future growth. Based on a 10% daily to peak hour volume ratio (i.e., daily volume is 10 times the peak hour volume), it is projected that 20th Street would carry approximately 42,000 and 31,000 daily vehicles to the west and east of Forest, respectively under *Cumulative No Project* conditions. Based on the existing capacity configuration (four-lane divided arterial with a center left-turn lane), it is projected that the E. 20th Street segment to the west and east of Forest Avenue would operate at unacceptable LOS "F" and acceptable LOS "E" conditions, respectively. As development continues to occur within the City, it is suggested that City monitor the daily volumes along the E. 20th Street segment and give consideration to widening the E. 20th Street corridor to accommodate six travel lanes.

Forest Avenue/Wittmeier Drive – This unsignalized intersection would operate unacceptably at LOS "F" during the PM and Saturday peak hour periods under *Cumulative No Project* conditions. The intersection does meet Caltrans peak hour volume signal warrant criteria for *Cumulative No Project* conditions. As such, the intersection would operate at unacceptable LOS until the signalization improvements associated with the proposed Wal-Mart expansion development will be implemented. Upon implementation of signalization improvements, the intersection would operate at acceptable LOS "C" for all time periods analyzed within the study under *Cumulative No Project* conditions.

Skyway/Notre Dame Boulevard – The signalized intersection would operate at unacceptable LOS "F" and LOS "E" during the PM and Saturday peak hour periods, respectively, under *Cumulative No Project* conditions. Implementation of improvements recommended under *Short Term No Project* conditions, including provision of an additional (2nd) right-turn lane along the southbound Notre Dame Boulevard approach, would provide LOS "F" and LOS "E" operations during the PM and Saturday peak hour periods respectively. The following improvements, if implemented, would yield acceptable LOS "D" or better conditions during all peak periods at the intersection:

- Convert the existing 2nd left-turn lane (inner left-turn lane) to a shared left-through-right lane in the northbound Notre Dame Boulevard approach
- Convert the existing through lane in the southbound direction to a shared through left lane and provide split phasing in the north-south approaches
- Re-stripe the westbound right-turn lane to include a shared through-right lane and widen the downstream approach such that the third outside through lane continues on as a right-turn only lane to the northbound SR 99 on-ramp.

However, given the existing physical constraints at the intersection, it is not known if these improvements are economically feasible. If the improvements are not economically feasible, the unacceptable LOS would be significant and unavoidable.

Private Intersections

The following private intersections (all of which are unsignalized) are projected to operate at a poor level of service under *Cumulative No Project* conditions. Since there is no LOS threshold for private intersections, potential mitigation is described to address any potential vehicle conflict and safety issues.

Business Lane/Chico Mall Access – This unsignalized intersection is projected to operate at LOS "E" and LOS "F" during the PM and Saturday peak hour periods, respectively, based on the delay along the worst approach (westbound Chico Mall Access). The eastbound gas station driveway is also projected to operate at LOS "D" during the Saturday peak hour period. The high delays along the westbound and eastbound approaches is a circulation issue, and it is anticipated that drivers familiar with the area would seek alternative ingress and egress routes if undesirable queues are observed. Implementation of measures as described for

Existing conditions are recommended to mitigate potential vehicle conflict and safety issues.

Business Lane/Baney Lane – This unsignalized intersection is projected to operate at LOS "F" during the Saturday peak hour period based on the delay along the westbound Baney Lane approach under *Cumulative No Project* conditions. This intersection would meet Caltrans peak hour warrant criteria during the Saturday peak hour. Signalization of the intersection would provide LOS "C" operations at the intersection. Mitigation measures recommended previously to mitigate poor operations at the intersection of Business Lane/Chico Mall Access (and described for the Business Lane/Baney Lane intersection for *Short Term No Project* conditions) would also improve the levels of service at this intersection.

Baney Lane/Wal-Mart East Driveway – This unsignalized intersection would operate at LOS "F" during the PM and Saturday peak hour periods based on the delay along the worst approach (southbound driveway) under *Cumulative No Project* conditions. The northbound Wal-Mart Access approach would operate at LOS "D" during both the PM and Saturday peak hour periods based on the delay experienced by the outbound left-turn vehicles. Note that with the proposed expansion the outbound left-turn movement would be prohibited and as a result would yield improved operations along the northbound approach at the intersection.

The intersection would meet Caltrans peak hour warrant criteria during the Saturday peak hour period. However, it is recognized that this location is undesirable for a signal since it is only ±350 ft. from the Forest Avenue/Baney Lane traffic signal. Per information provided by City staff, the vacant property adjacent to the gas station is planned to be developed as a retail development, and access to the adjacent development will almost certainly be provided to both Forest Avenue and Baney Lane. It is suggested that when developed that a cross access connection be provided between the adjacent property and gas station which would provide alternative ingress and egress options for vehicles accessing the gas station. It is anticipated that provision of alternative ingress and egress options would provide better circulation and thereby improve LOS operations at the intersection.

Ramp Junctions

SR 99/20th Street Interchange – Southbound Off-Ramp – The southbound off-ramp at the SR 99/20th Street interchange would operate at unacceptable LOS "F" during the PM and Saturday peak hour periods under *Cumulative No Project* conditions. The poor level of service is due to the high volume of traffic utilizing the off-ramp to access Chico Mall and other retail land uses along 20th Street. Implementation of improvements recommended under *Short Term No Project* conditions, including provision of a 2-lane southbound off-ramp (with two lanes exiting the freeway), would yield acceptable operations at the southbound SR 99 off-ramp diverge junction to 20th Street.

SR 99/SR 32 Interchange – Northbound Off-Ramp – The northbound off-ramp at the SR 99/SR 32 interchange would operate at unacceptable LOS "F" during the PM peak hour period under *Cumulative No Project* conditions. Provision of an either a two lane ramp (two lanes exiting the freeway) or an additional through lane on the mainline, would yield acceptable operations at the northbound SR 99 off-ramp diverge junction to 20th Street.

Weave Segments

Northbound SR 99 between Skyway and 20th Street interchanges – The weave segment along northbound SR 99 between the Skyway and 20th Street interchanges is projected to operate at unacceptable LOS "F" during the PM peak hour period. Provision of an additional northbound through lane (resulting in four lanes including the auxiliary lane) would provide acceptable operations along the segment. However, it is not known if the widening of SR 99 to provide three (3) northbound through lanes in addition to the existing two (2) northbound through lanes (and the future auxiliary lane) is economically feasible. If this improvement is not economically feasible, the unacceptable LOS would be significant and unavoidable.

CUMULATIVE PLUS PROJECT CONDITIONS

City/Caltrans Intersections

The following intersections under the jurisdiction of either the City or Caltrans were found to operate at an undesirable level of service under *Cumulative Plus Project* conditions.

- E. 20th Street/Whitman Avenue
- E. 20th Street/SR 99 NB Ramps
- E. 20th Street/Chico Mall Access
- E. 20th Street/Forest Avenue
- Skyway/Notre Dame Boulevard

All discussions on base improvements provided under *Cumulative No Project* are applicable to *Cumulative Plus Project* conditions with the following exceptions:

E. 20th Street/Forest Avenue – Implementation of improvements identified under *Cumulative No Project* conditions would yield acceptable LOS "D" and unacceptable LOS "E" conditions for the PM and Saturday peak hour conditions, respectively. To provide acceptable LOS "D" conditions for the Saturday peak hour period, it is further recommended that an additional (third) left turn lane in the northbound direction would need to be provided.

However, given the existing physical constraints at the intersection, it is not known if any or all of these improvements are economically feasible, in particular the provision of an additional eastbound left-turn lane and exclusive eastbound right-turn lane along the eastbound 20th Street approach. If any or all improvements are not economically feasible, the unacceptable LOS would be significant and unavoidable.

Skyway/Notre Dame Boulevard – The signalized intersection would operate at unacceptable LOS "F" and LOS "E" during the PM and Saturday peak hour periods, respectively, under *Cumulative Plus Project* conditions. Implementation of improvements recommended under *Cumulative No Project* conditions, would provide LOS "E" and LOS "D" operations during the PM and Saturday peak hour periods, respectively. In order to achieve acceptable LOS "D" conditions during the PM peak hour period, it is further recommended that the westbound approach be widened to accommodate one left-turn lane, three through lanes and one exclusive right-turn lane. As discussed for *Cumulative No Project* conditions, the third outside through lane could continue on as a right-turn only lane to the northbound SR 99 on-ramp.

However, given the existing physical constraints at the intersection, it is not known if these improvements are economically feasible. If the improvements are not economically feasible, the unacceptable LOS would be significant and unavoidable.

Private Intersections

The following private intersections (all of which are unsignalized) are projected to operate at a poor level of service under *Cumulative Plus Project* conditions. Since there is no LOS threshold for private intersections, potential mitigation is described to address any potential vehicle conflict and safety issues.

- Business Lane/Chico Mall Access
- Baney Lane/Wal-Mart East Driveway
- Business Lane/Baney Lane

All discussions on base improvements provided under *Cumulative No Project* are applicable to *Cumulative Plus Project* conditions:

Ramp Junctions

The following ramp junctions were found to operate at an undesirable level of service under *Cumulative Plus Project* conditions.

- SR 99/20th Street Interchange – Southbound Off-Ramp
- SR 99/SR 32 Interchange – Northbound Off-Ramp

All discussions on base improvements provided under *Cumulative No Project* are applicable to *Cumulative Plus Project* conditions.

Weave Segments

The weave segment along northbound SR 99 between the Skyway and 20th Street interchanges, which was projected to operate at unacceptable LOS under *Cumulative No Project* conditions, is projected to continue operating at unacceptable LOS with the addition of project traffic. All discussions on base improvements provided under *Cumulative No Project* are applicable to *Cumulative Plus Project* conditions. This improvement consisted of provision of an additional northbound through lane (resulting in four lanes including the auxiliary lane). As noted previously, it is not known if the widening of SR 99 to provide three (3) northbound through lanes in addition to the existing two (2) northbound through lanes (and the future auxiliary lane) is economically feasible. If this improvement is not economically feasible, the unacceptable LOS would be significant and unavoidable.

95TH PERCENTILE QUEUE LENGTHS

As noted earlier, the main access points to the proposed project site would be via the signalized intersection of Forest Avenue/Baney Lane, and the intersection of Forest Avenue/Wittmeier Drive, which will be signalized as part of the proposed project. At the request of City staff, a 95th percentile queuing analysis has been performed at these two intersections to determine the adequacy of turning lane storage bays. **Table 22** presents the projected 95th percentile queue determined using TRAFFIX software for *Cumulative No Project* and *Cumulative Plus Project* conditions. The queuing analysis assumes that each vehicle within a queue requires 25 ft. per vehicle (which includes the length of the vehicle itself and spacing between the next vehicle). Therefore, all queuing results are converted to vehicle stacking requirements in multiples of 25 ft. Note that the available storage lengths shown in the Table below were measured from aerial photographs.

TABLE 22
CUMULATIVE (2018) CONDITIONS QUEUING ANALYSIS

Intersection	Movement	Available Storage length (ft)	2018 No Project			2018 Plus Project		
			AM	PM	SAT	AM	PM	SAT
Forest Ave/ Baney Lane	NBL	210	145	235	410	160	280	500
	SBL	208	95	115	55	105	155	80
	SBR	220	70	285	405	100	395	560
	EBL	156	75	320	290	115	425	380
	WBL	128	60	45	65	80	70	115
Forest Ave/ Talbert Whittmeier Drive	NBL	155	Not Applicable			265	285	370
	SBL	100				135	190	140
	EBL	144				185	285	375
	WBL	127				40	70	75

As shown in the above table, the projected 95th percentile queues for a majority of the turning movements exceed the available storage lengths.

Forest Avenue/Baney Lane Intersection - It is noted that the left turn lanes along the northbound and eastbound approaches, as well as the right turn lane along the southbound approach, would not accommodate 2018 queues both with and without the proposed project. It is thus recommended that the intersection be improved to lengthen these turning lanes to accommodate the 2018 Plus Project queues, and that the project provide a fair share contribution towards those improvements.

Forest Avenue/Talbert-Whittmeier Drive Intersection - It is noted that the existing left turn lanes along the northbound, southbound, and westbound approaches would not accommodate 2018 queues with the proposed project. Thus, it is recommended that the signalization and improvements proposed as part of the project also provide for the lengthening of these left turn pockets to accommodate the 2018 Plus Project queue.

However, given the existing physical constraints at these intersections, it is not known if these improvements are economically feasible. If the improvements are not economically feasible, the inadequacy of the turning lane storage capacity would be significant and unavoidable.

PROJECT SITE ACCESS

The project would utilize all of the existing driveways on Baney Lane, Business Lane and Forest Avenue, as well as two new additional driveways to the south onto Wittmeier Drive as part of the expansion. At present, all of the access points are full access intersections permitting left-turns in and out of the project site, with the exception of the right-in/right-out driveway along Forest Avenue. The main project access to the existing Wal-Mart store is currently provided via the signalized intersection of Forest Avenue/Baney Lane, with traffic traveling to/from the existing Wal-Mart driveways via Baney Lane.

To reduce project traffic along Business Lane, the project site plan proposes that driveways along Baney Lane be reconstructed with right-turn channelization to prohibit outbound left-turns and force outbound traffic towards Forest Avenue. Given this, the only possible route that would be available for the outbound Wal-Mart customers/employees who would like to access development along Business Lane would be a circuitous route via Forest Avenue, E 20th Street and Chico Mall access. As described previously, the provision of channelization at the Baney Lane/Wal-Mart West Driveway to prohibit outbound left turns is assumed within the traffic analysis to correspond with the proposed project site plan. However, following discussions with City of Chico staff, it is recommended that outbound left turns be permitted at this driveway to provide a limited opportunity for vehicles departing from the Wal-Mart site to access developments along Business Lane. A review of the proposed project site plan shows that there is adequate internal circulation to allow vehicles to access the westernmost driveway from the main parking lot. Given that this driveway is located away from the main parking area, and thus experiences minimal traffic volumes, the net effect is that while some opportunity is provided to make an outbound left turn toward Business Lane, the actual number of left turns will be minimal and negligible.

Due to the potential sight distance issues for the outbound left turn vehicles with the westbound Baney Lane traffic at the Baney Lane/Wal-Mart Central Driveway, and the close intersection spacing between the Baney Lane/Wal-Mart East Driveway and Forest Avenue/Baney Lane intersection, it is recommended that the outbound left turns be physically prohibited through construction of channelizations as shown in the site plan at these two driveways.

It is recommended that vehicular movements along the back alley to/from the Baney Lane/Business Lane intersection be restricted to southbound through movements (which was assumed as part of the traffic analysis). To accommodate this restriction, it is recommended that a sign be placed near the south end of the alley stating "WAL-MART TRUCK TRAFFIC ONLY – NO THROUGH VEHICLES". Whereas traffic

from the existing Wal-Mart store can currently exit out via the back alley and Business Lane, implementation of this recommendation would result in the prohibition of northbound movements along the back alley continuing on to Business Lane.

Access to the out parcel is assumed to be via an additional right-in/right-out only driveway along Forest Lane, a driveway along Wittmeier Drive (planned as part of the Wal-Mart expansion), and additional cross access locations to/from the Wal-Mart parking lot.

No additional recommendations are suggested.

PROJECT ON-SITE CIRCULATION

As the site plan shows, a major component of the on-site circulation system consists of one-way drive aisles located to the east of the proposed store striped for diagonal parking.

As noted within the Project Site Access section, Business Lane and Wittmeier Drive will provide access to the truck docking facilities located along the rear of the store. The primary truck route for the store is via the Baney Lane/Business Lane intersection with trucks continuing south along the back alley to access the truck bays located near the southwestern portion of the store. When departing from the store, it is assumed the trucks will exit primarily via Wittmeier Drive, although departure would be possible via the alley.

The overall layout of the site provides satisfactory vehicle circulation throughout the project site. The project site plan also provides for a pedestrian system of sidewalks and crosswalks which will channel pedestrians arriving from the new sidewalk/crosswalk system along Forest Avenue to the new store.

No additional recommendations are suggested.

PROJECT TRUCK TRAFFIC

The existing Wal-Mart store currently averages 61 deliveries per week, 31 of which are large 18-wheelers. It is anticipated that the proposed Wal-Mart Supercenter will have an average of 85 deliveries per week, 24 more than the existing store. Of these, it is anticipated that 39 will be large 18-wheelers, which is 8 more than the existing store. As described above, a review of the project site plan shows that the overall layout of the site provides satisfactory truck access and circulation throughout the majority of the site. The existing truck route/fire lane behind the existing store would remain, but it would be extended. A truck turnaround approximately 130 feet in diameter would be designated at the end of the truck route extension, in the southwestern portion of the project site.

No additional recommendations are suggested.

PROJECT ROADWAY IMPROVEMENTS

The project circulation improvements that will be constructed before the opening of the expanded Wal-Mart Superstore include the following:

The intersection of Forest Avenue/Wittmeier Drive will be redesigned to accommodate a traffic signal and additional turn lanes. As noted within the 95th Percentile Queue Lengths section above, it is also recommended that existing turning lanes be lengthened to accommodate longer future queues. It is also recommended that push buttons be provided to facilitate pedestrian access to/from the site at the intersection.

Baney Lane

The existing striping on Baney Lane as it approaches Forest Avenue appears to be faded. Therefore, it is recommended that the striping be enhanced on Baney Lane as part of the expansion. Although Baney Lane is a private street, the road operates as a minor arterial (and will continue to operate as such both with and without the project). Thus it is recommended that the roadway ultimately be improved to City standards.

FAIR-SHARE OF IMPROVEMENT COST CALCULATIONS

To provide for a conservative analysis, fair-share of improvement cost percentages have been calculated based upon the proposed project's PM peak hour traffic impacts under Cumulative (2018) conditions. Fair-share calculations have been identified for all intersections which are projected to operate at unacceptable LOS under no project conditions, and experience an increase in delay with the addition of project traffic. Below is a listing of each of the study intersections warranting improvements, the corresponding improvements that the proposed project would be required to pay a fair-share of improvement cost towards, and the proposed project's equitable share of these improvements. The proposed project's equitable share is calculated using the method for calculating equitable mitigation measures outlined in the *Caltrans Guide for the Preparation of Traffic Impact Studies* (State of California, DOT, June 2001), which is shown below:

$P = T/(T_B - T_E)$ where,

- P = The equitable share for the project's traffic impact (Wal-Mart only)
- T = The vehicle trips generated by the project during the peak hour of adjacent State highway facility in vehicles per hour (vph).
- T_B = The forecasted traffic volume on an impacted State highway facility at the time of general plan build-out (e.g. 20 year model or the furthest future model date feasible), vph.
- T_E = The traffic volume existing on the impacted State highway facility plus other approved projects that will generate traffic that has yet to be constructed/opened, vph.

Additionally, per City of Chico's request, fair share calculations have also been provided for Short Term impacts. The methodology utilized in calculating the fair share cost for Short Term improvements is as follows:

$P_{ST} = T/(T_{STPP} - T_{EX})$ where,

- P_{ST} = The Short Term equitable share for the project's traffic impact (Wal-Mart only)
- T = The vehicle trips generated by the project during the peak hour of adjacent State highway facility in vehicles per hour (vph).
- T_{STPP} = The traffic volume on an impacted State highway facility for Year 2010 conditions including project traffic in vph.
- T_{EX} = The traffic volume currently existing on the impacted State highway facility, vph.

Note that the percent fair-share calculated using the above formula is reported to the nearest whole number.

Also note that some of the improvements/mitigations recommended for Short Term conditions had been identified by the Nexus Study as being in place for Cumulative (year 2018) conditions. As such, Cumulative conditions analysis has been evaluated assuming these improvements to be in place.

Intersection: E. 20th Street / Whitman Avenue

Short Term Plus Project conditions – Intersection is projected to operate acceptably for all of the study peak hour periods analyzed.

Cumulative Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement:

- Add a second northbound right-turn lane

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 29/(4,795-3,917) = **4%**

Intersection: E. 20th Street / NB SR 99 Ramps

Short Term Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Re-stripe the northbound approach to include one shared through-left lane and two exclusive right turn lanes.
- Provide a channelized free right turn along the westbound approach. Note that this improvement is identified to be in place for year 2018 conditions within the Nexus study.

The project's equitable share responsibility for the cost of improvements at this intersection for Short Term conditions is = 77/(6,006 -4,494) = **5%**

Cumulative Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Re-stripe the northbound approach to include one shared through-left lane and two exclusive right turn lanes. Note that this improvement/mitigation is same as the one identified for Short Term conditions.

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 77/(7,624 -5,879) = **5%**

Intersection: E. 20th Street / SB SR 99 Ramps

Short Term Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Provide a westbound to southbound loop-on ramp. Note that this improvement is identified to be in place for year 2018 conditions within the Nexus study.

The project's equitable share responsibility for the cost of improvements at this intersection for Short Term conditions is = 49/(5,092 -3,920) = **5%**

Cumulative Plus Project conditions – Intersection is projected to operate acceptably for all of the study peak hour periods analyzed.

Intersection: E. 20th Street / Chico Mall Access

Short Term Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Traffic Management Plan

The project's equitable share responsibility for the cost of improvements at this intersection for Short Term conditions is = 52/(5,315-3,811) = **4%**

Cumulative Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Traffic Management Plan. Note that this improvement/mitigation is same as the one identified for Short Term conditions.

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 52/(6,964 -5,219) = **3%**

Intersection: E. 20th Street / Forest Avenue

Short Term Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Provide an additional left-turn lane along the northbound Forest Avenue approach
- Provide an exclusive right-turn lane along the southbound Forest Avenue approach with overlap phasing for the right turn and restrict the eastbound to westbound U-turns along E. 20th Street.
- Provide a third through lane and an exclusive right-turn lane along the eastbound 20th Street approach. This improvement requires widening the downstream receiving lanes to accommodate the third through lane.
- Provide a third westbound through lane along the 20th Street. This improvement requires widening the downstream receiving lanes to accommodate the third through lane.

The project's equitable share responsibility for the cost of improvements at this intersection for Short Term conditions is = 77/(4,652-2,953) = **5%**

Cumulative Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Provide an additional left-turn lane along the northbound Forest Avenue approach
- Provide an exclusive right-turn lane along the southbound Forest Avenue approach with overlap phasing for the right turn and restrict the eastbound to westbound U-turns along E. 20th Street.
- Provide a third through lane and an exclusive right-turn lane along the eastbound 20th Street approach. This improvement requires widening the downstream receiving lanes to accommodate the

third through lane.
- Provide a third westbound through lane along the 20th Street. This improvement requires widening the downstream receiving lanes to accommodate the third through lane.

Note that improvement(s)/mitigation(s) identified above are same as those identified for Short Term conditions.

Additionally, the following improvement/mitigation measure would be required to provide acceptable operations:

- Provide an additional (second) eastbound left turn along E. 20th Street
- Provide a third northbound left-turn lane along the northbound Forest Avenue approach (100% calculated responsibility)

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements (a second eastbound left turn along E. 20th Street) at this intersection is = 77/(6,000 -4,326) = **5%**

Intersection: Business Lane / Baney Lane

Short Term Plus Project conditions – Intersection would operate at LOS "D" at least during one peak hour period.

Improvements:

- Development and implementation of a Traffic Management Plan

The project's equitable share responsibility for the cost of improvements at this intersection is = 25/(680 -557) **20%**

Cumulative Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvements:

- Signalization of the intersection.
  - OR -
- Development and implementation of a Traffic Management Plan

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 25/(789 -655) = **19%**

Intersection: Skyway / Notre Dame Boulevard

Short Term Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Provide an additional (2nd) right-turn lane along the southbound Notre Dame Boulevard.

The project's equitable share responsibility for the cost of improvements at this intersection for Short Term conditions is = 58/(5,247-4,550) = **9%**

Cumulative Plus Project conditions – Intersection would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Provide an additional (2nd) right-turn lane along the southbound Notre Dame Boulevard approach. Note that this improvement/mitigation is same as the one identified for Short Term conditions.

Additionally, the following improvement/mitigation measure would be required to provide acceptable operations:

- Convert the existing 2nd left-turn lane (inner left-turn lane) to a shared through-left-right lane in the northbound Notre Dame Boulevard approach
- Convert the existing through lane in the southbound direction to a shared through-left lane and provide split phasing in the north-south approaches
- Re-stripe the westbound right-turn lane to include a shared through-right lane and widen the downstream approach such that the third outside through lane continues on as a right-turn only lane to the northbound SR 99 on-ramp.
- Provide an exclusive right lane along the westbound approach and re-stripe the westbound shared through-right lane recommended under *Cumulative No Project* conditions to a through lane. (100% calculated responsibility)

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 58/(5,995 -5,107) = **7%**

95th percentile queue lengths: Baney Lane / Forest Avenue

Fair-Share calculation is applicable for both Short Term and Cumulative conditions.

Improvements:

- Lengthen the existing turn lanes to accommodate the projected 95th percentile queue lengths

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 153/(2,893 -2,158) = **21%**

Ramp Junction: SR 99 Northbound On Ramp / E. 20th Street

Short Term Plus Project conditions – Ramp junction would operate at unacceptable LOS "F" at least during one peak hour period.

Improvement(s):

- Provide an eastbound to northbound loop-on ramp. Note that this improvement will be in place under year 2018 conditions.

The project's equitable share responsibility for the cost of improvements at this intersection for Short Term conditions is = 28/(1,579 - 1,376) = **14%**

Cumulative Plus Project conditions – Ramp junction would operate at acceptable LOS "D" or better during all of the peak hour periods analyzed.

Ramp Junction: SR 99 Southbound Off Ramp / E. 20th Street

Short Term Plus Project conditions – Ramp junction would operate at unacceptable LOS "F" at least during one peak hour period.

Improvements:

- Provide a 2-lane off-ramp

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 21/(1,818 -1,561) = **9%**

Cumulative Plus Project conditions – Ramp junction would operate at unacceptable LOS "F" at least during one peak hour period.

Improvements:

- Provide a 2-lane off-ramp. Note that this improvement/mitigation is same as the one identified for Short Term conditions.

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 21/(2,185 -1,780) = **6%**

Ramp Junction: SR 99 / SR 32 Northbound Off Ramp

Short Term Plus Project conditions – Ramp junction would operate at unacceptable LOS "F" at least during one peak hour period.

Improvements:

- Provision of an additional through (third) lane on the mainline. Note that this improvement will be in place under year 2018 conditions.

The project's equitable share responsibility for the cost of improvements at this intersection is = 33/(3,964 - 3,362) = **6%**

Cumulative Plus Project conditions – Ramp junction would operate at unacceptable LOS "F" at least during one peak hour period.

Improvements:

- Provision of either a two lane ramp (two lanes exiting the freeway) or an additional through (fourth) lane on the mainline

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 33/(4,914 -3,927) = **4%**

Weave Segment: between Skyway and 20th Street interchanges (northbound direction)

Short Term Plus Project conditions – Not applicable for this scenario as the auxiliary lane would be in place only for Cumulative conditions.

Cumulative Plus Project conditions – Weave segment would operate at unacceptable LOS "F" at least during one peak hour period.

Improvements:

- Provision of an additional through lane on the mainline

Based on the Caltrans methodology, the project's equitable share responsibility for the cost of improvements at this intersection is = 33/(4,914 -3,927) = **4%**

APPENDIX

Intersection Level-Of-Service Worksheets
SR 99 Freeway Mainline Analysis
SR 99 Ramps Analysis
Traffic Signal Warrant Worksheets

APPENDIX

INTERSECTION LEVEL OF SERVICE WORKSHEETS

SR 99 FREEWAY MAINLINE ANALYSES

SR 99 RAMPS ANALYSIS

TRAFFIC SIGNAL WARRANT WORKSHEETS

LOS Worksheets

Existing AM

Existing PM

Existing SAT

Short Term No Project AM

Short Term No Project PM

Short Term No Project SAT

Short Term Plus Project AM

Short Term Plus Project PM

Short Term Plus Project SAT

Cumulative No Project AM

Cumulative No Project PM

Cumulative No Project SAT

Cumulative Plus Project AM

Cumulative Plus Project PM

Cumulative Plus Project SAT

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--------------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                       Existing AM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
               2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1 E. 20th Street / Whitman Road
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap. (X):        0.254
Loss Time (sec):      16 (Y+R =  4 sec) Average Delay (sec/veh):        18.1
Optimal Cycle:        36                 Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:            Ovl             Include           Ovl             Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  2  0  1   2  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      49     5    52    32     7    21    20   316    78   107   439    49
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   49     5    52    32     7    21    20   316    78   107   439    49
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    54     6    58    36     8    23    22   351    87   119   488    54
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   54     6    58    36     8    23    22   351    87   119   488    54
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    54     6    58    36     8    23    22   351    87   119   488    54
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  1.00  0.85  0.95  0.89  0.89  0.95  0.95  0.85  0.92  0.94  0.94
Lanes:       1.00  1.00  1.00  1.00  0.25  0.75  1.00  2.00  1.00  2.00  1.80  0.20
Final Sat.:  1805  1900  1615  1805   422  1265  1805  3610  1615  3502  3199   357
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03  0.00  0.04  0.02  0.02  0.02  0.01  0.10  0.05  0.03  0.15  0.15
Crit Moves:  ****                    ****        ****                    ****
Green/Cycle: 0.12  0.02  0.19  0.17  0.07  0.07  0.05  0.48  0.60  0.17  0.60  0.60
Volume/Cap:  0.25  0.12  0.19  0.12  0.25  0.25  0.25  0.20  0.09  0.20  0.25  0.25
Delay/Veh:   40.7  48.8  34.1  35.6  44.9  44.9  47.4  15.0   8.5  36.0   9.5   9.5
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  40.7  48.8  34.1  35.6  44.9  44.9  47.4  15.0   8.5  36.0   9.5   9.5
HCM2kAvg:       2     0     2     1     1     1     1     3     1     2     4     4
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AM PEAK HOUR            Wed Feb 8, 2006 19:31:14                 Page 5-1
--------------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                       Existing AM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
               2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #2 E. 20th Street / SB Sr-99 Ramps
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap. (X):        0.386
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):        22.4
Optimal Cycle:        35                 Level Of Service:                 C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Ignore           Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        0  0  0  0  0   1  1  0  0  2   0  0  2  0  1   2  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0   590     0   150     0   360    40   150   445     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     0   590     0   150     0   360    40   150   445     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.00  0.90  0.90  0.90
PHF Volume:     0     0     0   656     0   167     0   400     0   167   494     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0   656     0   167     0   400     0   167   494     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
Final Vol.:     0     0     0   656     0   167     0   400     0   167   494     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.95  1.00  0.75  1.00  0.95  1.00  0.92  0.95  1.00
Lanes:       0.00  0.00  0.00  2.00  0.00  2.00  0.00  2.00  1.00  2.00  2.00  0.00
Final Sat.:     0     0     0  3618     0  2842     0  3610  1900  3502  3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.18  0.00  0.06  0.00  0.11  0.00  0.05  0.14  0.00
Crit Moves:                    ****                    ****        ****
Green/Cycle: 0.00  0.00  0.00  0.47  0.00  0.47  0.00  0.29  0.00  0.12  0.41  0.00
Volume/Cap:  0.00  0.00  0.00  0.39  0.00  0.12  0.00  0.39  0.00  0.39  0.33  0.00
Delay/Veh:    0.0   0.0   0.0  17.3   0.0  15.0   0.0  28.8   0.0  40.9  20.3   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  17.3   0.0  15.0   0.0  28.8   0.0  40.9  20.3   0.0
HCM2kAvg:       0     0     0     7     0     1     0     5     0     3     5     0
********************************************************************************
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AM PEAK HOUR            Wed Feb 8, 2006 19:31:14                 Page 6-1
--------------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                       Existing AM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
               2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #3 E. 20th Street / NB SR-99 Ramps
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap. (X):        0.473
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):        11.1
Optimal Cycle:        39                 Level Of Service:                 B
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:            Ovl             Include          Include            Ovl
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  1  0  0  1   0  0  0  0  0   2  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      57     0    89     0     0     0   137   812     0     0   538   453
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   57     0    89     0     0     0   137   812     0     0   538   453
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:    63     0    99     0     0     0   152   902     0     0   598   503
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:   63     0    99     0     0     0   152   902     0     0   598   503
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:    63     0    99     0     0     0   152   902     0     0   598   503
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  1.00  0.85  1.00  1.00  1.00  0.92  0.95  1.00  1.00  0.95  0.85
Lanes:       2.00  0.00  1.00  0.00  0.00  0.00  2.00  2.00  0.00  0.00  2.00  1.00
Final Sat.:  3618     0  1615     0     0     0  3502  3610     0     0  3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02  0.00  0.06  0.00  0.00  0.00  0.04  0.25  0.00  0.00  0.17  0.31
Crit Moves:              ****                    ****                          ****
Green/Cycle: 0.13  0.00  0.13  0.00  0.00  0.00  0.09  0.75  0.00  0.00  0.66  0.66
Volume/Cap:  0.14  0.00  0.47  0.00  0.00  0.00  0.47  0.33  0.00  0.00  0.25  0.47
Delay/Veh:   38.7   0.0  42.1   0.0   0.0   0.0  44.2   4.2   0.0   0.0   7.0   8.8
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  38.7   0.0  42.1   0.0   0.0   0.0  44.2   4.2   0.0   0.0   7.0   8.8
HCM2kAvg:       1     0     3     0     0     0     3     5     0     0     4     8
********************************************************************************
```



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AM PEAK HOUR            Wed Feb 8, 2006 19:31:14                 Page 7-1
--------------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                       Existing AM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #4 E.20th Street / Business Lane
********************************************************************************
Average Delay (sec/veh):        0.2   Worst Case Level Of Service:     A[  9.6]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign      Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1   0  0  0  0  0   0  0  4  0  1   0  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0    32     0     0     0     0   704   197     0   991     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0    32     0     0     0     0   704   197     0   991     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:     0     0    36     0     0     0     0   782   219     0  1101     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:     0     0    36     0     0     0     0   782   219     0  1101     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   196  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   819  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   819  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.04  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx   0.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx   9.6 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:   *    *    A     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:        9.6            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         A                *                *                *
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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.422
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 13.6
Optimal Cycle: 44 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	1	0	1!	0	0	0	1	0	0	2	2	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	107		5		9	9		2		40	63	655		18		23	844			7
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			1.00
Initial Bse:	107		5		9	9		2		40	63	655		18		23	844			7
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90	0.90		0.90	0.90	0.90			0.90
PHF Volume:	119		6		10	10		2		44	70	728		20		26	938			8
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0			0
Reduced Vol:	119		6		10	10		2		44	70	728		20		26	938			8
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00			1.00
Final Vol.:	119		6		10	10		2		44	70	728		20		26	938			8
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900	1900	1900	1900	1900		1900	1900	1900			1900
Adjustment:	0.93	0.93		0.93		0.94	0.94		0.73	0.88	0.90	0.90	0.90		0.90	0.90	0.90			0.90
Lanes:	1.80	0.07		0.13		0.82	0.18		2.00	2.00	1.95	0.05	1.00		1.98	0.02				
Final Sat.:	3162	131		235		1464	325		2786	3334	3331		92		1718	3405				28
Capacity Analysis Module:																				
Vol/Sat:	0.04	0.04		0.04		0.01	0.01		0.02	0.02	0.22		0.01		0.28	0.28				
Crit Moves:		****							****	****					****					
Green/Cycle:	0.10	0.10		0.10		0.04	0.04		0.04	0.05	0.66		0.66		0.04	0.65				
Volume/Cap:	0.37	0.42		0.42		0.18	0.18		0.42	0.42	0.33		0.33		0.42	0.42				
Delay/Veh:	42.7	43.1		43.1		47.9	47.9		49.8	47.9	7.6		7.6		48.9	8.5				
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00				
AdjDel/Veh:	42.7	43.1		43.1		47.9	47.9		49.8	47.9	7.6		7.6		48.9	8.5				
HCM2kAvg:	2		3		3	1		1		1	2		5		5	1				7

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.595
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 33.2
Optimal Cycle: 57 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Include					Ovl				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:																				
Base Vol:	186	121			8	110	250		212		158	154		247		67	304			160
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	186	121			8	110	250		212		158	154		247		67	304			160
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90			0.90
PHF Volume:	207	134			9	122	278		236		176	171		274		74	338			178
Reduct Vol:	0	0			0	0	0		0		0	0		0		0	0			0
Reduced Vol:	207	134			9	122	278		236		176	171		274		74	338			178
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Final Vol.:	207	134			9	122	278		236		176	171		274		74	338			178
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900			1900
Adjustment:	0.90	0.90		0.81		0.90	0.84		0.84		0.90	0.82		0.82		0.90	0.90			0.81
Lanes:	1.00	2.00		1.00		1.00	1.08		0.92		1.00	1.00		1.00		1.00	2.00			1.00
Final Sat.:	1718	3437		1537		1718	1731		1468		1718	1560		1560		1718	3437			1537
Capacity Analysis Module:																				
Vol/Sat:	0.12	0.04		0.01		0.07	0.16		0.16		0.10	0.11		0.18		0.04	0.10			0.12
Crit Moves:	****						****							****		****				
Green/Cycle:	0.20	0.17		0.24		0.30	0.27		0.27		0.19	0.30		0.30		0.07	0.18			0.48
Volume/Cap:	0.60	0.23		0.02		0.23	0.60		0.60		0.54	0.37		0.60		0.60	0.54			0.24
Delay/Veh:	39.0	36.3		29.1		26.3	32.9		32.9		38.7	28.1		31.4		52.5	38.2			15.2
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
AdjDel/Veh:	39.0	36.3		29.1		26.3	32.9		32.9		38.7	28.1		31.4		52.5	38.2			15.2
HCM2kAvg:	7		2		0	3		8		8	6		4		8	3		5		3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[11.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	1		22		85	44	145		8		9		2		9	50	11			1
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00			1.00
Initial Bse:	1		22		85	44	145		8		9		2		9	50	11			1
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90		0.90		0.90	0.90	0.90			0.90
PHF Volume:	1		24		94	49	161		9		10		2		10	56	12			1
Reduct Vol:	0		0		0	0		0		0	0		0		0	0	0			0
Final Vol.:	1		24		94	49	161		9		10		2		10	56	12			1
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx			4.1	xxxx	xxxxx			7.1	6.5		6.2		7.1	6.5		6.2	
FollowUpTim:	2.2	xxxx	xxxxx			2.2	xxxx	xxxxx			3.5	4.0		3.3		3.5	4.0		3.3	
Capacity Module:																				
Cnflict Vol:	170	xxxx	xxxxx			119	xxxx	xxxxx			344	384		166		343	342			72
Potent Cap.:	1420	xxxx	xxxxx			1482	xxxx	xxxxx			614	552		884		615	584			996
Move Cap.:	1420	xxxx	xxxxx			1482	xxxx	xxxxx			587	533		884		590	563			996
Volume/Cap:	0.00	xxxx	xxxx			0.03	xxxx	xxxx			0.02	0.00		0.01		0.09	0.02			0.00
Level Of Service Module:																				
Queue:	0.0	xxxx	xxxxx			0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Stopped Del:	7.5	xxxx	xxxxx			7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	A	*		*		A	*		*	*	*	*		*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	684	xxxxx			xxxx	589	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx				0.1	xxxxx	xxxxx			0.4	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx				10.4	xxxxx	xxxxx			11.9	xxxxx			
Shared LOS:	*	*		*	*	*	*		*		B	*		*		B	*			
ApproachDel:	xxxxxx					xxxxxx					10.4					11.9				
ApproachLOS:	*					*					B					B				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: A[8.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0		21		6	93	52		0		0		0		0	7	0			43
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00			1.00
Initial Bse:	0		21		6	93	52		0		0		0		0	7	0			43
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90		0.90		0.90	0.90	0.90			0.90
PHF Volume:	0		23		7	103	58		0		0		0		0	8	0			48
Reduct Vol:	0		0		0	0		0		0	0		0		0	0	0			0
Final Vol.:	0		23		7	103	58		0		0		0		0	8	0			48
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx					6.4	xxxx			6.2
FollowUpTim:	xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx					3.5	xxxx			3.3
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			30	xxxx	xxxxx	xxxx	xxxx	xxxxx					291	xxxx			27
Potent Cap.:	xxxx	xxxx	xxxxx			1596	xxxx	xxxxx	xxxx	xxxx	xxxxx					704	xxxx			1055
Move Cap.:	xxxx	xxxx	xxxxx			1596	xxxx	xxxxx	xxxx	xxxx	xxxxx					667	xxxx			1055
Volume/Cap:	xxxx	xxxx	xxxx			0.06	xxxx	xxxx	xxxx	xxxx	xxxx					0.01	xxxx			0.05
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx			0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Stopped Del:	xxxxx	xxxx	xxxxx			7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*		*		A	*		*	*	*	*		*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	975	xxxxx							
SharedQueue:	xxxxx	xxxx	xxxxx			0.2	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shrd StpDel:	xxxxx	xxxx	xxxxx			7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Shared LOS:	*	*		*		A	*		*	*	*	*		A						
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					8.9				
ApproachLOS:	*					*					*					A				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A[9.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	3		0	0	0		0	0	0		98	1	1		47	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	3		0	0	0		0	0	0		98	1	1		47	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	3		0	0	0		0	0	0		109	1	1		52	0
Reduct Vol:	0		0	0	0		0	0	0		0	0	0		0	0
Final Vol.:	3		0	0	0		0	0	0		109	1	1		52	0
Critical Gap Module:																
Critical Gp:	6.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	164	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		110	xxxx	xxxxx			
Potent Cap.:	827	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1480	xxxx	xxxxx			
Move Cap.:	826	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1480	xxxx	xxxxx			
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.00	xxxx	xxxx			
Level Of Service Module:																
Queue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx		
Stopped Del:	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx		7.4	xxxx	xxxxx		
LOS by Move:	A	*	*	*	*	*	*	*	*	*		A	*	*		
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.4	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*		A	*	*		
ApproachDel:	9.4				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	A				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 1.8 Worst Case Level Of Service: A[9.7]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0
Volume Module:																
Base Vol:	25		0	10		0	0	0		0	121	38	15	37		0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	25		0	10		0	0	0		0	121	38	15	37		0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	28		0	11		0	0	0		0	134	42	17	41		0
Reduct Vol:	0		0	0		0	0	0		0	0	0	0	0		0
Final Vol.:	28		0	11		0	0	0		0	134	42	17	41		0
Critical Gap Module:																
Critical Gp:	6.4	xxxx		6.2	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx		4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx		2.2	xxxx	xxxxx		
Capacity Module:																
Cnflict Vol:	230	xxxx		156	xxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx		177	xxxx	xxxxx		
Potent Cap.:	758	xxxx		890	xxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx		1399	xxxx	xxxxx		
Move Cap.:	751	xxxx		890	xxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx		1399	xxxx	xxxxx		
Volume/Cap:	0.04	xxxx		0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.01	xxxx	xxxx		
Level Of Service Module:																
Queue:	0.1	xxxx		0.0	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx		0.0	xxxx	xxxxx		
Stopped Del:	10.0	xxxx		9.1	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx		7.6	xxxx	xxxxx		
LOS by Move:	A	*		A	*	*	*	*	*	*		A	*	*		
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*	A	*	*	
ApproachDel:	9.7				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	A				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: A[9.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0	0	0	0	0	1	1	0	0	1	0	0	1 0
Volume Module:																
Base Vol:	6		0	55		0	0	5		1	122	8	85	41		2
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	6		0	55		0	0	5		1	122	8	85	41		2
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	7		0	61		0	0	6		1	136	9	94	46		2
Reduct Vol:	0		0	0		0	0	0		0	0	0	0	0		0
Final Vol.:	7		0	61		0	0	6		1	136	9	94	46		2
Critical Gap Module:																
Critical Gp:	7.1	xxxx		6.2	xxxxx	xxxx		6.2		4.1	xxxx	xxxxx		4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx		3.3		2.2	xxxx	xxxxx		2.2	xxxx	xxxxx
Capacity Module:																
Cnflict Vol:	381	xxxx		140	xxxx	xxxx		47		48	xxxx	xxxxx		144	xxxx	xxxxx
Potent Cap.:	581	xxxx		913	xxxx	xxxx		1028		1559	xxxx	xxxxx		1438	xxxx	xxxxx
Move Cap.:	549	xxxx		913	xxxx	xxxx		1028		1559	xxxx	xxxxx		1438	xxxx	xxxxx
Volume/Cap:	0.01	xxxx		0.07	xxxx	xxxx		0.01		0.00	xxxx	xxxx		0.07	xxxx	xxxx
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx			0.0		0.0	xxxx	xxxxx		0.2	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx			8.5		7.3	xxxx	xxxxx		7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*		A		A	*	*		A	*	*
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	857	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx		
Shrd StpDel:	xxxxx	9.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx		
Shared LOS:	*	A	*	*	*	*	*	*	*	*	*	*	*	*		
ApproachDel:	9.6				8.5				xxxxxx				xxxxxx			
ApproachLOS:	A				A				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.286
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 25.9
Optimal Cycle: 37 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	0	1	0	2	0	0	1	0	1	0	1 0
Volume Module:																
Base Vol:	63	169		12	49	367		57	73		16	88	16		8	33
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	63	169		12	49	367		57	73		16	88	16		8	33
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	70	188		13	54	408		63	81		18	98	18		9	37
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	70	188		13	54	408		63	81		18	98	18		9	37
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Final Vol.:	70	188		13	54	408		63	81		18	98	18		9	37
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.90	0.90		0.90	0.90	0.90		0.81	0.90		0.86	0.86	0.93		0.86	0.86
Lanes:	1.00	1.87		0.13	1.00	2.00		1.00	2.00		0.15	0.85	1.00		0.20	0.80
Final Sat.:	1718	3177		226	1718	3437		1537	3432		250	1375	1769		319	1317
Capacity Analysis Module:																
Vol/Sat:	0.04	0.06		0.06	0.03	0.12		0.04	0.02		0.07	0.07	0.01		0.03	0.03
Crit Moves:	****					****					****		****			
Green/Cycle:	0.14	0.36		0.36	0.19	0.41		0.41	0.13		0.25	0.25	0.04		0.15	0.15
Volume/Cap:	0.29	0.16		0.16	0.16	0.29		0.10	0.18		0.29	0.29	0.29		0.18	0.18
Delay/Veh:	39.0	21.7		21.7	33.8	19.6		18.0	38.9		30.8	30.8	49.6		37.2	37.2
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	39.0	21.7		21.7	33.8	19.6		18.0	38.9		30.8	30.8	49.6		37.2	37.2
HCM2kAvg:	2	2		2	2	4		1	1		3	3	1		1	1

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                 Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                          Existing AM Peak Hour Conditions
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
              2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #13 FOREST AVE / DWY 5
********************************************************************************
Average Delay (sec/veh):      0.3   Worst Case Level Of Service:       B[ 10.0]
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  2  0  0    0  0  1  1  0    0  0  0  0  1    0  0  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  244     0     0  468     3     0     0    25     0     0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  244     0     0  468     3     0     0    25     0     0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0  271     0     0  520     3     0     0    28     0     0     0
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
Final Vol.:     0  271     0     0  520     3     0     0    28     0     0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   262  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   743  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   743  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  0.04  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:       xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx   0.1 xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  10.0 xxxxx xxxx xxxxx
LOS by Move:   *    *     *     *    *     *     *    *     B     *     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *     *     *
ApproachDel:    xxxxxx           xxxxxx            10.0           xxxxxx
ApproachLOS:        *                *               B                *
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                 Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                          Existing AM Peak Hour Conditions
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                       Level Of Service Computation Report
              2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive
********************************************************************************
Average Delay (sec/veh):      2.1   Worst Case Level Of Service:       B[ 15.0]
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        1  0  1  1  0    1  0  1  1  0    0  0  1! 0  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      56  214    22    63  360    70    12     1    18     8     0    18
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   56  214    22    63  360    70    12     1    18     8     0    18
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    62  238    24    70  400    78    13     1    20     9     0    20
Reduct Vol:     0    0     0     0    0     0     0     0     0     0     0     0
Final Vol.:    62  238    24    70  400    78    13     1    20     9     0    20
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.2 xxxx xxxxx   4.2 xxxx xxxxx   7.5  6.5   6.9   7.5 xxxx   6.9
FollowUpTim:  2.3 xxxx xxxxx   2.3 xxxx xxxxx   3.5  4.0   3.3   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  478 xxxx xxxxx   262 xxxx xxxxx   822  966   239   715 xxxx   131
Potent Cap.: 1060 xxxx xxxxx  1277 xxxx xxxxx   266  253   762   318 xxxx   894
Move Cap.:   1060 xxxx xxxxx  1277 xxxx xxxxx   238  225   762   282 xxxx   894
Volume/Cap:  0.06 xxxx  xxxx  0.05 xxxx  xxxx  0.06 0.00  0.03  0.03 xxxx  0.02
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.2 xxxx xxxxx   0.2 xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxxx xxxxx
Stopped Del:  8.6 xxxx xxxxx   8.0 xxxx xxxxx xxxxx xxxx xxxxx  18.2 xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     C     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  395 xxxxx  xxxx xxxx  894
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.3 xxxxx xxxxx xxxx  0.1
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 15.0 xxxxx xxxxx xxxx  9.1
Shared LOS:    *    *     *     *    *     *     *    B     *     *     *     A
ApproachDel:    xxxxxx           xxxxxx            15.0           11.9
ApproachLOS:        *                *               B              B
```



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                 Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                          Existing AM Peak Hour Conditions
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                       Level Of Service Computation Report
              2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #15 Forest Avenue / Notre Dame Boulevard
********************************************************************************
Cycle (sec):        100                  Critical Vol./Cap. (X):        0.272
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):         19.8
Optimal Cycle:       37                   Level Of Service:                  B
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include           Ovl            Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  0  2    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     220   94   21   11  144   21    7   26  204    5   47   14
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  220   94   21   11  144   21    7   26  204    5   47   14
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   244  104   23   12  160   23    8   29  227    6   52   16
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  244  104   23   12  160   23    8   29  227    6   52   16
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   244  104   23   12  160   23    8   29  227    6   52   16
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.95 0.92  0.92  0.95 0.93  0.93  0.95 1.00  0.75  0.95 0.97  0.97
Lanes:       1.00 1.63  0.37  1.00 1.75  0.25  1.00 1.00  2.00  1.00 0.77  0.23
Final Sat.:  1805 2871   641  1805 3091   451  1805 1900  2842  1805 1414   421
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.04  0.04  0.01 0.05  0.05  0.00 0.02  0.08  0.00 0.04  0.04
Crit Moves:  ****                 ****                 ****                 ****
Green/Cycle: 0.50 0.58  0.58  0.11 0.19  0.19  0.02 0.13  0.62  0.03 0.14  0.14
Volume/Cap:  0.27 0.06  0.06  0.06 0.27  0.27  0.27 0.12  0.13  0.12 0.27  0.27
Delay/Veh:   14.7  9.2   9.2  40.2 34.8  34.8  53.7 39.0   7.7  48.8 39.4  39.4
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  14.7  9.2   9.2  40.2 34.8  34.8  53.7 39.0   7.7  48.8 39.4  39.4
HCM2kAvg:       5    1     1     0    3     3     1    1     1     0    2     2
********************************************************************************
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AM PEAK HOUR                Wed Feb 8, 2006 19:31:14                    Page 19-1
--------------------------------------------------------------------------------
                 Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                          Existing AM Peak Hour Conditions
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
              2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #16 E. Park Avenue / Whitman Avenue
********************************************************************************
Cycle (sec):        100                  Critical Vol./Cap. (X):        0.433
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):          8.5
Optimal Cycle:       45                   Level Of Service:                  A
********************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  1! 0  0    1  0  0  1  0    1  0  0  1  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       4    0   10   42    3   28   35  741    5    8  906   79
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    4    0   10   42    3   28   35  741    5    8  906   79
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     4    0   11   47    3   31   39  823    6    9 1007   88
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:    4    0   11   47    3   31   39  823    6    9 1007   88
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     4    0   11   47    3   31   39  823    6    9 1007   88
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.89 1.00  0.89  0.95 0.87  0.87  0.95 0.95  0.95  0.95 0.94  0.94
Lanes:       0.29 0.00  0.71  1.00 0.10  0.90  1.00 1.99  0.01  1.00 1.84  0.16
Final Sat.:   484    0  1210  1805  159  1484  1805 3582    24  1805 3281   286
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00  0.01  0.03 0.02  0.02  0.02 0.23  0.23  0.00 0.31  0.31
Crit Moves:                   ****  ****                 ****                 ****
Green/Cycle: 0.02 0.00  0.02  0.06 0.06  0.06  0.05 0.74  0.74  0.02 0.71  0.71
Volume/Cap:  0.43 0.00  0.43  0.43 0.35  0.35  0.43 0.31  0.31  0.31 0.43  0.43
Delay/Veh:   56.5  0.0  56.5  48.1 47.3  47.3  49.5  4.4   4.4  54.7  6.2   6.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  56.5  0.0  56.5  48.1 47.3  47.3  49.5  4.4   4.4  54.7  6.2   6.2
HCM2kAvg:       1    0     1     2    1     1     2    4     4     1    7     7
********************************************************************************
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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Average Delay (sec/veh): 1.4 Worst Case Level Of Service: B[10.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Ignore				Ignore				Ignore				Include			
Lanes:	0	0	0	0 1	0	0	0	0 1	0	0	1	0 1	1	0	1	0 0
Volume Module:																
Base Vol:	0	0	722	0	0	467	0	617	176	206	645	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	722	0	0	467	0	617	176	206	645	0				
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.90				
PHF Volume:	0	0	0	0	0	0	0	686	0	229	717	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Final Vol.:	0	0	0	0	0	0	0	686	0	229	717	0				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	686	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	917	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	917	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.25	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.0	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	10.2	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	*				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.450
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 10.1
Optimal Cycle: 29 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1!	0 1	0	0	0	0 0	0	0	2	0 1	0	0	2	0 1
Volume Module:																
Base Vol:	122	0	215	0	0	0	0	0	1065	274	0	729	965			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	122	0	215	0	0	0	0	1065	274	0	729	965				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00				
PHF Volume:	136	0	239	0	0	0	0	1183	0	0	810	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	136	0	239	0	0	0	0	1183	0	0	810	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
Final Vol.:	136	0	239	0	0	0	0	1183	0	0	810	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Lanes:	1.36	0.00	1.64	0.00	0.00	0.00	0.00	2.00	1.00	0.00	2.00	1.00				
Final Sat.:	2297	0	2763	0	0	0	0	3610	1900	0	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.06	0.00	0.09	0.00	0.00	0.00	0.00	0.33	0.00	0.00	0.22	0.00				
Crit Moves:			****					****		****						
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.73	0.00				
Volume/Cap:	0.31	0.00	0.45	0.00	0.00	0.00	0.00	0.45	0.00	0.00	0.31	0.00				
Delay/Veh:	34.8	0.0	36.1	0.0	0.0	0.0	0.0	5.6	0.0	0.0	4.8	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	34.8	0.0	36.1	0.0	0.0	0.0	0.0	5.6	0.0	0.0	4.8	0.0				
HCM2kAvg:	3	0	4	0	0	0	0	7	0	0	4	0				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.737
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 27.7
Optimal Cycle: 75 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Ovl				Ovl			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	0	1 0	1	0	1	0 1	2	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	251	53	34	106	64	251	307	644	329	89	1192	55				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	251	53	34	106	64	251	307	644	329	89	1192	55				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	279	59	38	118	71	279	341	716	366	99	1324	61				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	279	59	38	118	71	279	341	716	366	99	1324	61				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	279	59	38	118	71	279	341	716	366	99	1324	61				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	0.94	0.94	0.95	1.00	0.85	0.92	0.95	0.85	0.95	0.95	0.85				
Lanes:	2.00	0.61	0.39	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00				
Final Sat.:	3502	1089	699	1805	1900	1615	3502	3610	1615	1805	3610	1615				
Capacity Analysis Module:																
Vol/Sat:	0.08	0.05	0.05	0.07	0.04	0.17	0.10	0.20	0.23	0.05	0.37	0.04				
Crit Moves:	****					****	****				****					
Green/Cycle:	0.11	0.10	0.10	0.11	0.10	0.23	0.13	0.49	0.60	0.14	0.50	0.61				
Volume/Cap:	0.74	0.57	0.57	0.57	0.37	0.74	0.74	0.40	0.38	0.40	0.74	0.06				
Delay/Veh:	50.7	47.7	47.7	45.6	43.1	42.9	47.9	16.2	10.5	40.5	21.6	7.8				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	50.7	47.7	47.7	45.6	43.1	42.9	47.9	16.2	10.5	40.5	21.6	7.8				
HCM2kAvg:	6	4	4	4	2	10	7	7	6	3	17	1				

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                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                       Existing PM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #1 E. 20th Street / Whitman Road
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap. (X):        0.722
Loss Time (sec):      16 (Y+R =  4 sec) Average Delay (sec/veh):        26.3
Optimal Cycle:        72                Level Of Service:                  C
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:           Ovl             Include           Ovl             Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  2  0  1   2  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     211    12   440    30    11    15    27   926   254   461   733    68
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  211    12   440    30    11    15    27   926   254   461   733    68
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:   234    13   489    33    12    17    30  1029   282   512   814    76
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  234    13   489    33    12    17    30  1029   282   512   814    76
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   234    13   489    33    12    17    30  1029   282   512   814    76
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  1.00  0.85  0.95  0.91  0.91  0.95  0.95  0.85  0.92  0.94  0.94
Lanes:       1.00  1.00  1.00  1.00  0.42  0.58  1.00  2.00  1.00  2.00  1.83  0.17
Final Sat.:  1805  1900  1615  1805   734  1001  1805  3610  1615  3502  3261   302
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13  0.01  0.30  0.02  0.02  0.02  0.02  0.29  0.17  0.15  0.25  0.25
Crit Moves:              ****  ****                    ****        ****
Green/Cycle: 0.21  0.22  0.42  0.03  0.03  0.03  0.04  0.39  0.61  0.20  0.56  0.56
Volume/Cap:  0.60  0.03  0.72  0.72  0.60  0.60  0.45  0.72  0.29  0.72  0.45  0.45
Delay/Veh:   38.1  30.9  28.0  91.3  68.1  68.1  51.8  27.4   9.4  40.9  13.0  13.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  38.1  30.9  28.0  91.3  68.1  68.1  51.8  27.4   9.4  40.9  13.0  13.0
HCM2kAvg:       8     0    14     2     2     2     2    14     4     9     8     8
********************************************************************************
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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                       Existing PM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #2 E. 20th Street / SB Sr-99 Ramps
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap. (X):        0.934
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):        35.6
Optimal Cycle:       128                Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Ignore           Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        0  0  0  0  0   1  1  0  0  2   0  0  2  0  1   2  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0  1074     3   484     0  1275   121   185   778     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     0  1074     3   484     0  1275   121   185   778     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.00  0.90  0.90  0.90
PHF Volume:     0     0     0  1193     3   538     0  1417     0   206   864     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0  1193     3   538     0  1417     0   206   864     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
Final Vol.:     0     0     0  1193     3   538     0  1417     0   206   864     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.85  0.85  0.75  1.00  0.95  1.00  0.92  0.95  1.00
Lanes:       0.00  0.00  0.00  1.99  0.01  2.00  0.00  2.00  1.00  2.00  2.00  0.00
Final Sat.:     0     0     0  3221     9  2842     0  3610  1900  3502  3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.37  0.37  0.19  0.00  0.39  0.00  0.06  0.24  0.00
Crit Moves:                    ****                    ****        ****
Green/Cycle: 0.00  0.00  0.00  0.40  0.40  0.40  0.00  0.42  0.00  0.06  0.48  0.00
Volume/Cap:  0.00  0.00  0.00  0.93  0.93  0.48  0.00  0.93  0.00  0.93  0.50  0.00
Delay/Veh:    0.0   0.0   0.0  41.4  41.4  22.8   0.0  38.6   0.0  89.1  17.8   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  41.4  41.4  22.8   0.0  38.6   0.0  89.1  17.8   0.0
HCM2kAvg:       0     0     0    25    25     6     0    26     0     6     9     0
********************************************************************************
```



```
--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                       Existing PM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #3 E. 20th Street / NB SR-99 Ramps
********************************************************************************
Cycle (sec):         100                Critical Vol./Cap. (X):        1.081
Loss Time (sec):      12 (Y+R =  4 sec) Average Delay (sec/veh):        41.0
Optimal Cycle:       180                Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:           Ovl             Include          Include            Ovl
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  1  0  0  1   0  0  0  0  0   2  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     133     5   251     0     0     0   445  1904     0     0   830   926
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  133     5   251     0     0     0   445  1904     0     0   830   926
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:   148     6   279     0     0     0   494  2116     0     0   922  1029
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  148     6   279     0     0     0   494  2116     0     0   922  1029
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   148     6   279     0     0     0   494  2116     0     0   922  1029
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.85  0.85  0.85  1.00  1.00  1.00  0.92  0.95  1.00  1.00  0.95  0.85
Lanes:       1.93  0.07  1.00  0.00  0.00  0.00  2.00  2.00  0.00  0.00  2.00  1.00
Final Sat.:  3113   117  1615     0     0     0  3502  3610     0     0  3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05  0.05  0.17  0.00  0.00  0.00  0.14  0.59  0.00  0.00  0.26  0.64
Crit Moves:              ****                    ****                          ****
Green/Cycle: 0.16  0.16  0.16  0.00  0.00  0.00  0.13  0.72  0.00  0.00  0.59  0.59
Volume/Cap:  0.30  0.30  1.08  0.00  0.00  0.00  1.08  0.81  0.00  0.00  0.43  1.08
Delay/Veh:   37.4  37.4 121.2   0.0   0.0   0.0 109.0  11.5   0.0   0.0  11.5  74.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  37.4  37.4 121.2   0.0   0.0   0.0 109.0  11.5   0.0   0.0  11.5  74.0
HCM2kAvg:       3     3    15     0     0     0    14    24     0     0     8    46
********************************************************************************
```



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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                       Existing PM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #4 E.20th Street / Business Lane
********************************************************************************
Average Delay (sec/veh):      0.1   Worst Case Level Of Service:      B[ 12.1]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:        0  0  0  0  1   0  0  0  0  0   0  0  4  0  1   0  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0    33     0     0     0     0  1688   467     0  1756     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0    33     0     0     0     0  1688   467     0  1756     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:     0     0    37     0     0     0     0  1876   519     0  1951     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:     0     0    37     0     0     0     0  1876   519     0  1951     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   469  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   546  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   546  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.07  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx   0.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx  12.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *     *     B     *     *     *     *     *     *     *     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *     *     *     *     *     *     *     *     *     *     *     *
ApproachDel:       12.1            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```

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--------------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     Existing PM Peak Hour Conditions
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #5 E. 20th Street / Chico Mall Access
********************************************************************************
Cycle (sec):        100                 Critical Vol./Cap. (X):        0.970
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):        49.1
Optimal Cycle:      154                 Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase      Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  1! 0  0   0  1  0  0  2   2  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      370   40    31    80   41   317   489 1082   150    90 1069    52
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   370   40    31    80   41   317   489 1082   150    90 1069    52
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    411   44    34    89   46   352   543 1202   167   100 1188    58
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   411   44    34    89   46   352   543 1202   167   100 1188    58
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    411   44    34    89   46   352   543 1202   167   100 1188    58
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.93 0.93  0.93  0.95 0.95  0.73  0.88 0.89  0.89  0.90 0.90  0.90
Lanes:        1.72 0.16  0.12  0.66 0.34  2.00  2.00 1.76  0.24  1.00 1.91  0.09
Final Sat.:   3048  277   214  1192  611  2786  3334 2964   411  1718 3254   158
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.13 0.16  0.16  0.07 0.07  0.13  0.16 0.41  0.41  0.06 0.36  0.36
Crit Moves:               ****              ****  ****                  ****
Green/Cycle:  0.17 0.17  0.17  0.13 0.13  0.13  0.17 0.48  0.48  0.07 0.38  0.38
Volume/Cap:   0.81 0.97  0.97  0.57 0.57  0.97  0.97 0.85  0.85  0.85 0.97  0.97
Delay/Veh:    48.6 73.9  73.9  44.3 44.3  82.5  71.9 27.7  27.7  87.7 49.0  49.0
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   48.6 73.9  73.9  44.3 44.3  82.5  71.9 27.7  27.7  87.7 49.0  49.0
HCM2kAvg:       10   14    14     5    5     9    13   21    21     6   25    25
********************************************************************************
```



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--------------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     Existing PM Peak Hour Conditions
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #6 E. 20th Street / Forest Avenue
********************************************************************************
Cycle (sec):        100                 Critical Vol./Cap. (X):        0.893
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):        48.0
Optimal Cycle:      113                 Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:            Ovl             Include          Include            Ovl
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  2  0  1   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      467  394    41   174  282   144   274  392   197   118  388    82
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   467  394    41   174  282   144   274  392   197   118  388    82
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    519  438    46   193  313   160   304  436   219   131  431    91
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   519  438    46   193  313   160   304  436   219   131  431    91
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    519  438    46   193  313   160   304  436   219   131  431    91
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.90 0.90  0.81  0.90 0.86  0.86  0.90 0.86  0.86  0.90 0.90  0.81
Lanes:        1.00 2.00  1.00  1.00 1.32  0.68  1.00 1.33  0.67  1.00 2.00  1.00
Final Sat.:   1718 3437  1537  1718 2159  1102  1718 2173  1092  1718 3437  1537
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.30 0.13  0.03  0.11 0.15  0.15  0.18 0.20  0.20  0.08 0.13  0.06
Crit Moves:   ****                   ****         ****                  ****
Green/Cycle:  0.34 0.27  0.36  0.23 0.16  0.16  0.20 0.25  0.25  0.09 0.14  0.38
Volume/Cap:   0.89 0.48  0.08  0.48 0.89  0.89  0.89 0.82  0.82  0.82 0.89  0.16
Delay/Veh:    47.4 31.3  21.2  33.9 58.2  58.2  63.2 42.1  42.1  71.1 60.8  20.9
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   47.4 31.3  21.2  33.9 58.2  58.2  63.2 42.1  42.1  71.1 60.8  20.9
HCM2kAvg:       19    6     1     6   10    10    13   12    12     6   10     2
********************************************************************************
```



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--------------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     Existing PM Peak Hour Conditions
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #7 Business Lane / Chico Mall Access
********************************************************************************
Average Delay (sec/veh):       5.0   Worst Case Level Of Service:     C[ 23.7]
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        8   30    65   148  311     8     2    8     5    75    5     1
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     8   30    65   148  311     8     2    8     5    75    5     1
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      9   33    72   164  346     9     2    9     6    83    6     1
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      9   33    72   164  346     9     2    9     6    83    6     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:   4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:   2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:   354 xxxx xxxxx   106 xxxx xxxxx   769  802   350   773  771    69
Potent Cap.:  1215 xxxx xxxxx  1498 xxxx xxxxx   320  319   698   318  333   999
Move Cap.:    1215 xxxx xxxxx  1498 xxxx xxxxx   285  279   698   278  291   999
Volume/Cap:   0.01 xxxx  xxxx  0.11 xxxx  xxxx  0.01 0.03  0.01  0.30 0.02  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:         0.0 xxxx xxxxx   0.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:   8.0 xxxx xxxxx   7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:     A    *     *     A    *     *     *    *     *     *    *     *
Movement:       LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  350 xxxxx  xxxx  282 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx  1.3 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 15.8 xxxxx xxxxx 23.7 xxxxx
Shared LOS:      *    *     *     *    *     *     *    C     *     *    C     *
ApproachDel:      xxxxxx           xxxxxx             15.8             23.7
ApproachLOS:         *                *                 C                C
```



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--------------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     Existing PM Peak Hour Conditions
--------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 Business Lane / Baney Lane
********************************************************************************
Average Delay (sec/veh):       4.9   Worst Case Level Of Service:     B[ 10.3]
********************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0   0  1  0  0  0   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        0   57    13   196  174     0     0    0     0    15    0   102
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     0   57    13   196  174     0     0    0     0    15    0   102
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      0   63    14   218  193     0     0    0     0    17    0   113
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      0   63    14   218  193     0     0    0     0    17    0   113
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  xxxx xxxx xxxxx    78 xxxx xxxxx  xxxx xxxx xxxxx   699 xxxx    71
Potent Cap.:  xxxx xxxx xxxxx  1534 xxxx xxxxx  xxxx xxxx xxxxx   409 xxxx   998
Move Cap.:    xxxx xxxx xxxxx  1534 xxxx xxxxx  xxxx xxxx xxxxx   358 xxxx   998
Volume/Cap:   xxxx xxxx  xxxx  0.14 xxxx  xxxx  xxxx xxxx  xxxx  0.05 xxxx  0.11
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:       xxxxx xxxx xxxxx   0.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx   7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:     *    *     *     A    *     *     *    *     *     *    *     *
Movement:       LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.:  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  812 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.6 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx   7.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.3 xxxxx
Shared LOS:      *    *     *     A    *     *     *    *     *     *    B     *
ApproachDel:      xxxxxx           xxxxxx           xxxxxx             10.3
ApproachLOS:         *                *                *                 B
```

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-------------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                      Existing PM Peak Hour Conditions
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #9 BANEY LN / WALMART WEST DRWY
*******************************************************************************
Average Delay (sec/veh):      0.6   Worst Case Level Of Service:       B[ 10.1]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  0  0  0   0  0  0  1  0   0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        7    0    10     0    0     0     0  204     5     3  110     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     7    0    10     0    0     0     0  204     5     3  110     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      8    0    11     0    0     0     0  227     6     3  122     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      8    0    11     0    0     0     0  227     6     3  122     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  358 xxxx   229  xxxx xxxx xxxxx  xxxx xxxx xxxxx   232 xxxx xxxxx
Potent Cap.:  640 xxxx   810  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1335 xxxx xxxxx
Move Cap.:    639 xxxx   810  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1335 xxxx xxxxx
Volume/Cap:  0.01 xxxx  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:       xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  729 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd StpDel:xxxxx 10.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.7 xxxx xxxxx
Shared LOS:     *    B     *     *    *     *     *    *     *     A    *     *
ApproachDel:       10.1            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```



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-------------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                      Existing PM Peak Hour Conditions
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #10 BANEY LN / WALMART CENTRAL DRWY
*******************************************************************************
Average Delay (sec/veh):      2.8   Worst Case Level Of Service:       B[ 12.2]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  0  1   0  0  0  0  0   0  0  0  1  0   0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       47    0    67     0    0     0     0  237   117    60  141     0
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    47    0    67     0    0     0     0  237   117    60  141     0
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     52    0    74     0    0     0     0  263   130    67  157     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     52    0    74     0    0     0     0  263   130    67  157     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  618 xxxx   328  xxxx xxxx xxxxx  xxxx xxxx xxxxx   393 xxxx xxxxx
Potent Cap.:  453 xxxx   713  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1165 xxxx xxxxx
Move Cap.:    432 xxxx   713  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1165 xxxx xxxxx
Volume/Cap:  0.12 xxxx  0.10  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.06 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:         0.4 xxxx   0.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.2 xxxx xxxxx
Stopped Del: 14.5 xxxx  10.6 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
LOS by Move:    B    *     B     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.2 xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.3 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     A    *     *
ApproachDel:       12.2            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:         B                *                *                *
```



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-------------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                      Existing PM Peak Hour Conditions
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #11 BANEY LN / WALMART EAST DRWY
*******************************************************************************
Average Delay (sec/veh):      6.7   Worst Case Level Of Service:       C[ 19.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       52    0   164     2    2     3     1  295     8   156  146     1
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    52    0   164     2    2     3     1  295     8   156  146     1
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     58    0   182     2    2     3     1  328     9   173  162     1
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     58    0   182     2    2     3     1  328     9   173  162     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1 xxxx   6.2   7.1  6.5   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3   3.5  4.0   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  847 xxxx   332   935  848   163   163 xxxx xxxxx   337 xxxx xxxxx
Potent Cap.:  284 xxxx   714   248  300   887  1415 xxxx xxxxx  1223 xxxx xxxxx
Move Cap.:    251 xxxx   714   164  258   887  1415 xxxx xxxxx  1223 xxxx xxxxx
Volume/Cap:  0.23 xxxx  0.26  0.01 0.01  0.00  0.00 xxxx  xxxx  0.14 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:       xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.5 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx   8.4 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  494 xxxxx  xxxx  300 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  2.6 xxxxx xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx 19.0 xxxxx xxxxx 17.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    C     *     *    C     *     *    *     *     *    *     *
ApproachDel:       19.0             17.3            xxxxxx           xxxxxx
ApproachLOS:         C                C                *                *
```



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-------------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                      Existing PM Peak Hour Conditions
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
            2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive
*******************************************************************************
Cycle (sec):        100                 Critical Vol./Cap. (X):        0.424
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):        27.4
Optimal Cycle:       44                 Level Of Service:                 C
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:      0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0   1  0  2  0  1   2  0  0  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      100  455    37    47  355   190   379   11   171     8   13    34
Growth Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   100  455    37    47  355   190   379   11   171     8   13    34
User Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:      0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    111  506    41    52  394   211   421   12   190     9   14    38
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   111  506    41    52  394   211   421   12   190     9   14    38
PCE Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:      1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    111  506    41    52  394   211   421   12   190     9   14    38
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:     1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:   0.90 0.89  0.89  0.90 0.90  0.81  0.90 0.84  0.84  0.93 0.87  0.87
Lanes:        1.00 1.85  0.15  1.00 2.00  1.00  2.00 0.06  0.94  1.00 0.28  0.72
Final Sat.:   1718 3143   256  1718 3437  1537  3432   97  1503  1769  459  1202
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:      0.06 0.16  0.16  0.03 0.11  0.14  0.12 0.13  0.13  0.01 0.03  0.03
Crit Moves:   ****                        ****  ****                   ****
Green/Cycle:  0.15 0.40  0.40  0.08 0.32  0.32  0.29 0.35  0.35  0.01 0.07  0.07
Volume/Cap:   0.42 0.40  0.40  0.40 0.35  0.42  0.42 0.36  0.36  0.36 0.42  0.42
Delay/Veh:    39.5 21.6  21.6  46.1 26.0  27.1  29.1 24.6  24.6  57.7 46.6  46.6
User DelAdj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:   39.5 21.6  21.6  46.1 26.0  27.1  29.1 24.6  24.6  57.7 46.6  46.6
HCM2kAvg:        4    6     6     2    5     5     6    5     5     1    2     2
*******************************************************************************
```

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[10.7]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	592		0		0	530		4		0		0	69		0		0	0	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00		1.00	1.00	
Initial Bse:	0	592		0		0	530		4		0		0	69		0		0	0	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00		1.00	1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90	0.90		0.90		0.90	0.90	
PHF Volume:	0	658		0		0	589		4		0		0	77		0		0	0	
Reduct Vol:	0	0		0		0	0		0		0		0	0		0		0	0	
Final Vol.:	0	658		0		0	589		4		0		0	77		0		0	0	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			6.9	xxxxx	xxxx	xxxxx						
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			3.3	xxxxx	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			297	xxxx	xxxx	xxxxx						
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			706	xxxx	xxxx	xxxxx						
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			706	xxxx	xxxx	xxxxx						
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			0.11	xxxx	xxxx	xxxx						
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			0.4	xxxxx	xxxx	xxxxx						
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			10.7	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*	*	*	*	*	*	*			B	*	*	*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			xxxx	xxxx	xxxxx	xxxx						
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			xxxxx	xxxx	xxxxx	xxxxx						
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			xxxxx	xxxx	xxxxx	xxxxx						
Shared LOS:	*	*	*	*	*	*	*	*			*	*	*	*						
ApproachDel:	xxxxxx					xxxxxx					10.7			xxxxxx						
ApproachLOS:	*					*					B			*						

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Average Delay (sec/veh): 3.4 Worst Case Level Of Service: E[36.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	1	0	0	1	0
Volume Module:																				
Base Vol:	38	500		26		58	501		30		55		0	23		8		0	37	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00		1.00	1.00	
Initial Bse:	38	500		26		58	501		30		55		0	23		8		0	37	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00		1.00	1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90	0.90		0.90		0.90	0.90	
PHF Volume:	42	556		29		64	557		33		61		0	26		9		0	41	
Reduct Vol:	0	0		0		0	0		0		0		0	0		0		0	0	
Final Vol.:	42	556		29		64	557		33		61		0	26		9		0	41	
Critical Gap Module:																				
Critical Gp:	4.2	xxxx	xxxxx	4.2	xxxx	xxxxx					7.5	xxxx	6.9	7.5	xxxx	6.9				
FollowUpTim:	2.3	xxxx	xxxxx	2.3	xxxx	xxxxx					3.5	xxxx	3.3	3.5	xxxx	3.3				
Capacity Module:																				
Cnflict Vol:	590	xxxx	xxxxx	584	xxxx	xxxxx					1064	xxxx	295	1062	xxxx	292				
Potent Cap.:	961	xxxx	xxxxx	966	xxxx	xxxxx					177	xxxx	701	178	xxxx	704				
Move Cap.:	961	xxxx	xxxxx	966	xxxx	xxxxx					153	xxxx	701	157	xxxx	704				
Volume/Cap:	0.04	xxxx	xxxx	0.07	xxxx	xxxx					0.40	xxxx	0.04	0.06	xxxx	0.06				
Level Of Service Module:																				
Queue:	0.1	xxxx	xxxxx	0.2	xxxx	xxxxx					xxxxx	xxxx	0.2	xxxx	xxxxx					
Stopped Del:	8.9	xxxx	xxxxx	9.0	xxxx	xxxxx					xxxxx	xxxx	29.3	xxxx	xxxxx					
LOS by Move:	A	*	*	A	*	*					*	*	D	*	*					
Movement:	LT - LTR - RT			LT - LTR - RT							LT - LTR - RT			LT - LTR - RT						
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx					xxxx	199	xxxxx	xxxx	xxxx	704				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					xxxxx	2.0	xxxxx	xxxxx	xxxx	0.2				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					xxxxx	36.4	xxxxx	xxxxx	xxxx	10.4				
Shared LOS:	*	*	*	*	*	*					*	E	*	*	*	B				
ApproachDel:	xxxxxx			xxxxxx							36.4			13.8						
ApproachLOS:	*			*							E			B						

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.411
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 43 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ovl					Include				
Min. Green:	0	0		0		0	0		0		0	0		0		0	0		0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	2	1	0	0	1	0
Volume Module:																				
Base Vol:	364	234		12		22	142		22		46	71		519		15	41		25	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	364	234		12		22	142		22		46	71		519		15	41		25	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	404	260		13		24	158		24		51	79		577		17	46		28	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	404	260		13		24	158		24		51	79		577		17	46		28	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	404	260		13		24	158		24		51	79		577		17	46		28	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.95	0.94		0.94		0.95	0.93		0.93		0.95	1.00		0.75		0.95	0.94		0.94	
Lanes:	1.00	1.90		0.10		1.00	1.73		0.27		1.00	1.00		2.00		1.00	0.62		0.38	
Final Sat.:	1805	3410		175		1805	3063		475		1805	1900		2842		1805	1113		679	
Capacity Analysis Module:																				
Vol/Sat:	0.22	0.08		0.08		0.01	0.05		0.05		0.03	0.04		0.20		0.01	0.04		0.04	
Crit Moves:	****						****				****						****			
Green/Cycle:	0.55	0.57		0.57		0.10	0.13		0.13		0.07	0.14		0.68		0.03	0.10		0.10	
Volume/Cap:	0.41	0.13		0.13		0.13	0.41		0.41		0.41	0.30		0.30		0.30	0.41		0.41	
Delay/Veh:	13.6	10.0		10.0		41.3	40.9		40.9		46.8	39.4		6.4		50.5	43.8		43.8	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	13.6	10.0		10.0		41.3	40.9		40.9		46.8	39.4		6.4		50.5	43.8		43.8	
HCM2kAvg:	8	2		2		1	3		3		2	2		4		1	3		3	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.641
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 23.2
Optimal Cycle: 62 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0		0		0	0		0		0	0		0		0	0		0	
Lanes:	0	0	1!	0	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	4	9		13		280	2		82		86	1014		17		12	740		194	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	4	9		13		280	2		82		86	1014		17		12	740		194	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	4	10		14		311	2		91		96	1127		19		13	822		216	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	4	10		14		311	2		91		96	1127		19		13	822		216	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	4	10		14		311	2		91		96	1127		19		13	822		216	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.93	0.93		0.93		0.95	0.85		0.85		0.95	0.95		0.95		0.95	0.92		0.92	
Lanes:	0.15	0.35		0.50		1.00	0.02		0.98		1.00	1.97		0.03		1.00	1.58		0.42	
Final Sat.:	271	609		879		1805	39		1584		1805	3543		59		1805	2772		727	
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.02		0.02		0.17	0.06		0.06		0.05	0.32		0.32		0.01	0.30		0.30	
Crit Moves:		****				****					****						****			
Green/Cycle:	0.03	0.03		0.03		0.27	0.27		0.27		0.08	0.53		0.53		0.01	0.46		0.46	
Volume/Cap:	0.64	0.64		0.64		0.64	0.21		0.21		0.64	0.60		0.60		0.60	0.64		0.64	
Delay/Veh:	75.4	75.4		75.4		35.2	28.6		28.6		53.5	16.5		16.5		86.1	21.4		21.4	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	75.4	75.4		75.4		35.2	28.6		28.6		53.5	16.5		16.5		86.1	21.4		21.4	
HCM2kAvg:	2	2		2		10	2		2		4	12		12		1	13		13	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: C[23.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Ignore				Ignore				Ignore				Include			
Lanes:	0	0	0	0 1	0	0	0	0 1	0	0	1	0 1	1	0	1	0 0
Volume Module:																
Base Vol:	0	0	979		0	0	348		0	1325	212		249	810		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	0	0	979		0	0	348		0	1325	212		249	810		0
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90		0.90
PHF Volume:	0	0	0		0	0	0		0	1472	0		277	900		0
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0		0
Final Vol.:	0	0	0		0	0	0		0	1472	0		277	900		0
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		1472	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		464	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		464	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		xxxx	xxxx	xxxx		0.60	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		3.8	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		23.6	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		*	*	*		C	*	*	
Movement:	LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT		LT -	LTR -	RT	
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	*	*		*	*	*		*	*	*		*	*	*	
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	*				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.740
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 10.8
Optimal Cycle: 54 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1!	0 1	0	0	0	0 0	0	0	2	0 1	0	0	2	0 1
Volume Module:																
Base Vol:	151	0	266		0	0	0		0	1863	441		0	908	877	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	151	0	266		0	0	0		0	1863	441		0	908	877	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.00		0.90	0.90	0.00	
PHF Volume:	168	0	296		0	0	0		0	2070	0		0	1009	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	168	0	296		0	0	0		0	2070	0		0	1009	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
Final Vol.:	168	0	296		0	0	0		0	2070	0		0	1009	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.89	1.00	0.89		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Lanes:	1.36	0.00	1.64		0.00	0.00	0.00		0.00	2.00	1.00		0.00	2.00	1.00	
Final Sat.:	2297	0	2763		0	0	0		0	3610	1900		0	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.00	0.11		0.00	0.00	0.00		0.00	0.57	0.00		0.00	0.28	0.00	
Crit Moves:			****							****			****			
Green/Cycle:	0.14	0.00	0.14		0.00	0.00	0.00		0.00	0.78	0.00		0.00	0.78	0.00	
Volume/Cap:	0.50	0.00	0.74		0.00	0.00	0.00		0.00	0.74	0.00		0.00	0.36	0.00	
Delay/Veh:	39.9	0.0	45.6		0.0	0.0	0.0		0.0	7.0	0.0		0.0	3.6	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	39.9	0.0	45.6		0.0	0.0	0.0		0.0	7.0	0.0		0.0	3.6	0.0	
HCM2kAvg:	4	0	7		0	0	0		0	18	0		0	5	0	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.964
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 45.7
Optimal Cycle: 149 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Ovl				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	1 0	1	0	1	0 1	2	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	352	171	65		174	82	536		492	1400	237		89	897	55	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	352	171	65		174	82	536		492	1400	237		89	897	55	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	391	190	72		193	91	596		547	1556	263		99	997	61	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	391	190	72		193	91	596		547	1556	263		99	997	61	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	391	190	72		193	91	596		547	1556	263		99	997	61	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	0.96	0.96		0.95	1.00	0.85		0.92	0.95	0.85		0.95	0.95	0.85	
Lanes:	2.00	0.72	0.28		1.00	1.00	1.00		2.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	3502	1320	502		1805	1900	1615		3502	3610	1615		1805	3610	1615	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.14	0.14		0.11	0.05	0.37		0.16	0.43	0.16		0.05	0.28	0.04	
Crit Moves:	****						****			****			****			
Green/Cycle:	0.12	0.19	0.19		0.14	0.22	0.40		0.18	0.45	0.56		0.06	0.32	0.47	
Volume/Cap:	0.96	0.75	0.75		0.75	0.22	0.92		0.86	0.96	0.29		0.96	0.86	0.08	
Delay/Veh:	79.3	46.5	46.5		52.3	32.2	46.1		50.9	41.7	11.6		124.2	38.3	14.9	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	79.3	46.5	46.5		52.3	32.2	46.1		50.9	41.7	11.6		124.2	38.3	14.9	
HCM2kAvg:	10	9	9		8	2	22		11	29	4		6	17	1	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 0.913
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 38.9
Optimal Cycle: 122 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	204	18	546	103	26	49	45	817	258	597	647	109								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	204	18	546	103	26	49	45	817	258	597	647	109								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81								
PHF Volume:	252	22	674	127	32	60	56	1009	319	737	799	135								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	252	22	674	127	32	60	56	1009	319	737	799	135								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	252	22	674	127	32	60	56	1009	319	737	799	135								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	1.00	0.85	0.95	0.90	0.90	0.95	0.95	0.85	0.92	0.93	0.93								
Lanes:	1.00	1.00	1.00	1.00	0.35	0.65	1.00	2.00	1.00	2.00	1.71	0.29								
Final Sat.:	1805	1900	1615	1805	594	1120	1805	3610	1615	3502	3022	509								
Capacity Analysis Module:																				
Vol/Sat:	0.14	0.01	0.42	0.07	0.05	0.05	0.03	0.28	0.20	0.21	0.26	0.26								
Crit Moves:			****	****				****		****										
Green/Cycle:	0.22	0.23	0.46	0.08	0.08	0.08	0.06	0.31	0.52	0.23	0.48	0.48								
Volume/Cap:	0.64	0.05	0.91	0.91	0.64	0.64	0.55	0.91	0.38	0.91	0.55	0.55								
Delay/Veh:	38.9	30.3	41.1	96.7	53.4	53.4	52.3	44.9	14.3	52.2	18.7	18.7								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	38.9	30.3	41.1	96.7	53.4	53.4	52.3	44.9	14.3	52.2	18.7	18.7								
HCM2kAvg:	8	1	23	7	4	4	3	19	6	16	10	10								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.832
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 27.1
Optimal Cycle: 85 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Ignore					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	0	0	0	1	1	0	0	2	0	0	2	0	1	2	0	2	0	0
Volume Module:																				
Base Vol:	0	0	0	860	0	420	0	1356	110	160	933	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	860	0	420	0	1356	110	160	933	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90								
PHF Volume:	0	0	0	956	0	467	0	1507	0	178	1037	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	956	0	467	0	1507	0	178	1037	0								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
Final Vol.:	0	0	0	956	0	467	0	1507	0	178	1037	0								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.75	1.00	0.95	1.00	0.92	0.95	1.00								
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	2.00	1.00	2.00	2.00	0.00								
Final Sat.:	0	0	0	3618	0	2842	0	3610	1900	3502	3610	0								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.26	0.00	0.16	0.00	0.42	0.00	0.05	0.29	0.00								
Crit Moves:				****				****		****										
Green/Cycle:	0.00	0.00	0.00	0.32	0.00	0.32	0.00	0.50	0.00	0.06	0.56	0.00								
Volume/Cap:	0.00	0.00	0.00	0.83	0.00	0.52	0.00	0.83	0.00	0.83	0.51	0.00								
Delay/Veh:	0.0	0.0	0.0	37.0	0.0	28.4	0.0	24.8	0.0	69.8	13.6	0.0								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	0.0	0.0	0.0	37.0	0.0	28.4	0.0	24.8	0.0	69.8	13.6	0.0								
HCM2kAvg:	0	0	0	17	0	6	0	22	0	5	10	0								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.909
Loss Time (sec): 12 (Y+R = 4 sec) Average Delay (sec/veh): 23.4
Optimal Cycle: 114 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Include					Ovl				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	2	0	1
Volume Module:																				
Base Vol:	79	0	225	0	0	0	344	1872	0	0	1014	779								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	79	0	225	0	0	0	344	1872	0	0	1014	779								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	88	0	250	0	0	0	382	2080	0	0	1127	866								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	88	0	250	0	0	0	382	2080	0	0	1127	866								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	88	0	250	0	0	0	382	2080	0	0	1127	866								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	0.92	0.95	1.00	1.00	0.95	0.85								
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00								
Final Sat.:	3618	0	1615	0	0	0	3502	3610	0	0	3610	1615								
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.00	0.15	0.00	0.00	0.00	0.11	0.58	0.00	0.00	0.31	0.54								
Crit Moves:			****				****					****								
Green/Cycle:	0.17	0.00	0.17	0.00	0.00	0.00	0.12	0.71	0.00	0.00	0.59	0.59								
Volume/Cap:	0.14	0.00	0.91	0.00	0.00	0.00	0.91	0.81	0.00	0.00	0.53	0.91								
Delay/Veh:	35.4	0.0	72.3	0.0	0.0	0.0	66.7	12.0	0.0	0.0	12.5	30.5								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	35.4	0.0	72.3	0.0	0.0	0.0	66.7	12.0	0.0	0.0	12.5	30.5								
HCM2kAvg:	1	0	11	0	0	0	9	24	0	0	10	28								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[11.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	2	0	0
Volume Module:																				
Base Vol:	0	0	32	0	0	0	0	0	1553	544	0	1793	0							
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	32	0	0	0	0	0	1553	544	0	1793	0							
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	0	0	36	0	0	0	0	0	1726	604	0	1992	0							
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Final Vol.:	0	0	36	0	0	0	0	0	1726	604	0	1992	0							
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	431	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	578	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	578	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
Queue:	xxxxx	xxxx	0.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Stopped Del:	xxxxx	xxxx	11.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*								
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT										
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	11.6			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	B			*			*			*										

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-------------------------------------------------------------------------------
                 Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                         Existing SAT Peak Hour Conditions
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
               2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 E. 20th Street / Chico Mall Access
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.037
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):       61.9
Optimal Cycle:      180               Level Of Service:                 E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1! 0  0   0  1  0  0  2   2  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     446   68    44  108   58   353  455 1034    96  111  994   126
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  446   68    44  108   58   353  455 1034    96  111  994   126
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:   496   76    49  120   64   392  506 1149   107  123 1104   140
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  496   76    49  120   64   392  506 1149   107  123 1104   140
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   496   76    49  120   64   392  506 1149   107  123 1104   140
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.93 0.93  0.93 0.95 0.95  0.73 0.88 0.89  0.89 0.90 0.89  0.89
Lanes:       1.67 0.20  0.13 0.65 0.35  2.00 2.00 1.83  0.17 1.00 1.77  0.23
Final Sat.:  2948  359   232 1173  630  2786 3334 3104   288 1718 2998   380
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.21  0.21 0.10 0.10  0.14 0.15 0.37  0.37 0.07 0.37  0.37
Crit Moves:             ****            **** ****                  ****
Green/Cycle: 0.20 0.20  0.20 0.14 0.14  0.14 0.15 0.42  0.42 0.08 0.36  0.36
Volume/Cap:  0.83 1.04  1.04 0.75 0.75  1.04 1.04 0.88  0.88 0.88 1.04  1.04
Delay/Veh:   45.9 86.6  86.6 54.1 54.1  99.4 93.4 33.5  33.5 88.4 68.3  68.3
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  45.9 86.6  86.6 54.1 54.1  99.4 93.4 33.5  33.5 88.4 68.3  68.3
HCM2kAvg:      12   19    19    7    7    11   14   21    21    7   28    28
*******************************************************************************
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-------------------------------------------------------------------------------
                 Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                         Existing SAT Peak Hour Conditions
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
               2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #6 E. 20th Street / Forest Avenue
*******************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.094
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):       78.8
Optimal Cycle:      180               Level Of Service:                 E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:            Ovl            Include          Include            Ovl
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  1   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     528  338    69  126  306   229  251  438   273  118  713   131
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  528  338    69  126  306   229  251  438   273  118  713   131
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:   587  376    77  140  340   254  279  487   303  131  792   146
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  587  376    77  140  340   254  279  487   303  131  792   146
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   587  376    77  140  340   254  279  487   303  131  792   146
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.90 0.90  0.81 0.90 0.85  0.85 0.90 0.85  0.85 0.90 0.90  0.81
Lanes:       1.00 2.00  1.00 1.00 1.14  0.86 1.00 1.23  0.77 1.00 2.00  1.00
Final Sat.:  1718 3437  1537 1718 1840  1377 1718 1994  1243 1718 3437  1537
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.34 0.11  0.05 0.08 0.18  0.18 0.16 0.24  0.24 0.08 0.23  0.09
Crit Moves:  ****                ****        ****                  ****
Green/Cycle: 0.31 0.28  0.36 0.21 0.17  0.17 0.15 0.27  0.27 0.09 0.21  0.42
Volume/Cap:  1.09 0.40  0.14 0.40 1.09  1.09 1.09 0.89  0.89 0.89 1.09  0.23
Delay/Veh:  101.4 29.7  21.6 35.1  108 108.3 126.4 46.2  46.2 89.3  102  19.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh: 101.4 29.7  21.6 35.1  108 108.3 126.4 46.2  46.2 89.3  102  19.0
HCM2kAvg:      30    5     2    4   16    16   16   15    15    7   20     3
*******************************************************************************
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-------------------------------------------------------------------------------
                 Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                         Existing SAT Peak Hour Conditions
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
              2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 Business Lane / Chico Mall Access
*******************************************************************************
Average Delay (sec/veh):      5.9   Worst Case Level Of Service:       E[ 37.3]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       9   15   240  143  394     7   13    8     8   84   11     4
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    9   15   240  143  394     7   13    8     8   84   11     4
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:    10   17   267  159  438     8   14    9     9   93   12     4
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Final Vol.:    10   17   267  159  438     8   14    9     9   93   12     4
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx  4.1 xxxx xxxxx  7.1  6.5   6.2  7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx  2.2 xxxx xxxxx  3.5  4.0   3.3  3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  446 xxxx xxxxx  283 xxxx xxxxx  938 1063   442  938  933   150
Potent Cap.: 1125 xxxx xxxxx 1291 xxxx xxxxx  247  225   620  246  268   902
Move Cap.:   1125 xxxx xxxxx 1291 xxxx xxxxx  210  193   620  209  230   902
Volume/Cap:  0.01 xxxx  xxxx 0.12 xxxx  xxxx 0.07 0.05  0.01 0.45 0.05  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx  0.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.2 xxxx xxxxx  8.2 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *    A    *     *    *    *     *    *    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx  249 xxxxx xxxx  218 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.4 xxxxx xxxxx  2.6 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 21.6 xxxxx xxxxx 37.3 xxxxx
Shared LOS:     *    *     *    *    *     *    *    C     *    *    E     *
ApproachDel:     xxxxxx           xxxxxx            21.6             37.3
ApproachLOS:        *                *                C                E
```

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-------------------------------------------------------------------------------
                 Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                         Existing SAT Peak Hour Conditions
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
              2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #8 Business Lane / Baney Lane
*******************************************************************************
Average Delay (sec/veh):      6.8   Worst Case Level Of Service:       C[ 18.4]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:          Include          Include          Include          Include
Lanes:        0  0  0  1  0   0  1  0  0  0   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  121    59  254  208     0    0    0     0   58    0   140
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0  121    59  254  208     0    0    0     0   58    0   140
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:     0  134    66  282  231     0    0    0     0   64    0   156
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Final Vol.:     0  134    66  282  231     0    0    0     0   64    0   156
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx  4.1 xxxx xxxxx xxxxx xxxx xxxxx  6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx  2.2 xxxx xxxxx xxxxx xxxx xxxxx  3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  200 xxxx xxxxx xxxx xxxx xxxxx  963 xxxx   167
Potent Cap.: xxxx xxxx xxxxx 1384 xxxx xxxxx xxxx xxxx xxxxx  286 xxxx   882
Move Cap.:   xxxx xxxx xxxxx 1384 xxxx xxxxx xxxx xxxx xxxxx  233 xxxx   882
Volume/Cap:  xxxx xxxx  xxxx 0.20 xxxx  xxxx xxxx xxxx  xxxx 0.28 xxxx  0.18
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx  0.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx  8.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *    A    *     *    *    *     *    *    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx  485 xxxxx
SharedQueue:xxxxx xxxx xxxxx  0.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  2.3 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx  8.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 18.4 xxxxx
Shared LOS:     *    *     *    A    *     *    *    *     *    *    C     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx            18.4
ApproachLOS:        *                *                *                C
```

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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	7	0	8		0	0	0		0	305	8		4	191	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	7	0	8		0	0	0		0	305	8		4	191	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	8	0	9		0	0	0		0	339	9		4	212	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	8	0	9		0	0	0		0	339	9		4	212	0	
Critical Gap Module:																
Critical Gp:	6.4	xxxx			6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx			3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	564	xxxx			343	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		348	xxxx	xxxxx	
Potent Cap.:	487	xxxx			699	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1211	xxxx	xxxxx	
Move Cap.:	485	xxxx			699	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1211	xxxx	xxxxx	
Volume/Cap:	0.02	xxxx			0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.00	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.0	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	580	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Shrd StpDel:	xxxxx	11.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.0	xxxx	xxxxx			
Shared LOS:	*	B	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	11.4				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	B				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 4.7 Worst Case Level Of Service: C[16.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0
Volume Module:																
Base Vol:	122	0	92		0	0	0		0	277	156		67	155	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	122	0	92		0	0	0		0	277	156		67	155	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	136	0	102		0	0	0		0	308	173		74	172	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	136	0	102		0	0	0		0	308	173		74	172	0	
Critical Gap Module:																
Critical Gp:	6.4	xxxx			6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx			3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	716	xxxx			394	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		481	xxxx	xxxxx	
Potent Cap.:	397	xxxx			655	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1081	xxxx	xxxxx	
Move Cap.:	375	xxxx			655	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1081	xxxx	xxxxx	
Volume/Cap:	0.36	xxxx			0.16	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.07	xxxx	xxxx	
Level Of Service Module:																
Queue:	1.6	xxxx			0.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx	
Stopped Del:	19.9	xxxx			11.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.6	xxxx	xxxxx	
LOS by Move:	C	*			B	*	*	*	*	*	*		A	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.6	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	16.3				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	C				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: E[50.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	27	0	184		15	4	3		9	349	11		241	192	5	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	27	0	184		15	4	3		9	349	11		241	192	5	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	30	0	204		17	4	3		10	388	12		268	213	6	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	30	0	204		17	4	3		10	388	12		268	213	6	
Critical Gap Module:																
Critical Gp:	7.1	xxxx			6.2	7.1	6.5		6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx			3.3	3.5	4.0		3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	1169	xxxx			394	1268	1172		216	219	xxxx	xxxxx	400	xxxx	xxxxx	
Potent Cap.:	172	xxxx			660	147	194		829	1351	xxxx	xxxxx	1159	xxxx	xxxxx	
Move Cap.:	137	xxxx			660	83	148		829	1351	xxxx	xxxxx	1159	xxxx	xxxxx	
Volume/Cap:	0.22	xxxx			0.31	0.20	0.03		0.00	0.01	xxxx	xxxx	0.23	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				0.0	xxxx	xxxxx	0.9	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				7.7	xxxx	xxxxx	9.0	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*				A	*	*	A	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT					LT - LTR - RT			LT - LTR - RT			
Shared Cap.:	xxxx	443	xxxxx	xxxx	104	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	3.0	xxxxx	xxxxx	0.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shrd StpDel:	xxxxx	21.9	xxxxx	xxxxx	50.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	*	C	*	*	E	*	*	*	*	*	*	*	*	*	*	
ApproachDel:	21.9				50.0				xxxxxx				xxxxxx			
ApproachLOS:	C				E				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.538
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 28.3
Optimal Cycle: 52 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1	0	1	0	2	0	1	2	0	0	1	0	
Volume Module:																
Base Vol:	200	403		3		20	372		224	325	20		203	11	14	24
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
Initial Bse:	200	403		3		20	372		224	325	20		203	11	14	24
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	0.90
PHF Volume:	222	448		3		22	413		249	361	22		226	12	16	27
Reduct Vol:	0	0		0		0	0		0	0	0		0	0	0	0
Reduced Vol:	222	448		3		22	413		249	361	22		226	12	16	27
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
Final Vol.:	222	448		3		22	413		249	361	22		226	12	16	27
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900		1900	1900		1900	1900	1900		1900	1900	1900	1900
Adjustment:	0.90	0.90		0.90		0.90	0.90		0.81	0.90	0.85		0.85	0.93	0.89	0.89
Lanes:	1.00	1.99		0.01		1.00	2.00		1.00	2.00	0.09		0.91	1.00	0.37	0.63
Final Sat.:	1718	3408		25		1718	3437		1537	3432	144		1463	1769	621	1064
Capacity Analysis Module:																
Vol/Sat:	0.13	0.13		0.13		0.01	0.12		0.16	0.11	0.15		0.15	0.01	0.03	0.03
Crit Moves:	****								****		****			****		
Green/Cycle:	0.24	0.49		0.49		0.05	0.30		0.30	0.24	0.29		0.29	0.01	0.06	0.06
Volume/Cap:	0.54	0.27		0.27		0.27	0.40		0.54	0.44	0.54		0.54	0.54	0.44	0.44
Delay/Veh:	34.6	14.9		14.9		47.6	28.1		30.5	32.5	31.4		31.4	72.5	48.7	48.7
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
AdjDel/Veh:	34.6	14.9		14.9		47.6	28.1		30.5	32.5	31.4		31.4	72.5	48.7	48.7
HCM2kAvg:	7	4		4		1	5		7	5	7		7	1	2	2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[11.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	606		0		0	580		6		0		0		67	0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	0	606		0		0	580		6		0		0		67	0		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90		0.90	0.90		0.90		0.90
PHF Volume:	0	673		0		0	644		7		0		0		74	0		0		0
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
Final Vol.:	0	673		0		0	644		7		0		0		74	0		0		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx		6.9	xxxxx	xxxx	xxxxx							
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx		3.3	xxxxx	xxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	326		xxxx	xxxx	xxxxx							
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	676		xxxx	xxxx	xxxxx							
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	676		xxxx	xxxx	xxxxx							
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.11		xxxx	xxxx	xxxx							
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.4		xxxxx	xxxx	xxxxx							
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.0		xxxxx	xxxx	xxxxx							
LOS by Move:	*	*	*	*	*	*	*	*	B		*	*	*							
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx							
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx							
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx							
Shared LOS:	*	*	*	*	*	*	*	*	*		*	*	*							
ApproachDel:	xxxxxx					xxxxxx					11.0					xxxxxx				
ApproachLOS:	*					*					B					*				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Average Delay (sec/veh): 2.5 Worst Case Level Of Service: D[26.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	1	0	0	1	0
Volume Module:																				
Base Vol:	4	508		6		16	543		14		59		0		29	9		0		39
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	4	508		6		16	543		14		59		0		29	9		0		39
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90		0.90	0.90		0.90		0.90
PHF Volume:	4	564		7		18	603		16		66		0		32	10		0		43
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
Final Vol.:	4	564		7		18	603		16		66		0		32	10		0		43
Critical Gap Module:																				
Critical Gp:	4.2	xxxx	xxxxx			4.2	xxxx	xxxxx		7.5	xxxx		6.9		7.5	xxxx		6.9		
FollowUpTim:	2.3	xxxx	xxxxx			2.3	xxxx	xxxxx		3.5	xxxx		3.3		3.5	xxxx		3.3		
Capacity Module:																				
Cnflict Vol:	619	xxxx	xxxxx			571	xxxx	xxxxx		938	xxxx		309		914	xxxx		286		
Potent Cap.:	937	xxxx	xxxxx			977	xxxx	xxxxx		219	xxxx		686		228	xxxx		711		
Move Cap.:	937	xxxx	xxxxx			977	xxxx	xxxxx		202	xxxx		686		214	xxxx		711		
Volume/Cap:	0.00	xxxx	xxxx			0.02	xxxx	xxxx		0.32	xxxx		0.05		0.05	xxxx		0.06		
Level Of Service Module:																				
Queue:	0.0	xxxx	xxxxx			0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx					
Stopped Del:	8.9	xxxx	xxxxx			8.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx		22.7	xxxx	xxxxx					
LOS by Move:	A	*	*			A	*	*		*	*		C	*	*					
Movement:	LT - LTR - RT					LT - LTR - RT				LT - LTR - RT					LT - LTR - RT					
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		xxxx	263	xxxxx		xxxx	xxxx		711			
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxxx	1.6	xxxxx	xxxxx	xxxx		0.2				
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxxx	26.5	xxxxx	xxxxx	xxxx		10.4				
Shared LOS:	*	*	*			*	*	*		*	D		*	*		B				
ApproachDel:	xxxxxx					xxxxxx					26.5					12.7				
ApproachLOS:	*					*					D					B				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.437
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 13.2
Optimal Cycle: 45 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ovl					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	2	1	0	0	1	0
Volume Module:																				
Base Vol:	457	270		7		9	99		23		24	52		504		4	34		19	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	457	270		7		9	99		23		24	52		504		4	34		19	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	508	300		8		10	110		26		27	58		560		4	38		21	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	508	300		8		10	110		26		27	58		560		4	38		21	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	508	300		8		10	110		26		27	58		560		4	38		21	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.95	0.95		0.95		0.95	0.92		0.92		0.95	1.00		0.75		0.95	0.95		0.95	
Lanes:	1.00	1.95		0.05		1.00	1.62		0.38		1.00	1.00		2.00		1.00	0.64		0.36	
Final Sat.:	1805	3505		91		1805	2847		662		1805	1900		2842		1805	1153		644	
Capacity Analysis Module:																				
Vol/Sat:	0.28	0.09		0.09		0.01	0.04		0.04		0.01	0.03		0.20		0.00	0.03		0.03	
Crit Moves:	****					****					****					****				
Green/Cycle:	0.64	0.69		0.69		0.04	0.09		0.09		0.03	0.10		0.74		0.01	0.07		0.07	
Volume/Cap:	0.44	0.12		0.12		0.12	0.44		0.44		0.44	0.30		0.26		0.30	0.44		0.44	
Delay/Veh:	9.1	5.4		5.4		46.6	44.2		44.2		52.3	42.6		4.2		60.6	46.5		46.5	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	9.1	5.4		5.4		46.6	44.2		44.2		52.3	42.6		4.2		60.6	46.5		46.5	
HCM2kAvg:	8	2		2		0	3		3		1	2		3		0	2		2	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.578
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 21.3
Optimal Cycle: 55 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	1!	0	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	12	3		8		235	3		97		77	761		9		13	648		223	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	12	3		8		235	3		97		77	761		9		13	648		223	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	13	3		9		261	3		108		86	846		10		14	720		248	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	13	3		9		261	3		108		86	846		10		14	720		248	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	13	3		9		261	3		108		86	846		10		14	720		248	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.93	0.93		0.93		0.95	0.86		0.86		0.95	0.95		0.95		0.95	0.91		0.91	
Lanes:	0.52	0.13		0.35		1.00	0.03		0.97		1.00	1.98		0.02		1.00	1.49		0.51	
Final Sat.:	921	230		614		1805	49		1576		1805	3561		42		1805	2584		889	
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.01		0.01		0.14	0.07		0.07		0.05	0.24		0.24		0.01	0.28		0.28	
Crit Moves:	****					****					****					****				
Green/Cycle:	0.03	0.03		0.03		0.25	0.25		0.25		0.08	0.55		0.55		0.02	0.48		0.48	
Volume/Cap:	0.58	0.58		0.58		0.58	0.27		0.27		0.58	0.43		0.43		0.43	0.58		0.58	
Delay/Veh:	65.8	65.8		65.8		34.7	30.5		30.5		49.8	13.7		13.7		57.4	19.1		19.1	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	65.8	65.8		65.8		34.7	30.5		30.5		49.8	13.7		13.7		57.4	19.1		19.1	
HCM2kAvg:	2	2		2		8	3		3		4	8		8		1	11		11	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: B[12.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Ignore				Ignore				Ignore				Include			
Lanes:	0	0	0	0 1	0	0	0	0 1	0	0	1	0 1	1	0	1	0 0
Volume Module:																
Base Vol:	0	0	593		0	0	275		0	865	159		188	875	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	593		0	0	275		0	865	159		188	875	0	
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90	0.90	
PHF Volume:	0	0	0		0	0	0		0	961	0		209	972	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	0		0	0	0		0	961	0		209	972	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				961	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				724	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				724	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				0.29	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				1.2	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				12.0	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*				B	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	*				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.504
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 9.5
Optimal Cycle: 32 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1!	0 1	0	0	0	0 0	0	0	2	0 1	0	0	2	0 1
Volume Module:																
Base Vol:	125	0	221		0	0	0		0	1219	239		0	938	663	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	125	0	221		0	0	0		0	1219	239		0	938	663	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.00		0.90	0.90	0.00	
PHF Volume:	139	0	246		0	0	0		0	1354	0		0	1042	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	139	0	246		0	0	0		0	1354	0		0	1042	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
Final Vol.:	139	0	246		0	0	0		0	1354	0		0	1042	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.89	1.00	0.89		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Lanes:	1.36	0.00	1.64		0.00	0.00	0.00		0.00	2.00	1.00		0.00	2.00	1.00	
Final Sat.:	2296	0	2764		0	0	0		0	3610	1900		0	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.06	0.00	0.09		0.00	0.00	0.00		0.00	0.38	0.00		0.00	0.29	0.00	
Crit Moves:			****							****			****			
Green/Cycle:	0.18	0.00	0.18		0.00	0.00	0.00		0.00	0.74	0.00		0.00	0.74	0.00	
Volume/Cap:	0.34	0.00	0.50		0.00	0.00	0.00		0.00	0.50	0.00		0.00	0.39	0.00	
Delay/Veh:	36.3	0.0	37.8		0.0	0.0	0.0		0.0	5.4	0.0		0.0	4.7	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	36.3	0.0	37.8		0.0	0.0	0.0		0.0	5.4	0.0		0.0	4.7	0.0	
HCM2kAvg:	3	0	5		0	0	0		0	9	0		0	6	0	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.838
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 37.7
Optimal Cycle: 96 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Ovl				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	1 0	1	0	1	0 1	2	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	377	322	52		134	100	546		537	755	148		56	678	266	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	377	322	52		134	100	546		537	755	148		56	678	266	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	419	358	58		149	111	607		597	839	164		62	753	296	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	419	358	58		149	111	607		597	839	164		62	753	296	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	419	358	58		149	111	607		597	839	164		62	753	296	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	0.98	0.98		0.95	1.00	0.85		0.92	0.95	0.85		0.95	0.95	0.85	
Lanes:	2.00	0.86	0.14		1.00	1.00	1.00		2.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	3502	1601	259		1805	1900	1615		3502	3610	1615		1805	3610	1615	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.22	0.22		0.08	0.06	0.38		0.17	0.23	0.10		0.03	0.21	0.18	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.14	0.28	0.28		0.10	0.24	0.45		0.20	0.39	0.54		0.06	0.25	0.35	
Volume/Cap:	0.84	0.79	0.79		0.79	0.24	0.84		0.84	0.59	0.19		0.59	0.84	0.52	
Delay/Veh:	53.6	40.9	40.9		63.3	30.5	32.9		46.9	24.6	12.1		54.4	42.6	26.4	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	53.6	40.9	40.9		63.3	30.5	32.9		46.9	24.6	12.1		54.4	42.6	26.4	
HCM2kAvg:	9	14	14		7	3	19		12	11	3		3	14	8	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 0.326
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 16.1
Optimal Cycle: 39 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	53		5		61	33		7		22	21		500		84	119		621		50
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
Initial Bse:	53		5		61	33		7		22	21		500		84	119		621		50
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90
PHF Volume:	59		6		68	37		8		24	23		556		93	132		690		56
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	59		6		68	37		8		24	23		556		93	132		690		56
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
Final Vol.:	59		6		68	37		8		24	23		556		93	132		690		56
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900	1900	1900	1900		1900	1900	1900	1900		1900	1900
Adjustment:	0.95	1.00		0.85		0.95	0.89		0.89	0.95	0.95	0.85		0.92	0.94	0.94	0.94		0.92	0.94
Lanes:	1.00	1.00		1.00		1.00	0.24		0.76	1.00	2.00	1.00		2.00	1.85	0.15	3.00		1.00	0.15
Final Sat.:	1805	1900		1615		1805	406		1277	1805	3610	1615		3502	3304	266	5700		1900	266
Capacity Analysis Module:																				
Vol/Sat:	0.03	0.00		0.04		0.02	0.02		0.02	0.01	0.15		0.06		0.04	0.21		0.21		0.21
Crit Moves:	****						****			****					****					
Green/Cycle:	0.10	0.03		0.16		0.13	0.06		0.06	0.04	0.55		0.65		0.13	0.64		0.64		0.64
Volume/Cap:	0.33	0.11		0.26		0.15	0.33		0.33	0.33	0.28		0.09		0.28	0.33		0.33		0.33
Delay/Veh:	42.9	48.4		37.2		38.8	47.1		47.1	49.4	12.2		6.6		39.3	8.2		8.2		8.2
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	42.9	48.4		37.2		38.8	47.1		47.1	49.4	12.2		6.6		39.3	8.2		8.2		8.2
HCM2kAvg:	2		0		2	1		1		1	5		1		2	5		5		5

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.520
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 23.6
Optimal Cycle: 33 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Ovl					Ignore				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	0	0	1!	0	0	1	1	0	0	2	0	0	2	0	1	2	0	2	0	0
Volume Module:																				
Base Vol:	0		0		0	674		0		189	0		547		47	326		601		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
Initial Bse:	0		0		0	674		0		189	0		547		47	326		601		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.00
PHF Volume:	0		0		0	749		0		210	0		608		52	362		668		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	0		0		0	749		0		210	0		608		52	362		668		0
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	0.00
Final Vol.:	0		0		0	749		0		210	0		608		52	362		668		0
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900	1900	1900	1900		1900	1900	1900	1900		1900	1900
Adjustment:	1.00	1.00		1.00		0.95	1.00		0.75	1.00	0.95	0.85		0.92	0.95	1.00	1.00		0.95	1.00
Lanes:	0.00	1.00		0.00		2.00	0.00		2.00	0.00	2.00	1.00		2.00	2.00	0.00	0.00		2.00	0.00
Final Sat.:	0	1900		0		3618	0		2842	0	3610	1615		3502	3610	0	0		3610	0
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00		0.00		0.21	0.00		0.07	0.00	0.17		0.03		0.10	0.18		0.00		
Crit Moves:						****					****				****					
Green/Cycle:	0.00	0.00		0.00		0.40	0.00		0.40	0.00	0.32		0.32		0.20	0.52		0.00		
Volume/Cap:	0.00	0.00		0.00		0.52	0.00		0.19	0.00	0.52		0.10		0.52	0.35		0.00		
Delay/Veh:	0.0	0.0		0.0		23.2	0.0		19.7	0.0	27.9		23.7		36.5	14.1		0.0		
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
AdjDel/Veh:	0.0	0.0		0.0		23.2	0.0		19.7	0.0	27.9		23.7		36.5	14.1		0.0		
HCM2kAvg:	0		0		0	9		0		2	0		8		1	6		6		0

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.622
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 15.8
Optimal Cycle: 40 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ovl					Ovl				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	1	1	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	2	0	1
Volume Module:																				
Base Vol:	65		0		231	0		0		0	173	1048		0		0	862		521	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
Initial Bse:	65		0		231	0		0		0	173	1048		0		0	862		521	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90
PHF Volume:	72		0		257	0		0		0	192	1164		0		0	958		579	
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0		0	
Reduced Vol:	72		0		257	0		0		0	192	1164		0		0	958		579	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		0.00		1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		0.00		1.00	1.00		1.00	1.00
Final Vol.:	72		0		257	0		0		0	192	1164		0		0	958		579	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900	1900	1900	1900		1900	1900	1900	1900		1900	1900
Adjustment:	0.95	1.00		0.85		1.00	1.00		1.00	0.92	0.95	1.00		1.00	0.95	0.85	1.00		0.95	0.85
Lanes:	2.00	0.00		1.00		0.00	0.00		0.00	2.00	2.00	0.00		0.00	2.00	1.00	0.00		2.00	1.00
Final Sat.:	3618		0		1615	0		0		0	3502	3610		0		0	3610		1615	
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.00		0.16		0.00	0.00		0.00	0.05	0.32		0.00		0.00	0.27		0.36		
Crit Moves:				****						****								****		
Green/Cycle:	0.26	0.00		0.26		0.00	0.00		0.00	0.09	0.66		0.00		0.00	0.58		0.58		
Volume/Cap:	0.08	0.00		0.62		0.00	0.00		0.00	0.62	0.49		0.00		0.00	0.46		0.62		
Delay/Veh:	28.3	0.0		35.9		0.0	0.0		0.0	47.9	8.5		0.0		0.0	12.4		15.3		
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00		1.00		1.00	1.00		1.00		
AdjDel/Veh:	28.3	0.0		35.9		0.0	0.0		0.0	47.9	8.5		0.0		0.0	12.4		15.3		
HCM2kAvg:	1		0		8	0		0		0	4		9		0	0		9		12

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[10.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	2	0	0
Volume Module:																				
Base Vol:	0		0		38	0		0		0	0	1060		219		0	1383		0	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
Initial Bse:	0		0		38	0		0		0	0	1060		219		0	1383		0	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90
PHF Volume:	0		0		42	0		0		0	0	1178		243		0	1537		0	
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0		0	
Final Vol.:	0		0		42	0		0		0	0	1178		243		0	1537		0	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
FollowUpTim:	xxxxx	xxxx		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		294	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
Potent Cap.:	xxxx	xxxx		708	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
Move Cap.:	xxxx	xxxx		708	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
Volume/Cap:	xxxx	xxxx		0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx							
Level Of Service Module:																				
Queue:	xxxxx	xxxx		0.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
Stopped Del:	xxxxx	xxxx		10.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
LOS by Move:	*		*		B	*		*		*	*		*		*	*		*		*
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*		*		*	*		*		*	*		*		*	*		*		*
ApproachDel:	10.4					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	B					*					*					*				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.611
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 15.0
Optimal Cycle: 58 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1! 0 0			0 1 0 0 2			2 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	110	5	9	37	2	78	110	970	18	24	1195	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	110	5	9	37	2	78	110	970	18	24	1195	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	122	6	10	41	2	87	122	1078	20	27	1328	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	6	10	41	2	87	122	1078	20	27	1328	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	122	6	10	41	2	87	122	1078	20	27	1328	48
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.94	0.94	0.73	0.88	0.90	0.90	0.90	0.90	0.90
Lanes:	1.80	0.07	0.13	0.95	0.05	2.00	2.00	1.96	0.04	1.00	1.93	0.07
Final Sat.:	3170	128	230	1687	91	2786	3334	3364	62	1718	3301	119
Capacity Analysis Module:												
Vol/Sat:	0.04	0.04	0.04	0.02	0.02	0.03	0.04	0.32	0.32	0.02	0.40	0.40
Crit Moves:			****			****	****				****	
Green/Cycle:	0.07	0.07	0.07	0.05	0.05	0.05	0.06	0.68	0.68	0.03	0.66	0.66
Volume/Cap:	0.54	0.61	0.61	0.48	0.48	0.61	0.61	0.47	0.47	0.47	0.61	0.61
Delay/Veh:	47.3	50.0	50.0	50.1	50.1	54.1	51.3	7.5	7.5	53.4	10.3	10.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	47.3	50.0	50.0	50.1	50.1	54.1	51.3	7.5	7.5	53.4	10.3	10.3
HCM2kAvg:	3	3	3	2	2	2	3	8	8	2	12	12

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2010 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.761
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 37.0
Optimal Cycle: 79 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 1 0			1 0 1 1 0			1 0 2 0 1		
Volume Module:												
Base Vol:	217	139	11	113	288	226	175	394	333	81	642	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	217	139	11	113	288	226	175	394	333	81	642	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	241	154	12	126	320	251	194	438	370	90	713	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	241	154	12	126	320	251	194	438	370	90	713	183
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	241	154	12	126	320	251	194	438	370	90	713	183
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.81	0.90	0.84	0.84	0.90	0.84	0.84	0.90	0.90	0.81
Lanes:	1.00	2.00	1.00	1.00	1.12	0.88	1.00	1.08	0.92	1.00	2.00	1.00
Final Sat.:	1718	3437	1537	1718	1799	1411	1718	1734	1466	1718	3437	1537
Capacity Analysis Module:												
Vol/Sat:	0.14	0.04	0.01	0.07	0.18	0.18	0.11	0.25	0.25	0.05	0.21	0.12
Crit Moves:	****				****		****				****	
Green/Cycle:	0.18	0.16	0.23	0.26	0.23	0.23	0.15	0.35	0.35	0.07	0.27	0.53
Volume/Cap:	0.76	0.28	0.03	0.28	0.76	0.76	0.76	0.72	0.72	0.72	0.76	0.22
Delay/Veh:	49.0	37.3	29.8	30.0	40.3	40.3	53.4	30.7	30.7	64.2	37.0	12.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.0	37.3	29.8	30.0	40.3	40.3	53.4	30.7	30.7	64.2	37.0	12.6
HCM2kAvg:	9	2	0	3	10	10	8	12	12	4	12	3

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2010 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: B[12.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	1	28	85	44	167	8	9	2	9	50	11	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	28	85	44	167	8	9	2	9	50	11	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	1	31	94	49	186	9	10	2	10	56	12	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	1	31	94	49	186	9	10	2	10	56	12	1
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	194	xxxx	xxxxx	126	xxxx	xxxxx	375	416	190	374	373	78
Potent Cap.:	1391	xxxx	xxxxx	1473	xxxx	xxxxx	586	531	857	586	561	988
Move Cap.:	1391	xxxx	xxxxx	1473	xxxx	xxxxx	560	512	857	562	541	988
Volume/Cap:	0.00	xxxx	xxxx	0.03	xxxx	xxxx	0.02	0.00	0.01	0.10	0.02	0.00
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.6	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	656	xxxxx	xxxx	562	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.4	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.7	xxxxx	xxxxx	12.3	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:		xxxxxx			xxxxxx			10.7			12.3	
ApproachLOS:		*			*			B			B	

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 5.3 Worst Case Level Of Service: A[9.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	22	6	105	54	0	0	0	0	7	0	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	22	6	105	54	0	0	0	0	7	0	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	24	7	117	60	0	0	0	0	8	0	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	24	7	117	60	0	0	0	0	8	0	53
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	31	xxxx	xxxxx	xxxx	xxxx	xxxxx	321	xxxx	28
Potent Cap.:	xxxx	xxxx	xxxxx	1594	xxxx	xxxxx	xxxx	xxxx	xxxxx	677	xxxx	1053
Move Cap.:	xxxx	xxxx	xxxxx	1594	xxxx	xxxxx	xxxx	xxxx	xxxxx	636	xxxx	1053
Volume/Cap:	xxxx	xxxx	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	0.05
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	972	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.0	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	A	*
ApproachDel:		xxxxxx			xxxxxx			xxxxxx			9.0	
ApproachLOS:		*			*			*			A	

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2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A[9.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
Volume Module:																				
Base Vol:	3	0	0	0	0	0	0	0	0	110	1	0	1	52	0					
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
Initial Bse:	3	0	0	0	0	0	0	0	0	110	1	0	1	52	0					
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00					
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90					
PHF Volume:	3	0	0	0	0	0	0	0	0	122	1	0	1	58	0					
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
Final Vol.:	3	0	0	0	0	0	0	0	0	122	1	0	1	58	0					
Critical Gap Module:																				
Critical Gp:	6.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx							
FollowUpTim:	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	183	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		123	xxxx	xxxxx							
Potent Cap.:	807	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1464	xxxx	xxxxx							
Move Cap.:	806	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1464	xxxx	xxxxx							
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.00	xxxx	xxxx							
Level Of Service Module:																				
Queue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx							
Stopped Del:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx							
LOS by Move:	A	*	*	*	*	*	*	*	*	*	A	*	*							
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx							
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx							
Shared LOS:	*	*	*	*	*	*	*	*	*	*	A	*	*							
ApproachDel:	9.5					xxxxxx					xxxxxx									
ApproachLOS:	A					*					*									

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 1.7 Worst Case Level Of Service: A[9.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0
Volume Module:																				
Base Vol:	25	0	10			0	0	0			0	126	38			15	51	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	25	0	10			0	0	0			0	126	38			15	51	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	28	0	11			0	0	0			0	140	42			17	57	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Final Vol.:	28	0	11			0	0	0			0	140	42			17	57	0		
Critical Gap Module:																				
Critical Gp:	6.4	xxxx				6.2	xxxxx	xxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx						
FollowUpTim:	3.5	xxxx				3.3	xxxxx	xxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	251	xxxx				161	xxxx	xxxx	xxxxx	xxxx	xxxxx	182	xxxx	xxxxx						
Potent Cap.:	737	xxxx				884	xxxx	xxxx	xxxxx	xxxx	xxxxx	1393	xxxx	xxxxx						
Move Cap.:	731	xxxx				884	xxxx	xxxx	xxxxx	xxxx	xxxxx	1393	xxxx	xxxxx						
Volume/Cap:	0.04	xxxx				0.01	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	xxxx						
Level Of Service Module:																				
Queue:	0.1	xxxx				0.0	xxxxx	xxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx						
Stopped Del:	10.1	xxxx				9.1	xxxxx	xxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx						
LOS by Move:	B	*				A	*	*	*	*	*	A	*	*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			0.0	xxxx	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			7.6	xxxx	xxxxx		
Shared LOS:	*	*	*			*	*	*			*	*	*			A	*	*		
ApproachDel:	9.8					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	A					*					*					*				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 3.9 Worst Case Level Of Service: B[10.7]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	0	1	0	1	0	0	1	0
Volume Module:																				
Base Vol:	6	0	55			5	0		5		1	127	8			85	55	2		
Growth Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	6	0	55			5	0		5		1	127	8			85	55	2		
User Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90		0.90		0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	7	0	61			6	0		6		1	141	9			94	61	2		
Reduct Vol:	0	0	0			0	0		0		0	0	0			0	0	0		
Final Vol.:	7	0	61			6	0		6		1	141	9			94	61	2		
Critical Gap Module:																				
Critical Gp:	7.1	xxxx		6.2		7.1	xxxx		6.2		4.1	xxxx	xxxxx			4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx		3.3		3.5	xxxx		3.3		2.2	xxxx	xxxxx			2.2	xxxx	xxxxx		
Capacity Module:																				
Cnflict Vol:	402	xxxx		146		429	xxxx		62		63	xxxx	xxxxx			150	xxxx	xxxxx		
Potent Cap.:	563	xxxx		907		539	xxxx		1008		1539	xxxx	xxxxx			1431	xxxx	xxxxx		
Move Cap.:	531	xxxx		907		477	xxxx		1008		1539	xxxx	xxxxx			1431	xxxx	xxxxx		
Volume/Cap:	0.01	xxxx		0.07		0.01	xxxx		0.01		0.00	xxxx	xxxx			0.07	xxxx	xxxx		
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					0.0	xxxx	xxxxx			0.2	xxxx	xxxxx		
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx					7.3	xxxx	xxxxx			7.7	xxxx	xxxxx		
LOS by Move:	*	*	*	*	*	*					A	*	*			A	*	*		
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	848	xxxxx	xxxx		648	xxxxx		xxxx	xxxx	xxxxx					xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	0.3	xxxxx	xxxxx		0.1	xxxxx		xxxxx	xxxx	xxxxx					xxxxx	xxxx	xxxxx		
Shrd StpDel:	xxxxx	9.6	xxxxx	xxxxx		10.7	xxxxx		xxxxx	xxxx	xxxxx					xxxxx	xxxx	xxxxx		
Shared LOS:	*	A	*	*		B	*		*	*	*					*	*	*		
ApproachDel:	9.6					10.7					xxxxxx					xxxxxx				
ApproachLOS:	A					B					*					*				

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.338
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 24.5
Optimal Cycle: 40 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0		0		0	0				0	0	0		
Lanes:	1	0	1	1	0	1	0	2	0	1	2	0	0	1	0	1	0	0	1	0
Volume Module:																				
Base Vol:	71	203	12			50	472		63		77	16		94		16	8	34		
Growth Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00		
Initial Bse:	71	203	12			50	472		63		77	16		94		16	8	34		
User Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90	0.90		
PHF Volume:	79	226	13			56	524		70		86	18		104		18	9	38		
Reduct Vol:	0	0	0			0	0		0		0	0		0		0	0	0		
Reduced Vol:	79	226	13			56	524		70		86	18		104		18	9	38		
PCE Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00		
Final Vol.:	79	226	13			56	524		70		86	18		104		18	9	38		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900		1900		1900	1900		1900		1900	1900	1900		
Adjustment:	0.90	0.90	0.90			0.90	0.90		0.81		0.90	0.85		0.85		0.93	0.86	0.86		
Lanes:	1.00	1.89	0.11			1.00	2.00		1.00		2.00	0.15		0.85		1.00	0.19	0.81		
Final Sat.:	1718	3219	190			1718	3437		1537		3432	236		1387		1769	312	1325		
Capacity Analysis Module:																				
Vol/Sat:	0.05	0.07	0.07			0.03	0.15		0.05		0.02	0.08		0.08		0.01	0.03	0.03		
Crit Moves:	****						****					****				****				
Green/Cycle:	0.14	0.40	0.40			0.19	0.45		0.45		0.12	0.22		0.22		0.03	0.13	0.13		
Volume/Cap:	0.34	0.17	0.17			0.17	0.34		0.10		0.21	0.34		0.34		0.34	0.21	0.21		
Delay/Veh:	40.0	19.3	19.3			34.5	17.9		15.8		40.2	33.2		33.2		51.3	39.0	39.0		
User DelAdj:	1.00	1.00	1.00			1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00		
AdjDel/Veh:	40.0	19.3	19.3			34.5	17.9		15.8		40.2	33.2		33.2		51.3	39.0	39.0		
HCM2kAvg:	3	2	2			2	5		1		1	3		3		1	1	1		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[10.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	286		0		0	579		3		0		0		25		0		0	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	0	286		0		0	579		3		0		0		25		0		0	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90		0.90		0.90		0.90	
PHF Volume:	0	318		0		0	643		3		0		0		28		0		0	
Reduct Vol:	0	0		0		0	0		0		0		0		0		0		0	
Final Vol.:	0	318		0		0	643		3		0		0		28		0		0	
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			6.9	xxxxx	xxxx	xxxxx						
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			3.3	xxxxx	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			323	xxxx	xxxx	xxxxx						
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			678	xxxx	xxxx	xxxxx						
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			678	xxxx	xxxx	xxxxx						
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			0.04	xxxx	xxxx	xxxx						
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			0.1	xxxxx	xxxx	xxxxx						
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			10.5	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*	*	*	*	*	*	*			B	*	*	*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			xxxx	xxxx	xxxxx	xxxx						
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			xxxxx	xxxx	xxxxx	xxxx						
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			xxxxx	xxxx	xxxxx	xxxx						
Shared LOS:	*	*	*	*	*	*	*	*			*	*	*	*						
ApproachDel:	xxxxxx					xxxxxx					10.5					xxxxxx				
ApproachLOS:	*					*					B					*				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: C[18.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	1	0	0	1	0
Volume Module:																				
Base Vol:	56	244		38		84	450		70		12		1		18		20		0	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	56	244		38		84	450		70		12		1		18		20		0	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90		0.90		0.90		0.90	
PHF Volume:	62	271		42		93	500		78		13		1		20		22		0	
Reduct Vol:	0	0		0		0	0		0		0		0		0		0		0	
Final Vol.:	62	271		42		93	500		78		13		1		20		22		0	
Critical Gap Module:																				
Critical Gp:	4.2	xxxx	xxxxx			4.2	xxxx	xxxxx			7.5	6.5			6.9		7.5	xxxx		
FollowUpTim:	2.3	xxxx	xxxxx			2.3	xxxx	xxxxx			3.5	4.0			3.3		3.5	xxxx		
Capacity Module:																				
Cnflict Vol:	578	xxxx	xxxxx			313	xxxx	xxxxx			986	1163			289		854	xxxx		
Potent Cap.:	971	xxxx	xxxxx			1222	xxxx	xxxxx			202	193			708		252	xxxx		
Move Cap.:	971	xxxx	xxxxx			1222	xxxx	xxxxx			174	167			708		219	xxxx		
Volume/Cap:	0.06	xxxx	xxxx			0.08	xxxx	xxxx			0.08	0.01			0.03		0.10	xxxx		
Level Of Service Module:																				
Queue:	0.2	xxxx	xxxxx			0.2	xxxx	xxxxx			xxxxx	xxxx			0.3		xxxxx	xxxxx		
Stopped Del:	9.0	xxxx	xxxxx			8.2	xxxx	xxxxx			xxxxx	xxxx			23.3		xxxxx	xxxxx		
LOS by Move:	A	*	*			A	*	*			*	*			C		*	*		
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	309			xxxx		xxxx	xxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	0.4			xxxxx		xxxxx	xxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	18.1			xxxxx		xxxxx	xxxx		
Shared LOS:	*	*	*			*	*	*			*	C			*		*	*		
ApproachDel:	xxxxxx					xxxxxx					18.1					14.9				
ApproachLOS:	*					*					C					B				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.331
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 19.5
Optimal Cycle: 39 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ovl					Include				
Min. Green:	0	0		0		0	0		0		0	0		0		0	0		0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	2	1	0	0	1	0
Volume Module:																				
Base Vol:	277	127		22		11	181		22		7	29		225		5	52		14	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	277	127		22		11	181		22		7	29		225		5	52		14	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	308	141		24		12	201		24		8	32		250		6	58		16	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	308	141		24		12	201		24		8	32		250		6	58		16	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	308	141		24		12	201		24		8	32		250		6	58		16	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.95	0.93		0.93		0.95	0.93		0.93		0.95	1.00		0.75		0.95	0.97		0.97	
Lanes:	1.00	1.70		0.30		1.00	1.78		0.22		1.00	1.00		2.00		1.00	0.79		0.21	
Final Sat.:	1805	3009		521		1805	3167		385		1805	1900		2842		1805	1449		390	
Capacity Analysis Module:																				
Vol/Sat:	0.17	0.05		0.05		0.01	0.06		0.06		0.00	0.02		0.09		0.00	0.04		0.04	
Crit Moves:	****						****				****						****			
Green/Cycle:	0.51	0.62		0.62		0.09	0.19		0.19		0.01	0.11		0.63		0.02	0.12		0.12	
Volume/Cap:	0.33	0.08		0.08		0.08	0.33		0.33		0.15	0.14		0.15		0.33	0.33		0.33	
Delay/Veh:	14.4	7.7		7.7		42.0	35.2		35.2		57.0	40.4		7.6		50.0	41.2		41.2	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	14.4	7.7		7.7		42.0	35.2		35.2		57.0	40.4		7.6		50.0	41.2		41.2	
HCM2kAvg:	6	1		1		0	3		3		1	1		2		0	2		2	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.460
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 46 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0		0		0	0		0		0	0		0		0	0		0	
Lanes:	0	0	1!	0	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	4	0		10		46	3		31		38	836		5		8	960		86	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	4	0		10		46	3		31		38	836		5		8	960		86	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	4	0		11		51	3		34		42	929		6		9	1067		96	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	4	0		11		51	3		34		42	929		6		9	1067		96	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	4	0		11		51	3		34		42	929		6		9	1067		96	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.89	1.00		0.89		0.95	0.86		0.86		0.95	0.95		0.95		0.95	0.94		0.94	
Lanes:	0.29	0.00		0.71		1.00	0.09		0.91		1.00	1.99		0.01		1.00	1.84		0.16	
Final Sat.:	484	0		1210		1805	145		1495		1805	3585		21		1805	3273		293	
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.00		0.01		0.03	0.02		0.02		0.02	0.26		0.26		0.00	0.33		0.33	
Crit Moves:				****		****					****						****			
Green/Cycle:	0.02	0.00		0.02		0.06	0.06		0.06		0.05	0.74		0.74		0.01	0.71		0.71	
Volume/Cap:	0.46	0.00		0.46		0.46	0.37		0.37		0.46	0.35		0.35		0.35	0.46		0.46	
Delay/Veh:	58.1	0.0		58.1		48.3	47.4		47.4		49.8	4.5		4.5		56.9	6.5		6.5	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	58.1	0.0		58.1		48.3	47.4		47.4		49.8	4.5		4.5		56.9	6.5		6.5	
HCM2kAvg:	1	0		1		2	2		2		2	5		5		1	8		8	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

```
*******************************************************************************
Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps
*******************************************************************************
Average Delay (sec/veh):      1.4   Worst Case Level Of Service:      B[ 10.8]
*******************************************************************************
Approach:      North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign         Stop Sign       Uncontrolled     Uncontrolled
Rights:           Ignore            Ignore           Ignore           Ignore
Lanes:        0  0  0  0  1     2  0  0  0  1     0  0  1  0  1     1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0   756     0     0   476     0   697   242   210   716     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0   756     0     0   476     0   697   242   210   716     0
User Adj:    1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00  1.00  1.00  0.00
PHF Adj:     0.90  0.90  0.00  0.90  0.90  0.00  0.90  0.90  0.00  0.90  0.90  0.00
PHF Volume:     0     0     0     0     0     0     0   774     0   233   796     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:     0     0     0     0     0     0     0   774     0   233   796     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   774 xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   850 xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   850 xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.27 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:       xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.1 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  10.8 xxxx xxxxx
LOS by Move:   *     *     *     *     *     *     *     *     *     B     *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *     *     *     *     *     *     *     *     *     *     *     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        *                *                *                *
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

```
*******************************************************************************
Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps
*******************************************************************************
Cycle (sec):        100                 Critical Vol./Cap. (X):        0.501
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):        10.8
Optimal Cycle:       32                 Level Of Service:                 B
*******************************************************************************
Approach:      North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase       Split Phase       Permitted        Permitted
Rights:         Include           Include           Ignore           Ignore
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        1  0  1! 0  1     0  0  0  0  0     0  0  2  0  1     0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     146     0   246     0     0     0     0  1174   279     0   780   995
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  146     0   246     0     0     0     0  1174   279     0   780   995
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  0.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.00  0.90  0.90  0.00
PHF Volume:   162     0   273     0     0     0     0  1304     0     0   867     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  162     0   273     0     0     0     0  1304     0     0   867     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  0.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  0.00
Final Vol.:   162     0   273     0     0     0     0  1304     0     0   867     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.89  1.00  0.89  1.00  1.00  1.00  1.00  0.95  1.00  1.00  0.95  1.00
Lanes:       1.37  0.00  1.63  0.00  0.00  0.00  0.00  2.00  1.00  0.00  2.00  1.00
Final Sat.:  2320     0  2751     0     0     0     0  3610  1900     0  3610  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07  0.00  0.10  0.00  0.00  0.00  0.00  0.36  0.00  0.00  0.24  0.00
Crit Moves:                ****                                ****
Green/Cycle: 0.20  0.00  0.20  0.00  0.00  0.00  0.00  0.72  0.00  0.00  0.72  0.00
Volume/Cap:  0.35  0.00  0.50  0.00  0.00  0.00  0.00  0.50  0.00  0.00  0.33  0.00
Delay/Veh:   34.7   0.0  36.1   0.0   0.0   0.0   0.0   6.2   0.0   0.0   5.2   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  34.7   0.0  36.1   0.0   0.0   0.0   0.0   6.2   0.0   0.0   5.2   0.0
HCM2kAvg:       3     0     5     0     0     0     0     9     0     0     5     0
*******************************************************************************
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

```
*******************************************************************************
Intersection #19 Skyway / Notre Dame Boulevard
*******************************************************************************
Cycle (sec):        100                 Critical Vol./Cap. (X):        0.774
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):        29.1
Optimal Cycle:       81                 Level Of Service:                 C
*******************************************************************************
Approach:      North Bound       South Bound       East Bound       West Bound
Movement:     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R     L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Protected         Protected         Protected         Protected
Rights:         Include           Ovl               Ovl               Ovl
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Lanes:        2  0  0  1  0     1  0  1  0  1     2  0  2  0  1     1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     259    55    35   149    66   266   353   720   347    92  1250   109
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  259    55    35   149    66   266   353   720   347    92  1250   109
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:   288    61    39   166    73   296   392   800   386   102  1389   121
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  288    61    39   166    73   296   392   800   386   102  1389   121
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   288    61    39   166    73   296   392   800   386   102  1389   121
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.92  0.94  0.94  0.95  1.00  0.85  0.92  0.95  0.85  0.95  0.95  0.85
Lanes:       2.00  0.61  0.39  1.00  1.00  1.00  2.00  2.00  1.00  1.00  2.00  1.00
Final Sat.:  3502  1094   696  1805  1900  1615  3502  3610  1615  1805  3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08  0.06  0.06  0.09  0.04  0.18  0.11  0.22  0.24  0.06  0.38  0.07
Crit Moves:  ****                            ****  ****                  ****
Green/Cycle: 0.11  0.07  0.07  0.12  0.09  0.24  0.14  0.51  0.62  0.13  0.50  0.62
Volume/Cap:  0.77  0.75  0.75  0.75  0.42  0.77  0.77  0.43  0.39  0.43  0.77  0.12
Delay/Veh:   53.2  65.5  65.5  55.2  44.5  45.2  48.5  15.5   9.9  41.3  22.7   7.8
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  53.2  65.5  65.5  55.2  44.5  45.2  48.5  15.5   9.9  41.3  22.7   7.8
HCM2kAvg:       6     5     5     7     3    10     8     8     6     3    19     2
*******************************************************************************
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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 0.872
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 30.8
Optimal Cycle: 106 Level Of Service: C

Approach:		North Bound			South Bound			East Bound			West Bound	
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Protected			Protected			Protected			Protected	
Rights:		Ovl			Include			Ovl			Include	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		1 0 1 0 1			1 0 0 1 0			1 0 2 0 1			2 0 1 1 0	
Volume Module:												
Base Vol:	230	12	475	31	11	15	28	1255	275	496	1019	70
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	230	12	475	31	11	15	28	1255	275	496	1019	70
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	256	13	528	34	12	17	31	1394	306	551	1132	78
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	256	13	528	34	12	17	31	1394	306	551	1132	78
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	256	13	528	34	12	17	31	1394	306	551	1132	78
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.95	0.91	0.91	0.95	0.95	0.85	0.92	0.94	0.94
Lanes:	1.00	1.00	1.00	1.00	0.42	0.58	1.00	2.00	1.00	2.00	1.87	0.13
Final Sat.:	1805	1900	1615	1805	734	1001	1805	3610	1615	3502	3344	230
Capacity Analysis Module:												
Vol/Sat:	0.14	0.01	0.33	0.02	0.02	0.02	0.02	0.39	0.19	0.16	0.34	0.34
Crit Moves:			****	****				****		****		
Green/Cycle:	0.19	0.19	0.37	0.02	0.02	0.02	0.03	0.44	0.64	0.18	0.59	0.59
Volume/Cap:	0.73	0.04	0.87	0.87	0.73	0.73	0.57	0.87	0.30	0.87	0.57	0.57
Delay/Veh:	45.6	32.7	42.1	142.5	99.6	99.6	61.5	30.8	8.3	52.5	12.9	12.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.6	32.7	42.1	142.5	99.6	99.6	61.5	30.8	8.3	52.5	12.9	12.9
HCM2kAvg:	9	0	18	3	2	2	2	22	4	12	12	12

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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.156
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 80.3
Optimal Cycle: 180 Level Of Service: F

Approach:		North Bound			South Bound			East Bound			West Bound	
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Split Phase			Split Phase			Protected			Protected	
Rights:		Include			Include			Ovl			Ignore	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		0 0 1! 0 0			1 1 0 0 2			0 0 2 0 1			2 0 2 0 0	
Volume Module:												
Base Vol:	0	0	0	1248	3	550	0	1631	130	413	1035	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1248	3	550	0	1631	130	413	1035	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00
PHF Volume:	0	0	0	1387	3	611	0	1812	144	459	1150	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1387	3	611	0	1812	144	459	1150	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	0	1387	3	611	0	1812	144	459	1150	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	0.85	0.75	1.00	0.95	0.85	0.92	0.95	1.00
Lanes:	0.00	1.00	0.00	1.99	0.01	2.00	0.00	2.00	1.00	2.00	2.00	0.00
Final Sat.:	0	1900	0	3222	8	2842	0	3610	1615	3502	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.43	0.43	0.21	0.00	0.50	0.09	0.13	0.32	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.37	0.00	0.43	0.43	0.11	0.55	0.00
Volume/Cap:	0.00	0.00	0.00	1.16	1.16	0.58	0.00	1.16	0.21	1.16	0.58	0.00
Delay/Veh:	0.0	0.0	0.0	111.3	111	25.9	0.0	106	17.7	139.3	15.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	111.3	111	25.9	0.0	106	17.7	139.3	15.5	0.0
HCM2kAvg:	0	0	0	42	42	8	0	46	3	15	12	0

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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.336
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 100.5
Optimal Cycle: 180 Level Of Service: F

Approach:		North Bound			South Bound			East Bound			West Bound	
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Split Phase			Split Phase			Protected			Protected	
Rights:		Ovl			Include			Ignore			Ovl	
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:		1 1 0 0 1			0 0 0 0 0			2 0 2 0 0			0 0 2 0 1	
Volume Module:												
Base Vol:	146	5	497	0	0	0	508	2371	0	0	1302	1055
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	146	5	497	0	0	0	508	2371	0	0	1302	1055
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90
PHF Volume:	162	6	552	0	0	0	564	2634	0	0	1447	1172
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	6	552	0	0	0	564	2634	0	0	1447	1172
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	162	6	552	0	0	0	564	2634	0	0	1447	1172
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.85	0.85	0.85	1.00	1.00	1.00	0.92	0.95	1.00	1.00	0.95	0.85
Lanes:	1.93	0.07	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	3123	107	1615	0	0	0	3502	3610	0	0	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.05	0.05	0.34	0.00	0.00	0.00	0.16	0.73	0.00	0.00	0.40	0.73
Crit Moves:			****				****					****
Green/Cycle:	0.26	0.26	0.26	0.00	0.00	0.00	0.12	0.66	0.00	0.00	0.54	0.54
Volume/Cap:	0.20	0.20	1.34	0.00	0.00	0.00	1.34	1.10	0.00	0.00	0.74	1.34
Delay/Veh:	29.3	29.3	204.0	0.0	0.0	0.0	210.5	68.5	0.0	0.0	18.9	181.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	29.3	29.3	204.0	0.0	0.0	0.0	210.5	68.5	0.0	0.0	18.9	181.7
HCM2kAvg:	2	2	36	0	0	0	21	59	0	0	18	73

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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[16.0]

Approach:		North Bound			South Bound			East Bound			West Bound	
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:		Stop Sign			Stop Sign			Uncontrolled			Uncontrolled	
Rights:		Include			Include			Include			Include	
Lanes:		0 0 0 0 1			0 0 0 0 0			0 0 4 0 1			0 0 2 0 0	
Volume Module:												
Base Vol:	0	0	79	0	0	0	0	2349	519	0	2357	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	79	0	0	0	0	2349	519	0	2357	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	88	0	0	0	0	2610	577	0	2619	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	88	0	0	0	0	2610	577	0	2619	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	653	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	415	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	415	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.21	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	0.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	16.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	C	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:		16.0			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

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              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2010 No Project PM Peak Hour Conditions
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #5 E. 20th Street / Chico Mall Access
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap. (X):        1.263
Loss Time (sec):      16 (Y+R =  4 sec) Average Delay (sec/veh):       133.3
Optimal Cycle:       180                 Level Of Service:                  F
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1! 0  0   0  1  0  0  2   2  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     394   41    32   129   42   402   570 1701   157    93 1561    97
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  394   41    32   129   42   402   570 1701   157    93 1561    97
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   438   46    36   143   47   447   633 1890   174   103 1734   108
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  438   46    36   143   47   447   633 1890   174   103 1734   108
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   438   46    36   143   47   447   633 1890   174   103 1734   108
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.93  0.93  0.94 0.94  0.73  0.88 0.89  0.89  0.90 0.90  0.90
Lanes:       1.73 0.15  0.12  0.75 0.25  2.00  2.00 1.83  0.17  1.00 1.88  0.12
Final Sat.:  3061  269   210  1354  441  2786  3334 3105   287  1718 3207   199
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.17  0.17  0.11 0.11  0.16  0.19 0.61  0.61  0.06 0.54  0.54
Crit Moves:             ****              **** ****                  ****
Green/Cycle: 0.13 0.13  0.13  0.13 0.13  0.13  0.15 0.53  0.53  0.05 0.43  0.43
Volume/Cap:  1.07 1.26  1.26  0.83 0.83  1.26  1.26 1.16  1.16  1.16 1.26  1.26
Delay/Veh:  102.6  180 179.8  65.0 65.0 182.7 176.0  100 100.4 190.5  153 152.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 102.6  180 179.8  65.0 65.0 182.7 176.0  100 100.4 190.5  153 152.5
HCM2kAvg:      14   20    20     8    8    15    21   52    52     8   54    54
********************************************************************************
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              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2010 No Project PM Peak Hour Conditions
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                       Level Of Service Computation Report
             2000 HCM Operations Method (Base Volume Alternative)
********************************************************************************
Intersection #6 E. 20th Street / Forest Avenue
********************************************************************************
Cycle (sec):         100                 Critical Vol./Cap. (X):        1.262
Loss Time (sec):      16 (Y+R =  4 sec) Average Delay (sec/veh):       134.5
Optimal Cycle:       180                 Level Of Service:                  F
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Protected
Rights:             Ovl            Include          Include             Ovl
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  2  0  1   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     583  467    55   179  372   189   320  814   362   145  756    84
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  583  467    55   179  372   189   320  814   362   145  756    84
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   648  519    61   199  413   210   356  904   402   161  840    93
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  648  519    61   199  413   210   356  904   402   161  840    93
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   648  519    61   199  413   210   356  904   402   161  840    93
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.90  0.81  0.90 0.86  0.86  0.90 0.86  0.86  0.90 0.90  0.81
Lanes:       1.00 2.00  1.00  1.00 1.33  0.67  1.00 1.38  0.62  1.00 2.00  1.00
Final Sat.:  1718 3437  1537  1718 2163  1099  1718 2269  1009  1718 3437  1537
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.38 0.15  0.04  0.12 0.19  0.19  0.21 0.40  0.40  0.09 0.24  0.06
Crit Moves:  ****                  ****              ****       ****
Green/Cycle: 0.30 0.25  0.33  0.20 0.15  0.15  0.18 0.32  0.32  0.07 0.21  0.41
Volume/Cap:  1.26 0.59  0.12  0.59 1.26  1.26  1.16 1.26  1.26  1.26 1.16  0.15
Delay/Veh:  168.1 33.8  23.6  39.4  176 176.0 142.1  160 160.1 212.5  125  18.9
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 168.1 33.8  23.6  39.4  176 176.0 142.1  160 160.1 212.5  125  18.9
HCM2kAvg:      41    8     1     7   20    20    21   39    39    12   23     2
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              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2010 No Project PM Peak Hour Conditions
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #7 Business Lane / Chico Mall Access
********************************************************************************
Average Delay (sec/veh):      5.1   Worst Case Level Of Service:       D[ 29.4]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       8   76    65   148  363     8     2    8     5    75    5     1
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    8   76    65   148  363     8     2    8     5    75    5     1
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     9   84    72   164  403     9     2    9     6    83    6     1
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     9   84    72   164  403     9     2    9     6    83    6     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  412 xxxx xxxxx   157 xxxx xxxxx   878  911   408   882  879   121
Potent Cap.: 1158 xxxx xxxxx  1436 xxxx xxxxx   271  276   648   269  288   936
Move Cap.:   1158 xxxx xxxxx  1436 xxxx xxxxx   239  240   648   233  250   936
Volume/Cap:  0.01 xxxx  xxxx  0.11 xxxx  xxxx  0.01 0.04  0.01  0.36 0.02  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.1 xxxx xxxxx   7.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  303 xxxxx  xxxx  236 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.2 xxxxx xxxxx  1.7 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 17.6 xxxxx xxxxx 29.4 xxxxx
Shared LOS:     *    *     *     *    *     *     *    C     *     *    D     *
ApproachDel:     xxxxxx           xxxxxx             17.6             29.4
ApproachLOS:        *                *                C                D
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--------------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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--------------------------------------------------------------------------------
                       Level Of Service Computation Report
           2000 HCM Unsignalized Method (Base Volume Alternative)
********************************************************************************
Intersection #8 Business Lane / Baney Lane
********************************************************************************
Average Delay (sec/veh):      5.5   Worst Case Level Of Service:       B[ 10.7]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0   0  1  0  0  0   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0   59    13   243  179     0     0    0     0    15    0   146
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0   59    13   243  179     0     0    0     0    15    0   146
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0   66    14   270  199     0     0    0     0    17    0   162
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0   66    14   270  199     0     0    0     0    17    0   162
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx    80 xxxx xxxxx  xxxx xxxx xxxxx   812 xxxx    73
Potent Cap.: xxxx xxxx xxxxx  1531 xxxx xxxxx  xxxx xxxx xxxxx   351 xxxx   995
Move Cap.:   xxxx xxxx xxxxx  1531 xxxx xxxxx  xxxx xxxx xxxxx   295 xxxx   995
Volume/Cap:  xxxx xxxx  xxxx  0.18 xxxx  xxxx  xxxx xxxx  xxxx  0.06 xxxx  0.16
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx   0.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  815 xxxxx
SharedQueue:xxxxx xxxx xxxxx   0.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.8 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx   7.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.7 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    B     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx             10.7
ApproachLOS:        *                *                *                B
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[10.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	7	0	10		0	0	0		0	251		5	3	154		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	7	0	10		0	0	0		0	251		5	3	154		0
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	8	0	11		0	0	0		0	279		6	3	171		0
Reduct Vol:	0	0	0		0	0	0		0	0		0	0	0		0
Final Vol.:	8	0	11		0	0	0		0	279		6	3	171		0

Critical Gap Module:

Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx			
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx			

Capacity Module:

Cnflict Vol:	459	xxxx	282	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		284	xxxx	xxxxx			
Potent Cap.:	560	xxxx	757	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1278	xxxx	xxxxx			
Move Cap.:	559	xxxx	757	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1278	xxxx	xxxxx			
Volume/Cap:	0.01	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.00	xxxx	xxxx			

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.8	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	661	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Shrd StpDel:	xxxxx	10.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.8	xxxx	xxxxx			
Shared LOS:	*	B	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	10.6				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	B				*				*				*			

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2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: B[13.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	47	0	67		0	0	0		0	318		117	60	168		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	47	0	67		0	0	0		0	318		117	60	168		0
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	52	0	74		0	0	0		0	353		130	67	187		0
Reduct Vol:	0	0	0		0	0	0		0	0		0	0	0		0
Final Vol.:	52	0	74		0	0	0		0	353		130	67	187		0

Critical Gap Module:

Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx			
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx			

Capacity Module:

Cnflict Vol:	738	xxxx	418	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		483	xxxx	xxxxx			
Potent Cap.:	385	xxxx	635	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1079	xxxx	xxxxx			
Move Cap.:	366	xxxx	635	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1079	xxxx	xxxxx			
Volume/Cap:	0.14	xxxx	0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.06	xxxx	xxxx			

Level Of Service Module:

Queue:	0.5	xxxx	0.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx			
Stopped Del:	16.5	xxxx	11.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.6	xxxx	xxxxx			
LOS by Move:	C	*	B	*	*	*	*	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.6	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	13.5				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	B				*				*				*			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 13.5 Worst Case Level Of Service: F[85.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module:																
Base Vol:	52	0	164		82	2	3		1	376		8	156	173		28
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	52	0	164		82	2	3		1	376		8	156	173		28
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	58	0	182		91	2	3		1	418		9	173	192		31
Reduct Vol:	0	0	0		0	0	0		0	0		0	0	0		0
Final Vol.:	58	0	182		91	2	3		1	418		9	173	192		31

Critical Gap Module:

Critical Gp:	7.1	xxxx	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx			
FollowUpTim:	3.5	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx			

Capacity Module:

Cnflict Vol:	982	xxxx	422	1070	983	208	223	xxxx	xxxxx		427	xxxx	xxxxx			
Potent Cap.:	230	xxxx	636	201	251	838	1345	xxxx	xxxxx		1133	xxxx	xxxxx			
Move Cap.:	201	xxxx	636	126	212	838	1345	xxxx	xxxxx		1133	xxxx	xxxxx			
Volume/Cap:	0.29	xxxx	0.29	0.72	0.01	0.00	0.00	xxxx	xxxx		0.15	xxxx	xxxx			

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx		0.5	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx		8.8	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	A	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	418	xxxxx	xxxx	131	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	3.5	xxxxx	xxxxx	4.2	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx	24.6	xxxxx	xxxxx	85.4	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx			
Shared LOS:	*	C	*	*	F	*	*	*	*		*	*	*			
ApproachDel:	24.6				85.4		xxxxxx				xxxxxx					
ApproachLOS:	C				F		*				*					

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.506
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 27.4
Optimal Cycle: 49 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	2	0 1	2	0	0	1 0	1	0	0	1 0
Volume Module:																
Base Vol:	128	557	38		48	549	216		410	11	201		8	13		35
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	128	557	38		48	549	216		410	11	201		8	13		35
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90
PHF Volume:	142	619	42		53	610	240		456	12	223		9	14		39
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0		0
Reduced Vol:	142	619	42		53	610	240		456	12	223		9	14		39
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	142	619	42		53	610	240		456	12	223		9	14		39

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.90	0.90	0.81	0.90	0.84	0.84	0.93	0.87	0.87				
Lanes:	1.00	1.87	0.13	1.00	2.00	1.00	2.00	0.05	0.95	1.00	0.27	0.73				
Final Sat.:	1718	3185	217	1718	3437	1537	3432	83	1515	1769	449	1210				

Capacity Analysis Module:

Vol/Sat:	0.08	0.19	0.19	0.03	0.18	0.16	0.13	0.15	0.15	0.01	0.03	0.03				
Crit Moves:	****				****		****				****					
Green/Cycle:	0.16	0.44	0.44	0.07	0.35	0.35	0.26	0.32	0.32	0.01	0.06	0.06				
Volume/Cap:	0.51	0.44	0.44	0.44	0.51	0.45	0.51	0.47	0.47	0.47	0.51	0.51				
Delay/Veh:	39.6	19.4	19.4	47.1	26.0	25.6	31.8	28.2	28.2	66.3	49.3	49.3				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	39.6	19.4	19.4	47.1	26.0	25.6	31.8	28.2	28.2	66.3	49.3	49.3				
HCM2kAvg:	5	7	7	2	8	6	7	6	6	1	2	2				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0		723		0	0		754		4	0		0		69	0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	0		723		0	0		754		4	0		0		69	0		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	0		803		0	0		838		4	0		0		77	0		0		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Final Vol.:	0		803		0	0		838		4	0		0		77	0		0		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			6.9	xxxxx	xxxx	xxxxx						
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			3.3	xxxxx	xxxx	xxxxx						
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			421	xxxx	xxxx	xxxxx						
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			587	xxxx	xxxx	xxxxx						
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			587	xxxx	xxxx	xxxxx						
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			0.13	xxxx	xxxx	xxxx						
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			0.4	xxxxx	xxxx	xxxxx						
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			12.1	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*	*	*	*	*	*	*			B	*	*	*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx			xxxx	xxxx	xxxxx	xxxx						
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			xxxxx	xxxx	xxxxx	xxxx						
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx			xxxxx	xxxx	xxxxx	xxxx						
Shared LOS:	*	*	*	*	*	*	*	*			*	*	*	*						
ApproachDel:	xxxxxx					xxxxxx					12.1					xxxxxx				
ApproachLOS:	*					*					B					*				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Average Delay (sec/veh): 9.7 Worst Case Level Of Service: F[133.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	1	0	0	1	0
Volume Module:																				
Base Vol:	38	595		60		92	701		30		55		0		23	45		0		73
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	38	595		60		92	701		30		55		0		23	45		0		73
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	42	661		67		102	779		33		61		0		26	50		0		81
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
Final Vol.:	42	661		67		102	779		33		61		0		26	50		0		81
Critical Gap Module:																				
Critical Gp:	4.2	xxxx	xxxxx			4.2	xxxx	xxxxx			7.5	xxxx			6.9	7.5	xxxx			6.9
FollowUpTim:	2.3	xxxx	xxxxx			2.3	xxxx	xxxxx			3.5	xxxx			3.3	3.5	xxxx			3.3
Capacity Module:																				
Cnflict Vol:	812	xxxx	xxxxx			728	xxxx	xxxxx			1415	xxxx			406	1373	xxxx			364
Potent Cap.:	791	xxxx	xxxxx			852	xxxx	xxxxx			97	xxxx			594	105	xxxx			633
Move Cap.:	791	xxxx	xxxxx			852	xxxx	xxxxx			74	xxxx			594	87	xxxx			633
Volume/Cap:	0.05	xxxx	xxxx			0.12	xxxx	xxxx			0.82	xxxx			0.04	0.57	xxxx			0.13
Level Of Service Module:																				
Queue:	0.2	xxxx	xxxxx			0.4	xxxx	xxxxx			xxxxx	xxxx			2.6	xxxx	xxxxx			
Stopped Del:	9.8	xxxx	xxxxx			9.8	xxxx	xxxxx			xxxxx	xxxx			90.8	xxxx	xxxxx			
LOS by Move:	A	*	*			A	*	*			*	*			F	*	*			
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	100	xxxxx			xxxx	xxxx			633
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	4.9	xxxxx			xxxxx	xxxx			0.4
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	134	xxxxx			xxxxx	xxxx			11.5
Shared LOS:	*	*	*			*	*	*			*	F	*			*	*			B
ApproachDel:	xxxxxx					xxxxxx					133.6					41.8				
ApproachLOS:	*					*					F					E				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.527
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 18.1
Optimal Cycle: 51 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ovl					Include				
Min. Green:	0	0		0		0	0		0		0	0		0		0	0		0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	2	1	0	0	1	0
Volume Module:																				
Base Vol:	486	283		12		23	188		23		47	84		611		15	53		26	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	486	283		12		23	188		23		47	84		611		15	53		26	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	540	314		13		26	209		26		52	93		679		17	59		29	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	540	314		13		26	209		26		52	93		679		17	59		29	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	540	314		13		26	209		26		52	93		679		17	59		29	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.95	0.94		0.94		0.95	0.93		0.93		0.95	1.00		0.75		0.95	0.95		0.95	
Lanes:	1.00	1.92		0.08		1.00	1.78		0.22		1.00	1.00		2.00		1.00	0.67		0.33	
Final Sat.:	1805	3442		146		1805	3165		387		1805	1900		2842		1805	1212		595	
Capacity Analysis Module:																				
Vol/Sat:	0.30	0.09		0.09		0.01	0.07		0.07		0.03	0.05		0.24		0.01	0.05		0.05	
Crit Moves:	****						****				****						****			
Green/Cycle:	0.57	0.60		0.60		0.09	0.13		0.13		0.05	0.12		0.69		0.02	0.09		0.09	
Volume/Cap:	0.53	0.15		0.15		0.15	0.53		0.53		0.53	0.40		0.35		0.40	0.53		0.53	
Delay/Veh:	13.8	8.8		8.8		42.1	42.1		42.1		51.2	41.5		6.4		54.2	46.4		46.4	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	13.8	8.8		8.8		42.1	42.1		42.1		51.2	41.5		6.4		54.2	46.4		46.4	
HCM2kAvg:	11	2		2		1	4		4		2	3		4		1	3		3	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.707
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 24.2
Optimal Cycle: 70 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0		0		0	0		0		0	0		0		0	0		0	
Lanes:	0	0	1!	0	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	4		9		13	300		2		88		93	1096		18	12	846		212	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	4		9		13	300		2		88		93	1096		18	12	846		212	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	4		10		14	333		2		98		103	1218		20	13	940		236	
Reduct Vol:	0		0		0	0		0		0		0	0		0	0	0		0	
Reduced Vol:	4		10		14	333		2		98		103	1218		20	13	940		236	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	4		10		14	333		2		98		103	1218		20	13	940		236	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.93	0.93		0.93		0.95	0.85		0.85		0.95	0.95		0.95		0.95	0.92		0.92	
Lanes:	0.15	0.35		0.50		1.00	0.02		0.98		1.00	1.97		0.03		1.00	1.60		0.40	
Final Sat.:	271	609		879		1805	36		1585		1805	3545		58		1805	2800		702	
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.02		0.02		0.18	0.06		0.06		0.06	0.34		0.34		0.01	0.34		0.34	
Crit Moves:		****				****					****						****			
Green/Cycle:	0.02	0.02		0.02		0.26	0.26		0.26		0.08	0.54		0.54		0.01	0.47		0.47	
Volume/Cap:	0.71	0.71		0.71		0.71	0.24		0.24		0.71	0.63		0.63		0.63	0.71		0.71	
Delay/Veh:	92.4	92.4		92.4		38.4	29.4		29.4		59.5	16.5		16.5		97.9	22.2		22.2	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	92.4	92.4		92.4		38.4	29.4		29.4		59.5	16.5		16.5		97.9	22.2		22.2	
HCM2kAvg:	2	2		2		11	2		2		5	14		14		1	15		15	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Average Delay (sec/veh): 2.9 Worst Case Level Of Service: D[30.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Ignore				Ignore				Ignore				Ignore			
Lanes:	0	0	0	0 1	2	0	0	0 1	0	0	1	0 1	1	0	1	0 0
Volume Module:																
Base Vol:	0	0	1021	0	0	355	0	1438	263	254	983	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	1021	0	0	355	0	1438	263	254	983	0				
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00				
PHF Volume:	0	0	0	0	0	0	0	1598	0	282	1092	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Final Vol.:	0	0	0	0	0	0	0	1598	0	282	1092	0				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1598	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	415	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	415	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.68	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.9	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	30.1	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	*				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.818
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 70 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Permitted				Permitted			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1!	0 1	0	0	0	0 0	0	0	2	0 1	0	0	2	0 1
Volume Module:																
Base Vol:	228	0	326	0	0	0	0	0	2009	450	0	1009	932			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	228	0	326	0	0	0	0	2009	450	0	1009	932				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00				
PHF Volume:	253	0	362	0	0	0	0	2232	0	0	1121	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	253	0	362	0	0	0	0	2232	0	0	1121	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
Final Vol.:	253	0	362	0	0	0	0	2232	0	0	1121	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.89	1.00	0.89	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Lanes:	1.41	0.00	1.59	0.00	0.00	0.00	0.00	2.00	1.00	0.00	2.00	1.00				
Final Sat.:	2397	0	2697	0	0	0	0	3610	1900	0	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.11	0.00	0.13	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.31	0.00				
Crit Moves:			****					****								
Green/Cycle:	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.76	0.00	0.00	0.76	0.00				
Volume/Cap:	0.64	0.00	0.82	0.00	0.00	0.00	0.00	0.82	0.00	0.00	0.41	0.00				
Delay/Veh:	40.6	0.0	47.4	0.0	0.0	0.0	0.0	9.9	0.0	0.0	4.4	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	40.6	0.0	47.4	0.0	0.0	0.0	0.0	9.9	0.0	0.0	4.4	0.0				
HCM2kAvg:	6	0	9	0	0	0	0	24	0	0	6	0				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 1.018
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 58.5
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Ovl				Ovl			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	0	1 0	1	0	1	0 1	2	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	363	176	67	261	84	587	579	1505	251	92	991	151				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	363	176	67	261	84	587	579	1505	251	92	991	151				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	403	196	74	290	93	652	643	1672	279	102	1101	168				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	403	196	74	290	93	652	643	1672	279	102	1101	168				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	403	196	74	290	93	652	643	1672	279	102	1101	168				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	0.96	0.96	0.95	1.00	0.85	0.92	0.95	0.85	0.95	0.95	0.85				
Lanes:	2.00	0.72	0.28	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00				
Final Sat.:	3502	1320	502	1805	1900	1615	3502	3610	1615	1805	3610	1615				
Capacity Analysis Module:																
Vol/Sat:	0.12	0.15	0.15	0.16	0.05	0.40	0.18	0.46	0.17	0.06	0.31	0.10				
Crit Moves:	****					****		****		****						
Green/Cycle:	0.11	0.16	0.16	0.17	0.22	0.41	0.19	0.46	0.57	0.06	0.32	0.49				
Volume/Cap:	1.02	0.94	0.94	0.94	0.23	0.99	0.96	1.02	0.30	1.02	0.96	0.21				
Delay/Veh:	94.2	78.3	78.3	76.0	32.6	61.6	64.5	54.1	11.5	142.0	50.6	14.6				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	94.2	78.3	78.3	76.0	32.6	61.6	64.5	54.1	11.5	142.0	50.6	14.6				
HCM2kAvg:	11	12	12	13	2	27	15	34	4	7	22	3				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

```
Cycle (sec):        100                 Critical Vol./Cap. (X):        0.973
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):        44.6
Optimal Cycle:      155                 Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Ovl              Include          Ovl              Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  0  1  0  1    1  0  0  1  0    1  0  2  0  1    2  0  1  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     232   19  602   106   27   50    46 1097  289   656  918  112
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  232   19  602   106   27   50    46 1097  289   656  918  112
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90
PHF Volume:   258   21  669   118   30   56    51 1219  321   729 1020  124
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  258   21  669   118   30   56    51 1219  321   729 1020  124
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Final Vol.:   258   21  669   118   30   56    51 1219  321   729 1020  124
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.95 1.00 0.85  0.95 0.90 0.90  0.95 0.95 0.85  0.92 0.93 0.93
Lanes:       1.00 1.00 1.00  1.00 0.35 0.65  1.00 2.00 1.00  2.00 1.78 0.22
Final Sat.:  1805 1900 1615  1805  602 1114  1805 3610 1615  3502 3166  386
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.01 0.41  0.07 0.05 0.05  0.03 0.34 0.20  0.21 0.32 0.32
Crit Moves:                  ****  ****                ****              ****
Green/Cycle: 0.21 0.21 0.43  0.07 0.07 0.07  0.05 0.35 0.55  0.21 0.52 0.52
Volume/Cap:  0.69 0.05 0.97  0.97 0.69 0.69  0.62 0.97 0.36  0.97 0.62 0.62
Delay/Veh:   42.2 31.5 55.7 119.5 60.7 60.7  61.1 51.3 12.7  65.2 18.0 18.0
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  42.2 31.5 55.7 119.5 60.7 60.7  61.1 51.3 12.7  65.2 18.0 18.0
HCM2kAvg:      9    1   26    7    4    4    3   24    6   17   13   13
*******************************************************************************
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

```
Cycle (sec):        100                 Critical Vol./Cap. (X):        1.007
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):        42.6
Optimal Cycle:      180                 Level Of Service:                 D
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:      Split Phase      Split Phase        Protected        Protected
Rights:         Include          Include            Ovl              Ignore
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        0  0  1! 0  0    1  1  0  0  2    0  0  2  0  1    2  0  2  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0    0    0   980    0  493     0 1684  121   338 1193    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0    0   980    0  493     0 1684  121   338 1193    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.00
PHF Adj:     0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.00
PHF Volume:     0    0    0  1089    0  548     0 1871  134   376 1326    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0    0  1089    0  548     0 1871  134   376 1326    0
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.00
Final Vol.:     0    0    0  1089    0  548     0 1871  134   376 1326    0
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  1.00 1.00 1.00  0.95 1.00 0.75  1.00 0.95 0.85  0.92 0.95 1.00
Lanes:       0.00 1.00 0.00  2.00 0.00 2.00  0.00 2.00 1.00  2.00 2.00 0.00
Final Sat.:     0 1900    0  3618    0 2842    0 3610 1615  3502 3610    0
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.30 0.00 0.19  0.00 0.52 0.08  0.11 0.37 0.00
Crit Moves:                  ****              ****              ****
Green/Cycle: 0.00 0.00 0.00  0.30 0.00 0.30  0.00 0.51 0.51  0.11 0.62 0.00
Volume/Cap:  0.00 0.00 0.00  1.01 0.00 0.64  0.00 1.01 0.16  1.01 0.59 0.00
Delay/Veh:    0.0  0.0  0.0  64.2  0.0 32.2    0.0 46.9 12.9  93.1 11.8  0.0
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0  64.2  0.0 32.2    0.0 46.9 12.9  93.1 11.8  0.0
HCM2kAvg:       0    0    0   25    0    8    0   37    2   11   12    0
*******************************************************************************
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

```
Cycle (sec):        100                 Critical Vol./Cap. (X):        1.132
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):        61.9
Optimal Cycle:      180                 Level Of Service:                 E
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:      Split Phase      Split Phase        Protected        Protected
Rights:           Ovl              Include          Ignore             Ovl
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Lanes:        1  1  0  0  1    0  0  0  0  0    2  0  2  0  0    0  0  2  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:      92    0  431     0    0    0   413 2251    0     0 1439  892
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   92    0  431     0    0    0   413 2251    0     0 1439  892
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.00  0.90 0.90 0.90
PHF Volume:   102    0  479     0    0    0   459 2501    0     0 1599  991
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  102    0  479     0    0    0   459 2501    0     0 1599  991
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 0.00  1.00 1.00 1.00
Final Vol.:   102    0  479     0    0    0   459 2501    0     0 1599  991
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900
Adjustment:  0.95 1.00 0.85  1.00 1.00 1.00  0.92 0.95 1.00  1.00 0.95 0.85
Lanes:       2.00 0.00 1.00  0.00 0.00 0.00  2.00 2.00 0.00  0.00 2.00 1.00
Final Sat.:  3618    0 1615     0    0    0  3502 3610    0     0 3610 1615
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.00 0.30  0.00 0.00 0.00  0.13 0.69 0.00  0.00 0.44 0.61
Crit Moves:                  ****                ****                    ****
Green/Cycle: 0.26 0.00 0.26  0.00 0.00 0.00  0.12 0.66 0.00  0.00 0.54 0.54
Volume/Cap:  0.11 0.00 1.13  0.00 0.00 0.00  1.13 1.05 0.00  0.00 0.82 1.13
Delay/Veh:   28.1  0.0 121.7   0.0  0.0  0.0 129.9 51.4  0.0   0.0 21.6 96.4
User DelAdj: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
AdjDel/Veh:  28.1  0.0 121.7   0.0  0.0  0.0 129.9 51.4  0.0   0.0 21.6 96.4
HCM2kAvg:      1    0   25     0    0    0   14   52    0     0   22   48
*******************************************************************************
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 E.20th Street / Business Lane

```
*******************************************************************************
Average Delay (sec/veh):       0.3   Worst Case Level Of Service:       B[ 15.0]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Stop Sign        Stop Sign      Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  0  0  0    0  0  4  0  1    0  0  2  0  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:       0    0  100     0    0    0     0 2046  636     0 2331    0
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0  100     0    0    0     0 2046  636     0 2331    0
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90
PHF Volume:     0    0  111     0    0    0     0 2273  707     0 2590    0
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Final Vol.:     0    0  111     0    0    0     0 2273  707     0 2590    0
------------|----------------||----------------||----------------||----------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|----------------||----------------||----------------||----------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   568  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   471  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   471  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.24  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|----------------||----------------||----------------||----------------|
Level Of Service Module:
Queue:       xxxxx xxxx   0.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx  15.0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:   *    *     B     *    *    *     *    *    *     *    *    *
Movement:    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *    *     *    *    *     *    *    *
ApproachDel:      15.0           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:       B              *                *                *
```

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.306
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 140.2
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	1	0	1!	0	0	0	1	0	0	2	2	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	473	70		45	151	60	443		542	1502		102		114	1415		164
Growth Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Initial Bse:	473	70		45	151	60	443		542	1502		102		114	1415		164
User Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90		0.90	0.90		0.90
PHF Volume:	526	78		50	168	67	492		602	1669		113		127	1572		182
Reduct Vol:	0	0		0	0	0	0		0	0		0		0	0		0
Reduced Vol:	526	78		50	168	67	492		602	1669		113		127	1572		182
PCE Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Final Vol.:	526	78		50	168	67	492		602	1669		113		127	1572		182
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900	1900		1900	1900		1900		1900	1900		1900
Adjustment:	0.93	0.93		0.93	0.95	0.95	0.73		0.88	0.90		0.90		0.90	0.89		0.89
Lanes:	1.67	0.20		0.13	0.72	0.28	2.00		2.00	1.87		0.13		1.00	1.79		0.21
Final Sat.:	2957	352		226	1286	511	2786		3334	3186		216		1718	3030		351
Capacity Analysis Module:																				
Vol/Sat:	0.18	0.22		0.22	0.13	0.13	0.18		0.18	0.52		0.52		0.07	0.52		0.52
Crit Moves:	****						****		****					****			
Green/Cycle:	0.17	0.17		0.17	0.14	0.14	0.14		0.14	0.47		0.47		0.07	0.40		0.40
Volume/Cap:	1.05	1.31		1.31	0.96	0.96	1.31		1.31	1.12		1.12		1.12	1.31		1.31
Delay/Veh:	91.6	193		193.2	90.6	90.6	199.0		195.8	87.8		87.8		165.7	173		173.4
User DelAdj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
AdjDel/Veh:	91.6	193		193.2	90.6	90.6	199.0		195.8	87.8		87.8		165.7	173		173.4
HCM2kAvg:	17	27		27	12	12	17		21	43		43		9	54		54

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 1.355
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 161.2
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Include					Ovl				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:																				
Base Vol:	598	404		77	130	373	271		297	799		340		128	1043		135
Growth Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Initial Bse:	598	404		77	130	373	271		297	799		340		128	1043		135
User Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90		0.90	0.90		0.90
PHF Volume:	664	449		86	144	414	301		330	888		378		142	1159		150
Reduct Vol:	0	0		0	0	0	0		0	0		0		0	0		0
Reduced Vol:	664	449		86	144	414	301		330	888		378		142	1159		150
PCE Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Final Vol.:	664	449		86	144	414	301		330	888		378		142	1159		150
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900	1900		1900	1900		1900		1900	1900		1900
Adjustment:	0.90	0.90		0.81	0.90	0.85	0.85		0.90	0.86		0.86		0.90	0.90		0.81
Lanes:	1.00	2.00		1.00	1.00	1.16	0.84		1.00	1.40		0.60		1.00	2.00		1.00
Final Sat.:	1718	3437		1537	1718	1865	1355		1718	2302		980		1718	3437		1537
Capacity Analysis Module:																				
Vol/Sat:	0.39	0.13		0.06	0.08	0.22	0.22		0.19	0.39		0.39		0.08	0.34		0.10
Crit Moves:	****					****			****					****			
Green/Cycle:	0.29	0.27		0.34	0.18	0.16	0.16		0.14	0.32		0.32		0.07	0.25		0.42
Volume/Cap:	1.35	0.48		0.16	0.48	1.35	1.35		1.35	1.20		1.20		1.20	1.35		0.23
Delay/Veh:	208.4	30.7		23.0	38.3	214	213.6		227.1	133		132.8		192.3	205		18.5
User DelAdj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
AdjDel/Veh:	208.4	30.7		23.0	38.3	214	213.6		227.1	133		132.8		192.3	205		18.5
HCM2kAvg:	46	6		2	5	25	25		24	35		35		10	38		3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: F[64.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	9	83		240	143	486	7		13	8		8		84	11		4
Growth Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Initial Bse:	9	83		240	143	486	7		13	8		8		84	11		4
User Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90		0.90	0.90		0.90
PHF Volume:	10	92		267	159	540	8		14	9		9		93	12		4
Reduct Vol:	0	0		0	0	0	0		0	0		0		0	0		0
Final Vol.:	10	92		267	159	540	8		14	9		9		93	12		4
Critical Gap Module:																				
Critical Gp:	4.1	xxxx		xxxxx	4.1	xxxx	xxxxx		7.1	6.5		6.2		7.1	6.5		6.2
FollowUpTim:	2.2	xxxx		xxxxx	2.2	xxxx	xxxxx		3.5	4.0		3.3		3.5	4.0		3.3
Capacity Module:																				
Cnflict Vol:	548	xxxx		xxxxx	359	xxxx	xxxxx		1116	1241		544		1116	1111		226
Potent Cap.:	1032	xxxx		xxxxx	1211	xxxx	xxxxx		187	177		543		187	211		819
Move Cap.:	1032	xxxx		xxxxx	1211	xxxx	xxxxx		156	150		543		155	179		819
Volume/Cap:	0.01	xxxx		xxxx	0.13	xxxx	xxxx		0.09	0.06		0.02		0.60	0.07		0.01
Level Of Service Module:																				
Queue:	0.0	xxxx		xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Stopped Del:	8.5	xxxx		xxxxx	8.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
LOS by Move:	A	*		*	A	*	*	*	*	*	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				
Shared Cap.:	xxxx	xxxx		xxxxx	xxxx	xxxx	xxxxx		xxxx	191	xxxxx		xxxx	163	xxxxx		
SharedQueue:	xxxxx	xxxx		xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx		3.9	xxxxx			
Shrd StpDel:	xxxxx	xxxx		xxxxx	xxxxx	xxxx	xxxxx	xxxxx	27.6	xxxxx	xxxxx		64.1	xxxxx			
Shared LOS:	*	*		*	*	*	*	*	D	*	*	*	F	*			
ApproachDel:	xxxxxx				xxxxxx				27.6				64.1				
ApproachLOS:	*				*				D				F				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 10.1 Worst Case Level Of Service: D[27.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0	125		61	327	214	0		0	0		0		60	0		204
Growth Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Initial Bse:	0	125		61	327	214	0		0	0		0		60	0		204
User Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90		0.90	0.90		0.90
PHF Volume:	0	139		68	363	238	0		0	0		0		67	0		227
Reduct Vol:	0	0		0	0	0	0		0	0		0		0	0		0
Final Vol.:	0	139		68	363	238	0		0	0		0		67	0		227
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx		6.4	xxxx		6.2					
FollowUpTim:	xxxxx	xxxx		xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.5	xxxx		3.3					
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		xxxxx	207	xxxx	xxxxx	xxxx	xxxx	xxxxx		1137	xxxx		173					
Potent Cap.:	xxxx	xxxx		xxxxx	1377	xxxx	xxxxx	xxxx	xxxx	xxxxx		225	xxxx		876					
Move Cap.:	xxxx	xxxx		xxxxx	1377	xxxx	xxxxx	xxxx	xxxx	xxxxx		167	xxxx		876					
Volume/Cap:	xxxx	xxxx		xxxx	0.26	xxxx	xxxx	xxxx	xxxx	xxxx		0.40	xxxx		0.26					
Level Of Service Module:																				
Queue:	xxxxx	xxxx		xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
Stopped Del:	xxxxx	xxxx		xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							
LOS by Move:	*	*		*	A	*	*	*	*	*	*	*	*							
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT							
Shared Cap.:	xxxx	xxxx		xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxxx		xxxx	446	xxxxx						
SharedQueue:	xxxxx	xxxx		xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	4.6	xxxxx						
Shrd StpDel:	xxxxx	xxxx		xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	27.2	xxxxx						
Shared LOS:	*	*		*	A	*	*	*	*	*	*	*	D	*						
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				27.2							
ApproachLOS:	*				*				*				D							

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2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[12.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	7	0	8		0	0	0		0	380		8	4	257		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	7	0	8		0	0	0		0	380		8	4	257		0
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	8	0	9		0	0	0		0	422		9	4	286		0
Reduct Vol:	0	0	0		0	0	0		0	0		0	0	0		0
Final Vol.:	8	0	9		0	0	0		0	422		9	4	286		0

Critical Gap Module:

Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				

Capacity Module:

Cnflict Vol:	721	xxxx	427	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	431	xxxx	xxxxx				
Potent Cap.:	394	xxxx	628	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1128	xxxx	xxxxx				
Move Cap.:	393	xxxx	628	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1128	xxxx	xxxxx				
Volume/Cap:	0.02	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx				

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	491	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx				
Shrd StpDel:	xxxxx	12.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx				
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	12.6				xxxxxx				xxxxxx			xxxxxx				
ApproachLOS:	B				*				*			*				

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2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 4.8 Worst Case Level Of Service: C[18.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	122	0	92		0	0	0		0	318		156	67	197		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	122	0	92		0	0	0		0	318		156	67	197		0
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	136	0	102		0	0	0		0	353		173	74	219		0
Reduct Vol:	0	0	0		0	0	0		0	0		0	0	0		0
Final Vol.:	136	0	102		0	0	0		0	353		173	74	219		0

Critical Gap Module:

Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				

Capacity Module:

Cnflict Vol:	808	xxxx	440	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	527	xxxx	xxxxx				
Potent Cap.:	350	xxxx	617	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1040	xxxx	xxxxx				
Move Cap.:	330	xxxx	617	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1040	xxxx	xxxxx				
Volume/Cap:	0.41	xxxx	0.17	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	xxxx				

Level Of Service Module:

Queue:	1.9	xxxx	0.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx				
Stopped Del:	23.3	xxxx	12.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx				
LOS by Move:	C	*	B	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	18.4				xxxxxx				xxxxxx			xxxxxx				
ApproachLOS:	C				*				*			*				

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2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 17.0 Worst Case Level Of Service: F[198.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module:																
Base Vol:	27	0	184		56	4	3		9	390		11	241	234		46
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	27	0	184		56	4	3		9	390		11	241	234		46
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	30	0	204		62	4	3		10	433		12	268	260		51
Reduct Vol:	0	0	0		0	0	0		0	0		0	0	0		0
Final Vol.:	30	0	204		62	4	3		10	433		12	268	260		51

Critical Gap Module:

Critical Gp:	7.1	xxxx	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx				

Capacity Module:

Cnflict Vol:	1284	xxxx	439	1383	1287	286	311	xxxx	xxxxx	446	xxxx	xxxxx				
Potent Cap.:	143	xxxx	622	122	166	758	1249	xxxx	xxxxx	1115	xxxx	xxxxx				
Move Cap.:	112	xxxx	622	67	125	758	1249	xxxx	xxxxx	1115	xxxx	xxxxx				
Volume/Cap:	0.27	xxxx	0.33	0.94	0.04	0.00	0.01	xxxx	xxxx	0.24	xxxx	xxxx				

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.9	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx	9.2	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	393	xxxxx	xxxx	72	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	3.7	xxxxx	xxxxx	5.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	26.8	xxxxx	xxxxx	198	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	D	*	*	F	*	*	*	*	*	*	*				
ApproachDel:	26.8				198.2				xxxxxx			xxxxxx				
ApproachLOS:	D				F				*			*				

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.641
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 29.8
Optimal Cycle: 62 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	2	0 1	2	0	0	1 0	1	0	0	1 0
Volume Module:																
Base Vol:	245	451	3		21	416	262		364	21	245		11	14	25	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	245	451	3		21	416	262		364	21	245		11	14	25	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	272	501	3		23	462	291		404	23	272		12	16	28	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	272	501	3		23	462	291		404	23	272		12	16	28	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	272	501	3		23	462	291		404	23	272		12	16	28	

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.90	0.90	0.90	0.81	0.90	0.84	0.84	0.93	0.89	0.89				
Lanes:	1.00	1.99	0.01	1.00	2.00	1.00	2.00	0.08	0.92	1.00	0.36	0.64				
Final Sat.:	1718	3411	23	1718	3437	1537	3432	127	1478	1769	604	1079				

Capacity Analysis Module:

Vol/Sat:	0.16	0.15	0.15	0.01	0.13	0.19	0.12	0.18	0.18	0.01	0.03	0.03				
Crit Moves:	****					****		****		****						
Green/Cycle:	0.25	0.50	0.50	0.05	0.30	0.30	0.24	0.29	0.29	0.01	0.05	0.05				
Volume/Cap:	0.64	0.30	0.30	0.30	0.46	0.64	0.48	0.64	0.64	0.64	0.48	0.48				
Delay/Veh:	37.0	15.0	15.0	48.2	29.0	33.7	32.8	34.2	34.2	105.3	50.0	50.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	37.0	15.0	15.0	48.2	29.0	33.7	32.8	34.2	34.2	105.3	50.0	50.0				
HCM2kAvg:	9	5	5	1	6	9	6	9	9	1	2	2				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[11.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	699		0	0	666		6	0	0	67		0	0	0	0		0	0	0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
Initial Bse:	0	699		0	0	666		6	0	0	67		0	0	0	0		0	0	0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90
PHF Volume:	0	777		0	0	740		7	0	0	74		0	0	0	0		0	0	0
Reduct Vol:	0	0		0	0	0		0	0	0	0		0	0	0	0		0	0	0
Final Vol.:	0	777		0	0	740		7	0	0	74		0	0	0	0		0	0	0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx							
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	373	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	630	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	630	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.12	xxxx	xxxx	xxxx								
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.4	xxxxx	xxxx	xxxxx								
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.5	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*								
Movement:	LT - LTR - RT					LT - LTR - RT				LT - LTR - RT						LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	xxxxxx			xxxxxx					11.5			xxxxxx								
ApproachLOS:	*			*					B			*								

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2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Average Delay (sec/veh): 8.6 Worst Case Level Of Service: F[97.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	1	0	1	1	0
Volume Module:																				
Base Vol:	56	554		51	61	658		14	59	0		29	47	0		86				
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00				
Initial Bse:	56	554		51	61	658		14	59	0		29	47	0		86				
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00				
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90				
PHF Volume:	62	616		57	68	731		16	66	0		32	52	0		96				
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0				
Final Vol.:	62	616		57	68	731		16	66	0		32	52	0		96				
Critical Gap Module:																				
Critical Gp:	4.2	xxxx	xxxxx	4.2	xxxx	xxxxx	7.5	xxxx	6.9	7.5	xxxx	6.9								
FollowUpTim:	2.3	xxxx	xxxxx	2.3	xxxx	xxxxx	3.5	xxxx	3.3	3.5	xxxx	3.3								
Capacity Module:																				
Cnflict Vol:	747	xxxx	xxxxx	672	xxxx	xxxxx	1307	xxxx	373	1269	xxxx	336								
Potent Cap.:	838	xxxx	xxxxx	894	xxxx	xxxxx	117	xxxx	624	125	xxxx	660								
Move Cap.:	838	xxxx	xxxxx	894	xxxx	xxxxx	89	xxxx	624	105	xxxx	660								
Volume/Cap:	0.07	xxxx	xxxx	0.08	xxxx	xxxx	0.73	xxxx	0.05	0.50	xxxx	0.14								
Level Of Service Module:																				
Queue:	0.2	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx								
Stopped Del:	9.6	xxxx	xxxxx	9.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	68.8	xxxx	xxxxx								
LOS by Move:	A	*	*	A	*	*	*	*	*	F	*	*								
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT										
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	124	xxxxx	xxxx	xxxx	660								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.6	xxxxx	xxxxx	xxxx	0.5								
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	97.9	xxxxx	xxxxx	xxxx	11.4								
Shared LOS:	*	*	*	*	*	*	*	F	*	*	*	B								
ApproachDel:	xxxxxx			xxxxxx			97.9			31.7										
ApproachLOS:	*			*			F			D										

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2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.517
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 14.0
Optimal Cycle: 50 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Include					Ovl					Include				
Min. Green:	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1	0	2	1	0	0	1	0
Volume Module:																				
Base Vol:	536	312		7	9	132		24	25	63	579		4	45		20				
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
Initial Bse:	536	312		7	9	132		24	25	63	579		4	45		20				
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90				
PHF Volume:	596	347		8	10	147		27	28	70	643		4	50		22				
Reduct Vol:	0	0		0	0	0		0	0	0	0		0	0		0				
Reduced Vol:	596	347		8	10	147		27	28	70	643		4	50		22				
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
Final Vol.:	596	347		8	10	147		27	28	70	643		4	50		22				
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900	1900		1900	1900		1900				
Adjustment:	0.95	0.95		0.95	0.95	0.93		0.93	0.95	1.00	0.75		0.95	0.95		0.95				
Lanes:	1.00	1.96		0.04	1.00	1.69		0.31	1.00	1.00	2.00		1.00	0.69		0.31				
Final Sat.:	1805	3520		79	1805	2984		543	1805	1900	2842		1805	1255		558				
Capacity Analysis Module:																				
Vol/Sat:	0.33	0.10		0.10	0.01	0.05		0.05	0.02	0.04	0.23		0.00	0.04		0.04				
Crit Moves:	****					****			****					****						
Green/Cycle:	0.64	0.69		0.69	0.04	0.10		0.10	0.03	0.10	0.74		0.01	0.08		0.08				
Volume/Cap:	0.52	0.14		0.14	0.14	0.52		0.52	0.52	0.37	0.31		0.37	0.52		0.52				
Delay/Veh:	10.2	5.2		5.2	47.4	44.5		44.5	56.3	43.2	4.5		67.4	47.7		47.7				
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
AdjDel/Veh:	10.2	5.2		5.2	47.4	44.5		44.5	56.3	43.2	4.5		67.4	47.7		47.7				
HCM2kAvg:	10	2		2	0	3		3	2	2	3		1	3		3				

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.651
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 63 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0		0	0	0		0	0	0		0	0	0		0	0	0		0
Lanes:	0	0	1!	0	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	12	3		8	263	3		109	88	845	9		13	737		252				
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
Initial Bse:	12	3		8	263	3		109	88	845	9		13	737		252				
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90				
PHF Volume:	13	3		9	292	3		121	98	939	10		14	819		280				
Reduct Vol:	0	0		0	0	0		0	0	0	0		0	0		0				
Reduced Vol:	13	3		9	292	3		121	98	939	10		14	819		280				
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
Final Vol.:	13	3		9	292	3		121	98	939	10		14	819		280				
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900	1900		1900	1900		1900				
Adjustment:	0.93	0.93		0.93	0.95	0.85		0.85	0.95	0.95	0.95		0.95	0.91		0.91				
Lanes:	0.52	0.13		0.35	1.00	0.03		0.97	1.00	1.98	0.02		1.00	1.49		0.51				
Final Sat.:	921	230		614	1805	43		1579	1805	3565	38		1805	2588		885				
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.01		0.01	0.16	0.08		0.08	0.05	0.26	0.26		0.01	0.32		0.32				
Crit Moves:		****			****				****					****						
Green/Cycle:	0.02	0.02		0.02	0.25	0.25		0.25	0.08	0.55	0.55		0.02	0.49		0.49				
Volume/Cap:	0.65	0.65		0.65	0.65	0.31		0.31	0.65	0.48	0.48		0.48	0.65		0.65				
Delay/Veh:	81.2	81.2		81.2	37.1	31.0		31.0	54.2	13.8	13.8		60.1	20.2		20.2				
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00				
AdjDel/Veh:	81.2	81.2		81.2	37.1	31.0		31.0	54.2	13.8	13.8		60.1	20.2		20.2				
HCM2kAvg:	2	2		2	9	3		3	4	9	9		1	13		13				

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Average Delay (sec/veh): 1.1 Worst Case Level Of Service: B[13.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Ignore				Ignore				Ignore				Ignore			
Lanes:	0	0	0	0 1	2	0	0	0 1	0	0	1	0 1	1	0	1	0 0
Volume Module:																
Base Vol:	0	0	628	0	0	282	0	955	220	192	1035	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	628	0	0	282	0	955	220	192	1035	0				
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00				
PHF Volume:	0	0	0	0	0	0	0	1061	0	213	1150	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Final Vol.:	0	0	0	0	0	0	0	1061	0	213	1150	0				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1061	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	664	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	664	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.32	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.4	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.0	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	*				*				*				*			

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2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.562
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 10.9
Optimal Cycle: 36 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Permitted				Permitted			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1!	0 1	0	0	0	0 0	0	0	2	0 1	0	0	2	0 1
Volume Module:																
Base Vol:	194	0	253	0	0	0	0	0	1338	245	0	1033	707			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	194	0	253	0	0	0	0	1338	245	0	1033	707				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00				
PHF Volume:	216	0	281	0	0	0	0	1487	0	0	1148	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	216	0	281	0	0	0	0	1487	0	0	1148	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
Final Vol.:	216	0	281	0	0	0	0	1487	0	0	1148	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Lanes:	1.43	0.00	1.57	0.00	0.00	0.00	0.00	2.00	1.00	0.00	2.00	1.00				
Final Sat.:	2441	0	2665	0	0	0	0	3610	1900	0	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.09	0.00	0.11	0.00	0.00	0.00	0.00	0.41	0.00	0.00	0.32	0.00				
Crit Moves:			****					****								
Green/Cycle:	0.19	0.00	0.19	0.00	0.00	0.00	0.00	0.73	0.00	0.00	0.73	0.00				
Volume/Cap:	0.47	0.00	0.56	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.43	0.00				
Delay/Veh:	36.5	0.0	37.7	0.0	0.0	0.0	0.0	6.4	0.0	0.0	5.4	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	36.5	0.0	37.7	0.0	0.0	0.0	0.0	6.4	0.0	0.0	5.4	0.0				
HCM2kAvg:	5	0	6	0	0	0	0	11	0	0	7	0				

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.922
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 44.9
Optimal Cycle: 126 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Ovl				Ovl			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	0	1 0	1	0	1	0 1	2	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	390	332	54	200	103	594	593	840	158	58	756	343				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	390	332	54	200	103	594	593	840	158	58	756	343				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	433	369	60	222	114	660	659	933	176	64	840	381				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	433	369	60	222	114	660	659	933	176	64	840	381				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	433	369	60	222	114	660	659	933	176	64	840	381				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	0.98	0.98	0.95	1.00	0.85	0.92	0.95	0.85	0.95	0.95	0.85				
Lanes:	2.00	0.86	0.14	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00				
Final Sat.:	3502	1600	260	1805	1900	1615	3502	3610	1615	1805	3610	1615				
Capacity Analysis Module:																
Vol/Sat:	0.12	0.23	0.23	0.12	0.06	0.41	0.19	0.26	0.11	0.04	0.23	0.24				
Crit Moves:		****		****			****				****					
Green/Cycle:	0.14	0.25	0.25	0.13	0.25	0.45	0.20	0.40	0.54	0.06	0.25	0.39				
Volume/Cap:	0.90	0.92	0.92	0.92	0.25	0.91	0.92	0.64	0.20	0.64	0.92	0.61				
Delay/Veh:	61.7	60.4	60.4	80.2	30.5	40.9	56.4	25.2	12.0	59.9	50.9	26.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	61.7	60.4	60.4	80.2	30.5	40.9	56.4	25.2	12.0	59.9	50.9	26.5				
HCM2kAvg:	10	17	17	11	3	23	14	12	3	3	17	10				

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 0.336
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 15.9
Optimal Cycle: 40 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	53	5	61	33	7	22	21	500	84	119	621	50								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	53	5	61	33	7	22	21	500	84	119	621	50								
Added Vol:	0	0	1	5	0	0	0	18	0	1	21	7								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	53	5	62	38	7	22	21	518	84	120	642	57								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	59	6	69	42	8	24	23	576	93	133	713	63								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	59	6	69	42	8	24	23	576	93	133	713	63								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	59	6	69	42	8	24	23	576	93	133	713	63								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	1.00	0.85	0.95	0.89	0.89	0.95	0.95	0.85	0.92	0.94	0.94								
Lanes:	1.00	1.00	1.00	1.00	0.24	0.76	1.00	2.00	1.00	2.00	1.84	0.16								
Final Sat.:	1805	1900	1615	1805	406	1277	1805	3610	1615	3502	3276	291								
Capacity Analysis Module:																				
Vol/Sat:	0.03	0.00	0.04	0.02	0.02	0.02	0.01	0.16	0.06	0.04	0.22	0.22								
Crit Moves:	****				****		****				****	****								
Green/Cycle:	0.10	0.03	0.16	0.13	0.06	0.06	0.04	0.55	0.65	0.13	0.65	0.65								
Volume/Cap:	0.34	0.12	0.27	0.18	0.34	0.34	0.34	0.29	0.09	0.29	0.34	0.34								
Delay/Veh:	43.3	48.7	37.7	39.2	47.4	47.4	49.7	11.9	6.5	39.5	8.0	8.0								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	43.3	48.7	37.7	39.2	47.4	47.4	49.7	11.9	6.5	39.5	8.0	8.0								
HCM2kAvg:	2	0	2	1	1	1	1	5	1	2	5	5								

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.538
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 23.7
Optimal Cycle: 34 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Ovl					Ignore				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0	0	1	1	0	0	2	0	0	2	0	1	2	0	2	0	0
Volume Module:																				
Base Vol:	0	0	0	674	0	189	0	547	47	326	601	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	674	0	189	0	547	47	326	601	0								
Added Vol:	0	0	0	14	0	0	0	23	0	0	29	0								
PasserByVol:	0	0	0	16	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	0	704	0	189	0	570	47	326	630	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00								
PHF Volume:	0	0	0	782	0	210	0	633	52	362	700	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	782	0	210	0	633	52	362	700	0								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00								
Final Vol.:	0	0	0	782	0	210	0	633	52	362	700	0								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.75	1.00	0.95	0.85	0.92	0.95	1.00								
Lanes:	0.00	1.00	0.00	2.00	0.00	2.00	0.00	2.00	1.00	2.00	2.00	0.00								
Final Sat.:	0	1900	0	3618	0	2842	0	3610	1615	3502	3610	0								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.07	0.00	0.18	0.03	0.10	0.19	0.00								
Crit Moves:				****				****		****										
Green/Cycle:	0.00	0.00	0.00	0.40	0.00	0.40	0.00	0.33	0.33	0.19	0.52	0.00								
Volume/Cap:	0.00	0.00	0.00	0.54	0.00	0.18	0.00	0.54	0.10	0.54	0.37	0.00								
Delay/Veh:	0.0	0.0	0.0	23.2	0.0	19.4	0.0	28.0	23.6	37.3	14.5	0.0								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	0.0	0.0	0.0	23.2	0.0	19.4	0.0	28.0	23.6	37.3	14.5	0.0								
HCM2kAvg:	0	0	0	10	0	2	0	8	1	6	6	0								

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.646
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 42 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ovl				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	2	0	1
Volume Module:																				
Base Vol:	65	0	231	0	0	0	173	1048	0	0	0	862	521							
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	65	0	231	0	0	0	173	1048	0	0	0	862	521							
Added Vol:	0	0	0	0	0	0	0	37	0	0	0	29	19							
PasserByVol:	0	0	0	0	0	0	0	16	0	0	0	0	13							
Initial Fut:	65	0	231	0	0	0	173	1101	0	0	0	891	553							
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90								
PHF Volume:	72	0	257	0	0	0	192	1223	0	0	990	614								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	72	0	257	0	0	0	192	1223	0	0	990	614								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
Final Vol.:	72	0	257	0	0	0	192	1223	0	0	990	614								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	0.92	0.95	1.00	1.00	0.95	0.85								
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00								
Final Sat.:	3618	0	1615	0	0	0	3502	3610	0	0	3610	1615								
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.00	0.16	0.00	0.00	0.00	0.05	0.34	0.00	0.00	0.27	0.38								
Crit Moves:			****				****					****								
Green/Cycle:	0.25	0.00	0.25	0.00	0.00	0.00	0.08	0.67	0.00	0.00	0.59	0.59								
Volume/Cap:	0.08	0.00	0.65	0.00	0.00	0.00	0.65	0.50	0.00	0.00	0.47	0.65								
Delay/Veh:	29.0	0.0	37.5	0.0	0.0	0.0	49.2	8.2	0.0	0.0	11.8	15.2								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	29.0	0.0	37.5	0.0	0.0	0.0	49.2	8.2	0.0	0.0	11.8	15.2								
HCM2kAvg:	1	0	8	0	0	0	4	9	0	0	9	13								

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[10.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	2	0	0
Volume Module:																				
Base Vol:	0	0	38	0	0	0	0	0	1060	219	0	1383	0							
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	38	0	0	0	0	0	1060	219	0	1383	0							
Added Vol:	0	0	0	0	0	0	0	0	20	17	0	49	0							
PasserByVol:	0	0	0	0	0	0	0	0	16	0	0	13	0							
Initial Fut:	0	0	38	0	0	0	0	0	1096	236	0	1445	0							
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90							
PHF Volume:	0	0	42	0	0	0	0	0	1218	262	0	1606	0							
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Final Vol.:	0	0	42	0	0	0	0	0	1218	262	0	1606	0							
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx	xxxxx							
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	304	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	698	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	698	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.06	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
Queue:	xxxxx	xxxx	0.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Stopped Del:	xxxxx	xxxx	10.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	B	*	*	*	*	*	*	*	*	*								
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	10.5			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	B			*			*			*										

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.636
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 13.7
Optimal Cycle: 61 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1! 0	0	0	1 0	0 2	2 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	71	5	9	37	2	78	110	970	18	24	1234	43
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	71	5	9	37	2	78	110	970	18	24	1234	43
Added Vol:	0	0	0	0	0	0	0	20	0	0	49	0
PasserByVol:	0	0	0	0	0	0	0	16	0	0	13	0
Initial Fut:	71	5	9	37	2	78	110	1006	18	24	1296	43
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	79	6	10	41	2	87	122	1118	20	27	1440	48
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	6	10	41	2	87	122	1118	20	27	1440	48
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	79	6	10	41	2	87	122	1118	20	27	1440	48
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.94	0.94	0.73	0.88	0.90	0.90	0.90	0.90	0.90
Lanes:	1.72	0.10	0.18	0.95	0.05	2.00	2.00	1.96	0.04	1.00	1.94	0.06
Final Sat.:	3020	178	320	1687	91	2786	3334	3366	60	1718	3310	110
Capacity Analysis Module:												
Vol/Sat:	0.03	0.03	0.03	0.02	0.02	0.03	0.04	0.33	0.33	0.02	0.44	0.44
Crit Moves:		****				****	****				****	
Green/Cycle:	0.05	0.05	0.05	0.05	0.05	0.05	0.06	0.71	0.71	0.03	0.68	0.68
Volume/Cap:	0.53	0.64	0.64	0.50	0.50	0.64	0.64	0.47	0.47	0.47	0.64	0.64
Delay/Veh:	49.5	55.4	55.4	50.8	50.8	56.2	53.0	6.5	6.5	53.5	9.4	9.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.5	55.4	55.4	50.8	50.8	56.2	53.0	6.5	6.5	53.5	9.4	9.4
HCM2kAvg:	2	3	3	2	2	2	3	8	8	2	13	13

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.883
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 45.9
Optimal Cycle: 110 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	256	139	11	113	288	226	175	394	333	81	642	165
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	256	139	11	113	288	226	175	394	333	81	642	165
Added Vol:	49	37	16	0	29	0	0	0	20	14	0	0
PasserByVol:	32	0	10	0	0	0	0	-14	30	15	-15	0
Initial Fut:	337	176	37	113	317	226	175	380	383	110	627	165
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	374	196	41	126	352	251	194	422	426	122	697	183
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	374	196	41	126	352	251	194	422	426	122	697	183
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	374	196	41	126	352	251	194	422	426	122	697	183
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.81	0.90	0.85	0.85	0.90	0.84	0.84	0.90	0.90	0.81
Lanes:	1.00	2.00	1.00	1.00	1.17	0.83	1.00	1.00	1.00	1.00	2.00	1.00
Final Sat.:	1718	3437	1537	1718	1882	1342	1718	1589	1589	1718	3437	1537
Capacity Analysis Module:												
Vol/Sat:	0.22	0.06	0.03	0.07	0.19	0.19	0.11	0.27	0.27	0.07	0.20	0.12
Crit Moves:	****				****			****	****		****	
Green/Cycle:	0.25	0.20	0.28	0.26	0.21	0.21	0.14	0.30	0.30	0.08	0.24	0.50
Volume/Cap:	0.88	0.28	0.10	0.28	0.88	0.88	0.83	0.88	0.89	0.88	0.83	0.24
Delay/Veh:	55.4	34.1	26.6	30.1	51.2	51.2	63.1	43.0	43.8	89.2	42.7	14.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	55.4	34.1	26.6	30.1	51.2	51.2	63.1	43.0	43.8	89.2	42.7	14.2
HCM2kAvg:	15	3	1	3	12	12	9	16	16	7	13	3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[12.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	1	28	46	44	167	8	9	2	9	50	11	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	28	46	44	167	8	9	2	9	50	11	1
Added Vol:	0	0	0	0	17	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	28	46	44	184	8	9	2	9	50	11	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	1	31	51	49	204	9	10	2	10	56	12	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	1	31	51	49	204	9	10	2	10	56	12	1
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	213	xxxx	xxxxx	82	xxxx	xxxxx	372	391	209	372	370	57
Potent Cap.:	1369	xxxx	xxxxx	1528	xxxx	xxxxx	588	548	837	589	563	1015
Move Cap.:	1369	xxxx	xxxxx	1528	xxxx	xxxxx	563	529	837	565	544	1015
Volume/Cap:	0.00	xxxx	xxxx	0.03	xxxx	xxxx	0.02	0.00	0.01	0.10	0.02	0.00
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.6	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	655	xxxxx	xxxx	565	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.4	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.7	xxxxx	xxxxx	12.3	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			10.7			12.3		
ApproachLOS:	*			*			B			B		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 4.7 Worst Case Level Of Service: A[9.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	17	6	105	54	0	0	0	0	7	0	14
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	17	6	105	54	0	0	0	0	7	0	14
Added Vol:	0	0	0	9	8	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	17	6	114	62	0	0	0	0	7	0	14
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	19	7	127	69	0	0	0	0	8	0	16
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	19	7	127	69	0	0	0	0	8	0	16
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	26	xxxx	xxxxx	xxxx	xxxx	xxxxx	344	xxxx	22
Potent Cap.:	xxxx	xxxx	xxxxx	1602	xxxx	xxxxx	xxxx	xxxx	xxxxx	656	xxxx	1061
Move Cap.:	xxxx	xxxx	xxxxx	1602	xxxx	xxxxx	xxxx	xxxx	xxxxx	613	xxxx	1061
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	0.01
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	853	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.3	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9.3		
ApproachLOS:	*			*			*			A		

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-----------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     2010 Plus Prj AM Peak Hour Conditions
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
         2000 HCM Unsignalized Method (Future Volume Alternative)
*****************************************************************************
Intersection #9 BANEY LN / WALMART WEST DRWY
*****************************************************************************
Average Delay (sec/veh):      0.2   Worst Case Level Of Service:       A[  9.3]
*****************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:         Include          Include          Include          Include
Lanes:       1  0  0  0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       3    0     0     0    0     0     0  110     1     1   21     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    3    0     0     0    0     0     0  110     1     1   21     0
Added Vol:      0    0     0     0    0     0     0    9     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    3    0     0     0    0     0     0  119     1     1   21     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     3    0     0     0    0     0     0  132     1     1   23     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     3    0     0     0    0     0     0  132     1     1   23     0
Critical Gap Module:
Critical Gp:  6.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  158 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   133 xxxx xxxxx
Potent Cap.:  833 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1451 xxxx xxxxx
Move Cap.:    832 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1451 xxxx xxxxx
Volume/Cap:  0.00 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:  9.3 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     A    *     *
ApproachDel:       9.3            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        A                *                *                *
```



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-----------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     2010 Plus Prj AM Peak Hour Conditions
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
         2000 HCM Unsignalized Method (Future Volume Alternative)
*****************************************************************************
Intersection #10 BANEY LN / WALMART CENTRAL DRWY
*****************************************************************************
Average Delay (sec/veh):      1.5   Worst Case Level Of Service:       A[  9.2]
*****************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:         Include          Include          Include          Include
Lanes:       1  0  0  0  1    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    10     0    0     0     0  126    39    15   45     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    10     0    0     0     0  126    39    15   45     0
Added Vol:      0    0    15     0    0     0     0    2     7     6    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0    25     0    0     0     0  128    46    21   45     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0    0    28     0    0     0     0  142    51    23   50     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0    0    28     0    0     0     0  142    51    23   50     0
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   168  xxxx xxxx xxxxx  xxxx xxxx xxxxx   193 xxxx xxxxx
Potent Cap.: xxxx xxxx   876  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1380 xxxx xxxxx
Move Cap.:   xxxx xxxx   876  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1380 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.03  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.02 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx   0.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxx xxxxx
Stopped Del:xxxxx xxxx   9.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.7 xxxx xxxxx
LOS by Move:    *    *     A     *    *     *     *    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.1 xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.7 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     A    *     *
ApproachDel:       9.2            xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        A                *                *                *
```



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-----------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     2010 Plus Prj AM Peak Hour Conditions
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
         2000 HCM Unsignalized Method (Future Volume Alternative)
*****************************************************************************
Intersection #11 BANEY LN / WALMART EAST DRWY
*****************************************************************************
Average Delay (sec/veh):      4.5   Worst Case Level Of Service:       B[ 11.8]
*****************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:         Include          Include          Include          Include
Lanes:       0  0  0  0  1    0  0  1! 0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    55     5    0     5     1  127     8    85   55     2
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0    55     5    0     5     1  127     8    85   55     2
Added Vol:      0    0    17     0    0     0     0   16     1     5    6     0
PasserByVol:    0    0    31     0    0     0     0    0     0    22    0     0
Initial Fut:    0    0   103     5    0     5     1  143     9   112   61     2
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0    0   114     6    0     6     1  159    10   124   68     2
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0    0   114     6    0     6     1  159    10   124   68     2
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.2   7.1 xxxx   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5 xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   164   541 xxxx    69    70 xxxx xxxxx   169 xxxx xxxxx
Potent Cap.: xxxx xxxx   886   455 xxxx  1000  1531 xxxx xxxxx  1409 xxxx xxxxx
Move Cap.:   xxxx xxxx   886   369 xxxx  1000  1531 xxxx xxxxx  1409 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.13  0.02 xxxx  0.01  0.00 xxxx  xxxx  0.09 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx   0.4 xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.3 xxxx xxxxx
Stopped Del:xxxxx xxxx   9.7 xxxxx xxxx xxxxx   7.4 xxxx xxxxx   7.8 xxxx xxxxx
LOS by Move:    *    *     A     *    *     *     A    *     *     A    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx  539 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx 11.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    B     *     *    *     *     *    *     *
ApproachDel:       9.7              11.8           xxxxxx           xxxxxx
ApproachLOS:        A                B                *                *
```



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-----------------------------------------------------------------------------
               Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     2010 Plus Prj AM Peak Hour Conditions
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.394
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):      24.1
Optimal Cycle:       42              Level Of Service:                 C
*****************************************************************************
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:         Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:       1  0  1  1  0    1  0  2  0  1    2  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      71  242    12    50  472    63    77   16    94    16    8    34
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   71  242    12    50  472    63    77   16    94    16    8    34
Added Vol:      4   79     9     0   58     5    22    4     8     8    2     0
PasserByVol:    0   19     0     0   23    22    23    0     8     0    0     0
Initial Fut:   75  340    21    50  553    90   122   20   110    24   10    34
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    83  378    23    56  614   100   136   22   122    27   11    38
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   83  378    23    56  614   100   136   22   122    27   11    38
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:    83  378    23    56  614   100   136   22   122    27   11    38
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.90  0.90  0.90 0.90  0.81  0.90 0.86  0.86  0.93 0.87  0.87
Lanes:       1.00 1.88  0.12  1.00 2.00  1.00  2.00 0.15  0.85  1.00 0.23  0.77
Final Sat.:  1718 3208   198  1718 3437  1537  3432  250  1375  1769  374  1272
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.12  0.12  0.03 0.18  0.07  0.04 0.09  0.09  0.02 0.03  0.03
Crit Moves:  ****                  ****             ****         ****
Green/Cycle: 0.12 0.45  0.45  0.12 0.45  0.45  0.15 0.23  0.23  0.04 0.11  0.11
Volume/Cap:  0.39 0.26  0.26  0.26 0.39  0.14  0.26 0.39  0.39  0.39 0.26  0.26
Delay/Veh:   41.6 17.1  17.1  40.3 18.4  16.1  37.8 33.6  33.6  50.7 41.3  41.3
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  41.6 17.1  17.1  40.3 18.4  16.1  37.8 33.6  33.6  50.7 41.3  41.3
HCM2kAvg:       3    4     4     2    6     2     2    4     4     1    2     2
*****************************************************************************
```

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	325		0	0	579		3	0		0	25		0	0	0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Initial Bse:	0	325		0	0	579		3	0		0	25		0	0	0
Added Vol:	0	92		0	0	69		6	0		0	5		0	0	0
PasserByVol:	0	19		0	0	28		0	0		0	0		0	0	0
Initial Fut:	0	436		0	0	676		9	0		0	30		0	0	0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90		0.90	0.90	0.90
PHF Volume:	0	484		0	0	751		10	0		0	33		0	0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0		0	0	0
Final Vol.:	0	484		0	0	751		10	0		0	33		0	0	0

Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 3.3 xxxxx xxxx xxxxx

Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 381 xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 623 xxxx xxxx xxxxx
Move Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 623 xxxx xxxx xxxxx
Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx 0.05 xxxx xxxx xxxx

Level Of Service Module:
Queue: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 0.2 xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 11.1 xxxxx xxxx xxxxx
LOS by Move: * * * * * * * * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.1 xxxxxx
ApproachLOS: * * B *

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.482
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 28.6
Optimal Cycle: 48 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1!	0	0	1	0	0	1	0
Volume Module:																				
Base Vol:	56	244		38	84	450		70	51		1	18		20	0	30
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Initial Bse:	56	244		38	84	450		70	51		1	18		20	0	30
Added Vol:	36	4		0	0	41		11	88		10	8		0	8	0
PasserByVol:	57	-16		0	0	0		0	34		0	48		0	0	0
Initial Fut:	149	232		38	84	491		81	173		11	74		20	8	30
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90		0.90	0.90	0.90
PHF Volume:	166	258		42	93	546		90	192		12	82		22	9	33
Reduct Vol:	0	0		0	0	0		0	0		0	0		0	0	0
Reduced Vol:	166	258		42	93	546		90	192		12	82		22	9	33
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Final Vol.:	166	258		42	93	546		90	192		12	82		22	9	33

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.88	0.88
Lanes:	1.00	1.72	0.28	1.00	1.72	0.28	1.51	0.06	0.43	1.00	0.21	0.79
Final Sat.:	1805	3037	497	1805	3034	500	2648	113	759	1805	353	1323

Capacity Analysis Module:

Vol/Sat:	0.09	0.08	0.08	0.05	0.18	0.18	0.07	0.11	0.11	0.01	0.03	0.03
Crit Moves:	****				****				****		****	
Green/Cycle:	0.19	0.35	0.35	0.21	0.37	0.37	0.22	0.22	0.22	0.05	0.05	0.05
Volume/Cap:	0.48	0.24	0.24	0.24	0.48	0.48	0.32	0.48	0.48	0.24	0.48	0.48
Delay/Veh:	37.2	23.2	23.2	33.0	24.2	24.2	32.6	34.3	34.3	46.8	50.2	50.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.2	23.2	23.2	33.0	24.2	24.2	32.6	34.3	34.3	46.8	50.2	50.2
HCM2kAvg:	5	3	3	3	8	8	4	6	6	1	2	2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.358
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 18.7
Optimal Cycle: 41 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	1	0	0	1	0		
Volume Module:																				
Base Vol:	277	127		22	11	181		22	7		29	225		5	52	14
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Initial Bse:	277	127		22	11	181		22	7		29	225		5	52	14
Added Vol:	37	0		0	0	0		0	0		0	46		0	0	0
PasserByVol:	0	0		0	0	0		0	0		0	0		0	0	0
Initial Fut:	314	127		22	11	181		22	7		29	271		5	52	14
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90		0.90	0.90	0.90
PHF Volume:	349	141		24	12	201		24	8		32	301		6	58	16
Reduct Vol:	0	0		0	0	0		0	0		0	0		0	0	0
Reduced Vol:	349	141		24	12	201		24	8		32	301		6	58	16
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Final Vol.:	349	141		24	12	201		24	8		32	301		6	58	16

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.93	0.93	0.95	0.93	0.93	0.95	1.00	0.75	0.95	0.97	0.97
Lanes:	1.00	1.70	0.30	1.00	1.78	0.22	1.00	1.00	2.00	1.00	0.79	0.21
Final Sat.:	1805	3009	521	1805	3167	385	1805	1900	2842	1805	1449	390

Capacity Analysis Module:

Vol/Sat:	0.19	0.05	0.05	0.01	0.06	0.06	0.00	0.02	0.11	0.00	0.04	0.04
Crit Moves:	****				****		****				****	
Green/Cycle:	0.54	0.63	0.63	0.09	0.18	0.18	0.01	0.10	0.64	0.02	0.11	0.11
Volume/Cap:	0.36	0.07	0.07	0.07	0.36	0.36	0.36	0.16	0.16	0.16	0.36	0.36
Delay/Veh:	13.4	7.3	7.3	41.8	36.5	36.5	58.9	41.2	7.1	50.5	42.2	42.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.4	7.3	7.3	41.8	36.5	36.5	58.9	41.2	7.1	50.5	42.2	42.2
HCM2kAvg:	6	1	1	0	3	3	1	1	2	0	2	2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.464
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 8.7
Optimal Cycle: 47 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	1!	0	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	4	0		10	46		3	31	38	836		5	8	960	86
Growth Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Initial Bse:	4	0		10	46		3	31	38	836		5	8	960	86
Added Vol:	0	0		0	1		0	0	0	7		0	0	8	1
PasserByVol:	0	0		0	0		0	0	0	0		0	0	0	0
Initial Fut:	4	0		10	47		3	31	38	843		5	8	968	87
User Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90	0.90
PHF Volume:	4	0		11	52		3	34	42	937		6	9	1076	97
Reduct Vol:	0	0		0	0		0	0	0	0		0	0	0	0
Reduced Vol:	4	0		11	52		3	34	42	937		6	9	1076	97
PCE Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00
Final Vol.:	4	0		11	52		3	34	42	937		6	9	1076	97

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	1.00	0.89	0.95	0.86	0.86	0.95	0.95	0.95	0.95	0.94	0.94
Lanes:	0.29	0.00	0.71	1.00	0.09	0.91	1.00	1.99	0.01	1.00	1.84	0.16
Final Sat.:	484	0	1210	1805	145	1495	1805	3585	21	1805	3273	294

Capacity Analysis Module:

Vol/Sat:	0.01	0.00	0.01	0.03	0.02	0.02	0.02	0.26	0.26	0.00	0.33	0.33
Crit Moves:			****	****			****				****	
Green/Cycle:	0.02	0.00	0.02	0.06	0.06	0.06	0.05	0.74	0.74	0.01	0.71	0.71
Volume/Cap:	0.46	0.00	0.46	0.46	0.37	0.37	0.46	0.35	0.35	0.35	0.46	0.46
Delay/Veh:	58.3	0.0	58.3	48.3	47.3	47.3	49.9	4.5	4.5	57.1	6.5	6.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	58.3	0.0	58.3	48.3	47.3	47.3	49.9	4.5	4.5	57.1	6.5	6.5
HCM2kAvg:	1	0	1	2	2	2	2	5	5	1	8	8

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: B[11.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Ignore				Ignore				Ignore				Ignore			
Lanes:	0	0	0	0 1	2	0	0	0 1	0	0	1	0 1	1	0	1	0 0
Volume Module:																
Base Vol:	0	0	756		0	0	476		0	697	242		210	716		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	0	0	756		0	0	476		0	697	242		210	716		0
Added Vol:	0	0	0		0	0	0		0	8	0		0	9		0
PasserByVol:	0	0	0		0	0	0		0	0	0		17	0		0
Initial Fut:	0	0	756		0	0	476		0	705	242		227	725		0
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00		0.00
PHF Adj:	0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90		0.00
PHF Volume:	0	0	0		0	0	0		0	783	0		252	806		0
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0		0
Final Vol.:	0	0	0		0	0	0		0	783	0		252	806		0
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				783	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				844	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				844	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx				0.30	xxxx	xxxx	

Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				1.3	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				11.1	xxxx	xxxxx	
LOS by Move:	*	*	*	*	*	*	*	*	*	B	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	*			*			*			*						

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.512
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 11.2
Optimal Cycle: 33 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Permitted				Permitted			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1!	0 1	0	0	0	0 0	0	0	2	0 1	0	0	2	0 1
Volume Module:																
Base Vol:	146	0	246		0	0	0		0	1174	279		0	780	995	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	146	0	246		0	0	0		0	1174	279		0	780	995	
Added Vol:	0	0	10		0	0	0		0	8	0		0	23	0	
PasserByVol:	0	0	12		0	0	0		0	0	0		0	17	0	
Initial Fut:	146	0	268		0	0	0		0	1182	279		0	820	995	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.00		0.90	0.90	0.00	
PHF Volume:	162	0	298		0	0	0		0	1313	0		0	911	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	162	0	298		0	0	0		0	1313	0		0	911	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
Final Vol.:	162	0	298		0	0	0		0	1313	0		0	911	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.89	1.00	0.89		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Lanes:	1.35	0.00	1.65		0.00	0.00	0.00		0.00	2.00	1.00		0.00	2.00	1.00	
Final Sat.:	2281	0	2778		0	0	0		0	3610	1900		0	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.07	0.00	0.11		0.00	0.00	0.00		0.00	0.36	0.00		0.00	0.25	0.00	
Crit Moves:			****							****						
Green/Cycle:	0.21	0.00	0.21		0.00	0.00	0.00		0.00	0.71	0.00		0.00	0.71	0.00	
Volume/Cap:	0.34	0.00	0.51		0.00	0.00	0.00		0.00	0.51	0.00		0.00	0.36	0.00	
Delay/Veh:	33.8	0.0	35.5		0.0	0.0	0.0		0.0	6.8	0.0		0.0	5.7	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	33.8	0.0	35.5		0.0	0.0	0.0		0.0	6.8	0.0		0.0	5.7	0.0	
HCM2kAvg:	3	0	6		0	0	0		0	9	0		0	5	0	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.814
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 31.5
Optimal Cycle: 90 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Ovl				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	1 0	1	0	1	0 1	2	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	259	55	35		149	66	266		353	720	347		92	1250	109	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	259	55	35		149	66	266		353	720	347		92	1250	109	
Added Vol:	0	5	0		17	5	23		18	0	0		0	0	14	
PasserByVol:	0	0	0		10	0	35		22	-10	0		0	-19	19	
Initial Fut:	259	60	35		176	71	324		393	710	347		92	1231	142	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	288	67	39		196	79	360		437	789	386		102	1368	158	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	288	67	39		196	79	360		437	789	386		102	1368	158	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	288	67	39		196	79	360		437	789	386		102	1368	158	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	0.95	0.95		0.95	1.00	0.85		0.92	0.95	0.85		0.95	0.95	0.85	
Lanes:	2.00	0.63	0.37		1.00	1.00	1.00		2.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	3502	1134	661		1805	1900	1615		3502	3610	1615		1805	3610	1615	
Capacity Analysis Module:																
Vol/Sat:	0.08	0.06	0.06		0.11	0.04	0.22		0.12	0.22	0.24		0.06	0.38	0.10	
Crit Moves:	****						****		****					****		
Green/Cycle:	0.10	0.08	0.08		0.14	0.12	0.27		0.15	0.49	0.59		0.13	0.47	0.61	
Volume/Cap:	0.81	0.75	0.75		0.75	0.34	0.81		0.81	0.44	0.40		0.44	0.81	0.16	
Delay/Veh:	57.5	65.7	65.7		53.0	41.2	45.0		50.3	16.7	11.2		41.7	26.2	8.6	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	57.5	65.7	65.7		53.0	41.2	45.0		50.3	16.7	11.2		41.7	26.2	8.6	
HCM2kAvg:	7	5	5		8	3	13		9	8	6		4	20	2	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 0.884
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 31.6
Optimal Cycle: 110 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	230	12	475	31	11	15	28	1255	275	496	1019	70								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	230	12	475	31	11	15	28	1255	275	496	1019	70								
Added Vol:	0	0	1	7	0	0	0	18	0	1	20	9								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	230	12	476	38	11	15	28	1273	275	497	1039	79								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	256	13	529	42	12	17	31	1414	306	552	1154	88								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	256	13	529	42	12	17	31	1414	306	552	1154	88								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	256	13	529	42	12	17	31	1414	306	552	1154	88								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	1.00	0.85	0.95	0.91	0.91	0.95	0.95	0.85	0.92	0.94	0.94								
Lanes:	1.00	1.00	1.00	1.00	0.42	0.58	1.00	2.00	1.00	2.00	1.86	0.14								
Final Sat.:	1805	1900	1615	1805	734	1001	1805	3610	1615	3502	3318	252								
Capacity Analysis Module:																				
Vol/Sat:	0.14	0.01	0.33	0.02	0.02	0.02	0.02	0.39	0.19	0.16	0.35	0.35								
Crit Moves:			****	****				****		****										
Green/Cycle:	0.20	0.19	0.37	0.03	0.02	0.02	0.03	0.44	0.64	0.18	0.59	0.59								
Volume/Cap:	0.72	0.04	0.88	0.88	0.72	0.72	0.59	0.88	0.30	0.88	0.59	0.59								
Delay/Veh:	45.0	32.9	44.1	136.0	97.4	97.4	64.0	31.7	8.2	54.2	13.2	13.2								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	45.0	32.9	44.1	136.0	97.4	97.4	64.0	31.7	8.2	54.2	13.2	13.2								
HCM2kAvg:	9	0	19	3	2	2	2	23	4	12	12	12								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.176
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 85.7
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Ovl					Ignore				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0	0	1	1	0	0	2	0	0	2	0	1	2	0	2	0	0
Volume Module:																				
Base Vol:	0	0	0	1248	3	550	0	1631	130	413	1035	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	1248	3	550	0	1631	130	413	1035	0								
Added Vol:	0	0	0	18	0	0	0	26	0	0	29	0								
PasserByVol:	0	0	0	12	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	0	1278	3	550	0	1657	130	413	1064	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00								
PHF Volume:	0	0	0	1420	3	611	0	1841	144	459	1182	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	1420	3	611	0	1841	144	459	1182	0								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00								
Final Vol.:	0	0	0	1420	3	611	0	1841	144	459	1182	0								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	1.00	1.00	1.00	0.85	0.85	0.75	1.00	0.95	0.85	0.92	0.95	1.00								
Lanes:	0.00	1.00	0.00	1.99	0.01	2.00	0.00	2.00	1.00	2.00	2.00	0.00								
Final Sat.:	0	1900	0	3222	8	2842	0	3610	1615	3502	3610	0								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.44	0.44	0.21	0.00	0.51	0.09	0.13	0.33	0.00								
Crit Moves:				****				****		****										
Green/Cycle:	0.00	0.00	0.00	0.37	0.37	0.37	0.00	0.43	0.43	0.11	0.55	0.00								
Volume/Cap:	0.00	0.00	0.00	1.18	1.18	0.57	0.00	1.18	0.21	1.18	0.60	0.00								
Delay/Veh:	0.0	0.0	0.0	119.3	119	25.7	0.0	114	17.8	147.3	15.9	0.0								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	0.0	0.0	0.0	119.3	119	25.7	0.0	114	17.8	147.3	15.9	0.0								
HCM2kAvg:	0	0	0	44	44	8	0	48	3	15	13	0								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.363
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 107.1
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ovl				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1	0	0	1	0	0	0	0	0	2	0	2	0	0	0	0	2	0	1
Volume Module:																				
Base Vol:	146	5	497	0	0	0	508	2371	0	0	1302	1055								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	146	5	497	0	0	0	508	2371	0	0	1302	1055								
Added Vol:	0	0	0	0	0	0	0	44	0	0	29	21								
PasserByVol:	0	0	0	0	0	0	0	12	0	0	0	16								
Initial Fut:	146	5	497	0	0	0	508	2427	0	0	1331	1092								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90								
PHF Volume:	162	6	552	0	0	0	564	2697	0	0	1479	1213								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	162	6	552	0	0	0	564	2697	0	0	1479	1213								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00								
Final Vol.:	162	6	552	0	0	0	564	2697	0	0	1479	1213								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.85	0.85	0.85	1.00	1.00	1.00	0.92	0.95	1.00	1.00	0.95	0.85								
Lanes:	1.93	0.07	1.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00								
Final Sat.:	3123	107	1615	0	0	0	3502	3610	0	0	3610	1615								
Capacity Analysis Module:																				
Vol/Sat:	0.05	0.05	0.34	0.00	0.00	0.00	0.16	0.75	0.00	0.00	0.41	0.75								
Crit Moves:			****				****					****								
Green/Cycle:	0.25	0.25	0.25	0.00	0.00	0.00	0.12	0.67	0.00	0.00	0.55	0.55								
Volume/Cap:	0.21	0.21	1.36	0.00	0.00	0.00	1.36	1.12	0.00	0.00	0.74	1.36								
Delay/Veh:	29.7	29.7	216.3	0.0	0.0	0.0	222.6	75.2	0.0	0.0	18.6	193.3								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	29.7	29.7	216.3	0.0	0.0	0.0	222.6	75.2	0.0	0.0	18.6	193.3								
HCM2kAvg:	2	2	37	0	0	0	21	62	0	0	18	78								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: C[16.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	2	0	0
Volume Module:																				
Base Vol:	0	0	79	0	0	0	0	0	2349	519	0	2357	0							
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	79	0	0	0	0	0	2349	519	0	2357	0							
Added Vol:	0	0	0	0	0	0	0	0	18	26	0	50	0							
PasserByVol:	0	0	0	0	0	0	0	0	12	0	0	16	0							
Initial Fut:	0	0	79	0	0	0	0	0	2379	545	0	2423	0							
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00							
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90							
PHF Volume:	0	0	88	0	0	0	0	0	2643	606	0	2692	0							
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0	0							
Final Vol.:	0	0	88	0	0	0	0	0	2643	606	0	2692	0							
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx							
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx							
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	661	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	410	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	410	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.21	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
Queue:	xxxxx	xxxx	0.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Stopped Del:	xxxxx	xxxx	16.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	C	*	*	*	*	*	*	*	*	*								
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	16.2			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	C			*			*			*										

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.289
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 132.3
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	0	0	1	0	0	2	2	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	285	41		32		129	42		402		570	1701		157		93	1670			97
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	285	41		32		129	42		402		570	1701		157		93	1670			97
Added Vol:	0	0		0		0	0		0		0	18		0		0	50			0
PasserByVol:	0	0		0		0	0		0		0	12		0		0	16			0
Initial Fut:	285	41		32		129	42		402		570	1731		157		93	1736			97
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90			0.90
PHF Volume:	317	46		36		143	47		447		633	1923		174		103	1929			108
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0			0
Reduced Vol:	317	46		36		143	47		447		633	1923		174		103	1929			108
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Final Vol.:	317	46		36		143	47		447		633	1923		174		103	1929			108
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900			1900
Adjustment:	0.93	0.93		0.93		0.94	0.94		0.73		0.88	0.89		0.89		0.90	0.90			0.90
Lanes:	1.66	0.19		0.15		0.75	0.25		2.00		2.00	1.83		0.17		1.00	1.89			0.11
Final Sat.:	2937	336		263		1354	441		2786		3334	3113		282		1718	3229			180
Capacity Analysis Module:																				
Vol/Sat:	0.11	0.14		0.14		0.11	0.11		0.16		0.19	0.62		0.62		0.06	0.60			0.60
Crit Moves:		****							****		****						****			
Green/Cycle:	0.11	0.11		0.11		0.12	0.12		0.12		0.15	0.56		0.56		0.05	0.46			0.46
Volume/Cap:	1.03	1.29		1.29		0.85	0.85		1.29		1.29	1.11		1.11		1.11	1.29			1.29
Delay/Veh:	97.4	197		197.2		68.3	68.3		194.1		187.6	80.0		80.0		173.5	162			162.0
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
AdjDel/Veh:	97.4	197		197.2		68.3	68.3		194.1		187.6	80.0		80.0		173.5	162			162.0
HCM2kAvg:	11	17		17		9	9		15		22	49		49		7	61			61

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 1.453
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 192.3
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Include					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1
Volume Module:																				
Base Vol:	692	467		55		179	372		189		320	814		362		145	756			84
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	692	467		55		179	372		189		320	814		362		145	756			84
Added Vol:	50	36		13		0	32		0		0	0		18		12	0			0
PasserByVol:	29	0		15		0	0		0		0	-15		27		13	-13			0
Initial Fut:	771	503		83		179	404		189		320	799		407		170	743			84
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90			0.90
PHF Volume:	857	559		92		199	449		210		356	888		452		189	826			93
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0			0
Reduced Vol:	857	559		92		199	449		210		356	888		452		189	826			93
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Final Vol.:	857	559		92		199	449		210		356	888		452		189	826			93
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900			1900
Adjustment:	0.90	0.90		0.81		0.90	0.86		0.86		0.90	0.86		0.86		0.90	0.90			0.81
Lanes:	1.00	2.00		1.00		1.00	1.36		0.64		1.00	1.33		0.67		1.00	2.00			1.00
Final Sat.:	1718	3437		1537		1718	2229		1043		1718	2161		1101		1718	3437			1537
Capacity Analysis Module:																				
Vol/Sat:	0.50	0.16		0.06		0.12	0.20		0.20		0.21	0.41		0.41		0.11	0.24			0.06
Crit Moves:	****						****					****				****				
Green/Cycle:	0.34	0.28		0.36		0.20	0.14		0.14		0.17	0.28		0.28		0.08	0.19			0.39
Volume/Cap:	1.45	0.58		0.17		0.58	1.45		1.45		1.25	1.45		1.45		1.45	1.25			0.15
Delay/Veh:	246.2	31.7		22.1		38.6	259		259.0		179.0	246		245.9		287.7	164			19.7
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
AdjDel/Veh:	246.2	31.7		22.1		38.6	259		259.0		179.0	246		245.9		287.7	164			19.7
HCM2kAvg:	63	8		2		7	25		25		23	48		48		16	25			2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: D[31.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	8	76		65		148	363		8		2	8		5		75	5			1
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	8	76		65		148	363		8		2	8		5		75	5			1
Added Vol:	0	0		0		0	26		0		0	0		0		0	0			0
PasserByVol:	0	0		0		0	0		0		0	0		0		0	0			0
Initial Fut:	8	76		65		148	389		8		2	8		5		75	5			1
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90			0.90
PHF Volume:	9	84		72		164	432		9		2	9		6		83	6			1
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0			0
Final Vol.:	9	84		72		164	432		9		2	9		6		83	6			1
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx			4.1	xxxx	xxxxx			7.1	6.5		6.2		7.1	6.5			6.2
FollowUpTim:	2.2	xxxx	xxxxx			2.2	xxxx	xxxxx			3.5	4.0		3.3		3.5	4.0			3.3
Capacity Module:																				
Cnflict Vol:	441	xxxx	xxxxx			157	xxxx	xxxxx			907	940		437		911	908			121
Potent Cap.:	1130	xxxx	xxxxx			1436	xxxx	xxxxx			259	266		624		257	277			936
Move Cap.:	1130	xxxx	xxxxx			1436	xxxx	xxxxx			228	230		624		222	240			936
Volume/Cap:	0.01	xxxx	xxxx			0.11	xxxx	xxxx			0.01	0.04		0.01		0.37	0.02			0.00
Level Of Service Module:																				
Queue:	0.0	xxxx	xxxxx			0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Stopped Del:	8.2	xxxx	xxxxx			7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	A	*		*		A	*		*		*	*		*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	291	xxxxx			xxxx	225	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	0.2	xxxxx			xxxxx	1.8	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	18.1	xxxxx			xxxxx	31.2	xxxxx		
Shared LOS:	*	*		*		*	*		*		*	C		*		*	D		*	
ApproachDel:	xxxxxx					xxxxxx						18.1					31.2			
ApproachLOS:	*					*						C					D			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 4.7 Worst Case Level Of Service: B[11.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0
Volume Module:																				
Base Vol:	0	56		13		243	179		0		0	0		0		15	0			40
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	0	56		13		243	179		0		0	0		0		15	0			40
Added Vol:	0	0		0		13	13		0		0	0		0		0	0			0
PasserByVol:	0	0		0		0	0		0		0	0		0		0	0			0
Initial Fut:	0	56		13		256	192		0		0	0		0		15	0			40
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90			0.90
PHF Volume:	0	62		14		284	213		0		0	0		0		17	0			44
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0			0
Final Vol.:	0	62		14		284	213		0		0	0		0		17	0			44
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx			4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx			6.4	xxxx	6.2				
FollowUpTim:	xxxxx	xxxx	xxxxx			2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx			3.5	xxxx	3.3				
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx			77	xxxx	xxxxx	xxxx	xxxx	xxxxx			852	xxxx	69				
Potent Cap.:	xxxx	xxxx	xxxxx			1535	xxxx	xxxxx	xxxx	xxxx	xxxxx			333	xxxx	999				
Move Cap.:	xxxx	xxxx	xxxxx			1535	xxxx	xxxxx	xxxx	xxxx	xxxxx			276	xxxx	999				
Volume/Cap:	xxxx	xxxx	xxxx			0.19	xxxx	xxxx	xxxx	xxxx	xxxx			0.06	xxxx	0.04				
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx			0.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
Stopped Del:	xxxxx	xxxx	xxxxx			7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	*	*		*		A	*		*		*	*		*						
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	583	xxxxx							
SharedQueue:	xxxxx	xxxx	xxxxx			0.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.3	xxxxx					
Shrd StpDel:	xxxxx	xxxx	xxxxx			7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx					
Shared LOS:	*	*		*		A	*		*		*	*		*		B	*			
ApproachDel:	xxxxxx					xxxxxx						xxxxxx				11.9				
ApproachLOS:	*					*						*				B				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #9 BANEY LN / WALMART WEST DRWY
*******************************************************************************
Average Delay (sec/veh):       0.6   Worst Case Level Of Service:       B[ 10.3]
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
------------||---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       7    0   10    0    0    0    0  249    5    3   55    0
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    7    0   10    0    0    0    0  249    5    3   55    0
Added Vol:      0    0    0    0    0    0    0   13    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    7    0   10    0    0    0    0  262    5    3   55    0
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume:     8    0   11    0    0    0    0  291    6    3   61    0
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Final Vol.:     8    0   11    0    0    0    0  291    6    3   61    0
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------||---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  362 xxxx   294  xxxx xxxx xxxxx  xxxx xxxx xxxxx   297 xxxx xxxxx
Potent Cap.:  637 xxxx   745  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1265 xxxx xxxxx
Move Cap.:    636 xxxx   745  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1265 xxxx xxxxx
Volume/Cap:  0.01 xxxx  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------||---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:       xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.9 xxxx xxxxx
LOS by Move:   *    *    *    *    *    *    *    *    *    A    *    *
Movement:    LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx  696 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd StpDel:xxxxx 10.3 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.9 xxxx xxxxx
Shared LOS:    *    B    *    *    *    *    *    *    *    A    *    *
ApproachDel:      10.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
```


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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #10 BANEY LN / WALMART CENTRAL DRWY
*******************************************************************************
Average Delay (sec/veh):       2.2   Worst Case Level Of Service:       B[ 11.7]
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        1  0  0  0  1    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
------------||---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   67    0    0    0    0  308  122   60  116    0
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    0    0   67    0    0    0    0  308  122   60  116    0
Added Vol:      0    0   18    0    0    0    0    2   11    9    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    0    0   85    0    0    0    0  310  133   69  116    0
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume:     0    0   94    0    0    0    0  344  148   77  129    0
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Final Vol.:     0    0   94    0    0    0    0  344  148   77  129    0
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------||---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   418  xxxx xxxx xxxxx  xxxx xxxx xxxxx   492 xxxx xxxxx
Potent Cap.: xxxx xxxx   635  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1071 xxxx xxxxx
Move Cap.:   xxxx xxxx   635  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1071 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.15  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.07 xxxx  xxxx
------------||---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:       xxxxx xxxx   0.5 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.2 xxxx xxxxx
Stopped Del:xxxxx xxxx  11.7 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx
LOS by Move:   *    *    B    *    *    *    *    *    *    A    *    *
Movement:    LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.2 xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   8.6 xxxx xxxxx
Shared LOS:    *    *    *    *    *    *    *    *    *    A    *    *
ApproachDel:      11.7           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        B                *                *                *
```


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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #11 BANEY LN / WALMART EAST DRWY
*******************************************************************************
Average Delay (sec/veh):      22.5   Worst Case Level Of Service:       F[231.6]
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1    0  0  1! 0  0    1  0  0  1  0    1  0  0  1  0
------------||---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0  164   82    2    3    1  376    8  156  173   28
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    0    0  164   82    2    3    1  376    8  156  173   28
Added Vol:      0    0   21    0    0    0    0   19    1    7    9    0
PasserByVol:    0    0   38    0    0    0    0    0    0   31    0    0
Initial Fut:    0    0  223   82    2    3    1  395    9  194  182   28
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume:     0    0  248   91    2    3    1  439   10  216  202   31
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Final Vol.:     0    0  248   91    2    3    1  439   10  216  202   31
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.2   7.1  6.5  6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3   3.5  4.0  3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------||---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   444  1219 1100  218   233 xxxx xxxxx   449 xxxx xxxxx
Potent Cap.: xxxx xxxx   618   159  214  827  1334 xxxx xxxxx  1111 xxxx xxxxx
Move Cap.:   xxxx xxxx   618    81  172  827  1334 xxxx xxxxx  1111 xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.40  1.13 0.01 0.00  0.00 xxxx  xxxx  0.19 xxxx  xxxx
------------||---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:       xxxxx xxxx   1.9 xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.7 xxxx xxxxx
Stopped Del:xxxxx xxxx  14.7 xxxxx xxxx xxxxx   7.7 xxxx xxxxx   9.0 xxxx xxxxx
LOS by Move:   *    *    B    *    *    *    A    *    *    A    *    *
Movement:    LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx   84 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx  6.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx  232 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *    *    *    F    *    *    *    *    *    *    *
ApproachDel:      14.7           231.6           xxxxxx           xxxxxx
ApproachLOS:        B                F                *                *
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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*******************************************************************************
Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive
*******************************************************************************
Cycle (sec):       100                Critical Vol./Cap. (X):          0.559
Loss Time (sec):    16 (Y+R =  4 sec) Average Delay (sec/veh):        28.0
Optimal Cycle:      54                Level Of Service:                   C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------||---------------||---------------||---------------||---------------|
Control:      Protected        Protected        Protected        Protected
Rights:         Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1  1  0    1  0  2  0  1    2  0  0  1  0    1  0  0  1  0
------------||---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     128  669   38   48  549  216  410   11  201    8   13   35
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:  128  669   38   48  549  216  410   11  201    8   13   35
Added Vol:      5   73    8    0   54    8   26    4    9    7    4    0
PasserByVol:    0   14    0    0    9   31   30    0    8    0    0    0
Initial Fut:  133  756   46   48  612  255  466   15  218   15   17   35
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume:   148  840   51   53  680  283  518   17  242   17   19   39
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  148  840   51   53  680  283  518   17  242   17   19   39
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:   148  840   51   53  680  283  518   17  242   17   19   39
------------||---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  0.90 0.90 0.90 0.90 0.90 0.81 0.90 0.84 0.84 0.93 0.88 0.88
Lanes:       1.00 1.89 0.11 1.00 2.00 1.00 2.00 0.06 0.94 1.00 0.33 0.67
Final Sat.:  1718 3210  195 1718 3437 1537 3432  103 1498 1769  547 1127
------------||---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.26 0.26 0.03 0.20 0.18 0.15 0.16 0.16 0.01 0.03 0.03
Crit Moves:  ****               ****               ****               ****
Green/Cycle: 0.15 0.45 0.45 0.05 0.35 0.35 0.27 0.31 0.31 0.02 0.06 0.06
Volume/Cap:  0.56 0.58 0.58 0.58 0.56 0.52 0.56 0.52 0.52 0.52 0.56 0.56
Delay/Veh:   41.8 20.7 20.7 54.8 26.6 26.5 32.1 29.0 29.0 62.3 52.3 52.3
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:  41.8 20.7 20.7 54.8 26.6 26.5 32.1 29.0 29.0 62.3 52.3 52.3
HCM2kAvg:      5   10   10    3    9    7    8    7    7    1    3    3
*******************************************************************************
```

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0 0	0	0	1	1 0	0	0	0	0 1	0	0	0	0 0
Volume Module:																
Base Vol:	0	835	0	0	754	4	0	0	69	0	0	0				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	835	0	0	754	4	0	0	69	0	0	0				
Added Vol:	0	87	0	0	63	8	0	0	6	0	0	0				
PasserByVol:	0	14	0	0	17	0	0	0	0	0	0	0				
Initial Fut:	0	936	0	0	834	12	0	0	75	0	0	0				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	0	1040	0	0	927	13	0	0	83	0	0	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Final Vol.:	0	1040	0	0	927	13	0	0	83	0	0	0				

Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 3.3 xxxxx xxxx xxxxx

Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 470 xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 545 xxxx xxxx xxxxx
Move Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 545 xxxx xxxx xxxxx
Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx 0.15 xxxx xxxx xxxx

Level Of Service Module:
Queue: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 0.5 xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 12.8 xxxxx xxxx xxxxx
LOS by Move: * * * * * * * * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 12.8 xxxxxx
ApproachLOS: * * B *

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.620
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 29.4
Optimal Cycle: 59 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0	1	0	1!	0 0
Volume Module:																
Base Vol:	38	595	60	92	701	30	167	0	23	45	0	73				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	38	595	60	92	701	30	167	0	23	45	0	73				
Added Vol:	37	5	0	0	39	11	81	9	9	0	8	0				
PasserByVol:	60	-18	0	0	0	0	32	0	43	0	0	0				
Initial Fut:	135	582	60	92	740	41	280	9	75	45	8	73				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	150	647	67	102	822	46	311	10	83	50	9	81				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	150	647	67	102	822	46	311	10	83	50	9	81				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	150	647	67	102	822	46	311	10	83	50	9	81				

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.94	0.94	0.93	0.93	0.93	0.95	0.87	0.87
Lanes:	1.00	1.81	0.19	1.00	1.90	0.10	1.63	0.04	0.33	1.00	0.10	0.90
Final Sat.:	1805	3227	333	1805	3393	188	2881	71	594	1805	162	1481

Capacity Analysis Module:

Vol/Sat:	0.08	0.20	0.20	0.06	0.24	0.24	0.11	0.14	0.14	0.03	0.05	0.05
Crit Moves:	****				****				****			****
Green/Cycle:	0.13	0.41	0.41	0.12	0.39	0.39	0.23	0.23	0.23	0.09	0.09	0.09
Volume/Cap:	0.62	0.49	0.49	0.49	0.62	0.62	0.48	0.62	0.62	0.31	0.62	0.62
Delay/Veh:	45.7	22.1	22.1	43.3	25.3	25.3	34.0	36.6	36.6	43.9	51.9	51.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	45.7	22.1	22.1	43.3	25.3	25.3	34.0	36.6	36.6	43.9	51.9	51.9
HCM2kAvg:	6	8	8	4	11	11	6	8	8	2	4	4

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.556
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 17.8
Optimal Cycle: 53 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0 2	1	0	0	1 0
Volume Module:																
Base Vol:	486	283	12	23	188	23	47	84	611	15	53	26				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	486	283	12	23	188	23	47	84	611	15	53	26				
Added Vol:	39	0	0	0	0	0	0	0	45	0	0	0				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	525	283	12	23	188	23	47	84	656	15	53	26				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	583	314	13	26	209	26	52	93	729	17	59	29				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	583	314	13	26	209	26	52	93	729	17	59	29				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	583	314	13	26	209	26	52	93	729	17	59	29				

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.93	0.93	0.95	1.00	0.75	0.95	0.95	0.95
Lanes:	1.00	1.92	0.08	1.00	1.78	0.22	1.00	1.00	2.00	1.00	0.67	0.33
Final Sat.:	1805	3442	146	1805	3165	387	1805	1900	2842	1805	1212	595

Capacity Analysis Module:

Vol/Sat:	0.32	0.09	0.09	0.01	0.07	0.07	0.03	0.05	0.26	0.01	0.05	0.05
Crit Moves:	****				****		****				****	
Green/Cycle:	0.58	0.61	0.61	0.09	0.12	0.12	0.05	0.12	0.70	0.02	0.09	0.09
Volume/Cap:	0.56	0.15	0.15	0.15	0.56	0.56	0.56	0.42	0.37	0.42	0.56	0.56
Delay/Veh:	13.6	8.6	8.6	42.0	43.2	43.2	53.4	42.2	6.2	55.2	48.1	48.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	13.6	8.6	8.6	42.0	43.2	43.2	53.4	42.2	6.2	55.2	48.1	48.1
HCM2kAvg:	12	2	2	1	4	4	3	3	5	1	3	3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.711
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 24.2
Optimal Cycle: 71 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	1	0	0	1 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	4	9	13	300	2	88	93	1096	18	12	846	212				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	4	9	13	300	2	88	93	1096	18	12	846	212				
Added Vol:	0	0	0	1	0	0	0	6	0	0	7	1				
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0				
Initial Fut:	4	9	13	301	2	88	93	1102	18	12	853	213				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	4	10	14	334	2	98	103	1224	20	13	948	237				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	4	10	14	334	2	98	103	1224	20	13	948	237				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	4	10	14	334	2	98	103	1224	20	13	948	237				

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.95	0.85	0.85	0.95	0.95	0.95	0.95	0.92	0.92
Lanes:	0.15	0.35	0.50	1.00	0.02	0.98	1.00	1.97	0.03	1.00	1.60	0.40
Final Sat.:	271	609	879	1805	36	1585	1805	3545	58	1805	2802	700

Capacity Analysis Module:

Vol/Sat:	0.02	0.02	0.02	0.19	0.06	0.06	0.06	0.35	0.35	0.01	0.34	0.34
Crit Moves:		****		****			****				****	
Green/Cycle:	0.02	0.02	0.02	0.26	0.26	0.26	0.08	0.54	0.54	0.01	0.48	0.48
Volume/Cap:	0.71	0.71	0.71	0.71	0.24	0.24	0.71	0.63	0.63	0.63	0.71	0.71
Delay/Veh:	93.5	93.5	93.5	38.6	29.4	29.4	60.0	16.5	16.5	98.8	22.2	22.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	93.5	93.5	93.5	38.6	29.4	29.4	60.0	16.5	16.5	98.8	22.2	22.2
HCM2kAvg:	2	2	2	11	2	2	5	14	14	1	15	15

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: D[33.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Ignore				Ignore				Ignore				Ignore			
Lanes:	0	0	0	0 1	2	0	0	0 1	0	0	1	0 1	1	0	1	0 0
Volume Module:																
Base Vol:	0	0	1021		0	0	355		0	1438	263		254	983		0
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	0	0	1021		0	0	355		0	1438	263		254	983		0
Added Vol:	0	0	0		0	0	0		0	7	0		0	8		0
PasserByVol:	0	0	0		0	0	0		0	0	0		13	0		0
Initial Fut:	0	0	1021		0	0	355		0	1445	263		267	991		0
User Adj:	1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00		0.00
PHF Adj:	0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90		0.00
PHF Volume:	0	0	0		0	0	0		0	1606	0		297	1101		0
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0		0
Final Vol.:	0	0	0		0	0	0		0	1606	0		297	1101		0
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				4.1	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1606	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	413	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	413	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.72	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	5.6	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	33.1	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	D	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	*			*			*			*						

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.831
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 14.5
Optimal Cycle: 73 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Permitted				Permitted			
Rights:	Include				Include				Ignore				Ignore			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1!	0 1	0	0	0	0 0	0	0	2	0 1	0	0	2	0 1
Volume Module:																
Base Vol:	228	0	326		0	0	0		0	2009	450		0	1009	932	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	228	0	326		0	0	0		0	2009	450		0	1009	932	
Added Vol:	0	0	13		0	0	0		0	7	0		0	24	0	
PasserByVol:	0	0	15		0	0	0		0	0	0		0	13	0	
Initial Fut:	228	0	354		0	0	0		0	2016	450		0	1046	932	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.00		0.90	0.90	0.00	
PHF Volume:	253	0	393		0	0	0		0	2240	0		0	1162	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	253	0	393		0	0	0		0	2240	0		0	1162	0	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00	
Final Vol.:	253	0	393		0	0	0		0	2240	0		0	1162	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.89	1.00	0.89		1.00	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00	
Lanes:	1.39	0.00	1.61		0.00	0.00	0.00		0.00	2.00	1.00		0.00	2.00	1.00	
Final Sat.:	2358	0	2725		0	0	0		0	3610	1900		0	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.11	0.00	0.14		0.00	0.00	0.00		0.00	0.62	0.00		0.00	0.32	0.00	
Crit Moves:			****							****						
Green/Cycle:	0.17	0.00	0.17		0.00	0.00	0.00		0.00	0.75	0.00		0.00	0.75	0.00	
Volume/Cap:	0.62	0.00	0.83		0.00	0.00	0.00		0.00	0.83	0.00		0.00	0.43	0.00	
Delay/Veh:	39.4	0.0	47.5		0.0	0.0	0.0		0.0	10.8	0.0		0.0	4.9	0.0	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	39.4	0.0	47.5		0.0	0.0	0.0		0.0	10.8	0.0		0.0	4.9	0.0	
HCM2kAvg:	6	0	10		0	0	0		0	25	0		0	7	0	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 1.034
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 65.8
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Ovl				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	0	1 0	1	0	1	0 1	2	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	363	176	67		261	84	587		579	1505	251		92	991	151	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	363	176	67		261	84	587		579	1505	251		92	991	151	
Added Vol:	0	4	0		17	4	24		21	0	0		0	0	15	
PasserByVol:	0	0	0		14	0	26		30	-15	0		0	-12	12	
Initial Fut:	363	180	67		292	88	637		630	1490	251		92	979	178	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	403	200	74		324	98	708		700	1656	279		102	1088	198	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	403	200	74		324	98	708		700	1656	279		102	1088	198	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	403	200	74		324	98	708		700	1656	279		102	1088	198	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.92	0.96	0.96		0.95	1.00	0.85		0.92	0.95	0.85		0.95	0.95	0.85	
Lanes:	2.00	0.73	0.27		1.00	1.00	1.00		2.00	2.00	1.00		1.00	2.00	1.00	
Final Sat.:	3502	1328	494		1805	1900	1615		3502	3610	1615		1805	3610	1615	
Capacity Analysis Module:																
Vol/Sat:	0.12	0.15	0.15		0.18	0.05	0.44		0.20	0.46	0.17		0.06	0.30	0.12	
Crit Moves:	****						****			****			****			
Green/Cycle:	0.11	0.16	0.16		0.19	0.23	0.43		0.20	0.44	0.55		0.05	0.30	0.49	
Volume/Cap:	1.03	0.97	0.97		0.97	0.22	1.02		1.01	1.03	0.31		1.03	1.01	0.25	
Delay/Veh:	99.1	86.0	86.0		80.4	31.5	68.2		75.7	59.7	12.2		147.4	63.9	15.3	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	99.1	86.0	86.0		80.4	31.5	68.2		75.7	59.7	12.2		147.4	63.9	15.3	
HCM2kAvg:	12	13	13		15	2	30		17	35	5		7	24	4	

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-----------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                   2010 Plus Prj SAT Peak Hour Conditions
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #1 E. 20th Street / Whitman Road
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.986
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):      46.6
Optimal Cycle:      166              Level Of Service:                 D
*****************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Protected
Rights:           Ovl            Include            Ovl            Include
Min. Green:    0     0     0     0     0     0     0     0     0     0     0     0
Lanes:       1  0  1  0  1   1  0  0  1  0   1  0  2  0  1   2  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     232    19   602   106    27    50    46  1097   289   656   918   112
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  232    19   602   106    27    50    46  1097   289   656   918   112
Added Vol:      0     0     1     6     0     0     0    23     0     1    27     8
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  232    19   603   112    27    50    46  1120   289   657   945   120
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:   258    21   670   124    30    56    51  1244   321   730  1050   133
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  258    21   670   124    30    56    51  1244   321   730  1050   133
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Final Vol.:   258    21   670   124    30    56    51  1244   321   730  1050   133
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  1.00  0.85  0.95  0.90  0.90  0.95  0.95  0.85  0.92  0.93  0.93
Lanes:       1.00  1.00  1.00  1.00  0.35  0.65  1.00  2.00  1.00  2.00  1.77  0.23
Final Sat.:  1805  1900  1615  1805   602  1114  1805  3610  1615  3502  3149   400
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14  0.01  0.41  0.07  0.05  0.05  0.03  0.34  0.20  0.21  0.33  0.33
Crit Moves:              ****  ****                    ****        ****
Green/Cycle: 0.21  0.21  0.42  0.07  0.07  0.07  0.04  0.35  0.56  0.21  0.52  0.52
Volume/Cap:  0.69  0.05  0.99  0.99  0.69  0.69  0.65  0.99  0.36  0.99  0.65  0.65
Delay/Veh:   42.1  31.7  59.7 122.1  60.6  60.6  63.9  54.3  12.5  68.9  18.3  18.3
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  42.1  31.7  59.7 122.1  60.6  60.6  63.9  54.3  12.5  68.9  18.3  18.3
HCM2kAvg:       9     1    27     8     4     4     3    25     5    17    14    14
*****************************************************************************
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-----------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                   2010 Plus Prj SAT Peak Hour Conditions
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #2 E. 20th Street / SB Sr-99 Ramps
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        1.028
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):      46.2
Optimal Cycle:      180              Level Of Service:                 D
*****************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:         Include          Include            Ovl             Ignore
Min. Green:    0     0     0     0     0     0     0     0     0     0     0     0
Lanes:       0  0  1! 0  0   1  1  0  0  2   0  0  2  0  1   2  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0   980     0   493     0  1684   121   338  1193     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     0   980     0   493     0  1684   121   338  1193     0
Added Vol:      0     0     0    18     0     0     0    30     0     0    36     0
PasserByVol:    0     0     0    15     0     0     0     0     0     0     0     0
Initial Fut:    0     0     0  1013     0   493     0  1714   121   338  1229     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.00
PHF Volume:     0     0     0  1126     0   548     0  1904   134   376  1366     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     0  1126     0   548     0  1904   134   376  1366     0
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00
Final Vol.:     0     0     0  1126     0   548     0  1904   134   376  1366     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  1.00  1.00  1.00  0.95  1.00  0.75  1.00  0.95  0.85  0.92  0.95  1.00
Lanes:       0.00  1.00  0.00  2.00  0.00  2.00  0.00  2.00  1.00  2.00  2.00  0.00
Final Sat.:     0  1900     0  3618     0  2842     0  3610  1615  3502  3610     0
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00  0.31  0.00  0.19  0.00  0.53  0.08  0.11  0.38  0.00
Crit Moves:                    ****                    ****        ****
Green/Cycle: 0.00  0.00  0.00  0.30  0.00  0.30  0.00  0.51  0.51  0.10  0.62  0.00
Volume/Cap:  0.00  0.00  0.00  1.03  0.00  0.64  0.00  1.03  0.16  1.03  0.61  0.00
Delay/Veh:    0.0   0.0   0.0  69.5   0.0  31.7   0.0  52.8  13.0  99.3  12.3   0.0
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:   0.0   0.0   0.0  69.5   0.0  31.7   0.0  52.8  13.0  99.3  12.3   0.0
HCM2kAvg:       0     0     0    26     0     8     0    39     2    11    13     0
*****************************************************************************
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-----------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                   2010 Plus Prj SAT Peak Hour Conditions
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
           2000 HCM Operations Method (Future Volume Alternative)
*****************************************************************************
Intersection #3 E. 20th Street / NB SR-99 Ramps
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        1.162
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):      67.9
Optimal Cycle:      180              Level Of Service:                 E
*****************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:           Ovl            Include           Ignore            Ovl
Min. Green:    0     0     0     0     0     0     0     0     0     0     0     0
Lanes:       1  1  0  0  1   0  0  0  0  0   2  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      92     0   431     0     0     0   413  2251     0     0  1439   892
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:   92     0   431     0     0     0   413  2251     0     0  1439   892
Added Vol:      0     0     0     0     0     0     0    48     0     0    36    23
PasserByVol:    0     0     0     0     0     0     0    15     0     0     0    17
Initial Fut:   92     0   431     0     0     0   413  2314     0     0  1475   932
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.00  0.90  0.90  0.90
PHF Volume:   102     0   479     0     0     0   459  2571     0     0  1639  1036
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  102     0   479     0     0     0   459  2571     0     0  1639  1036
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  0.00  1.00  1.00  1.00
Final Vol.:   102     0   479     0     0     0   459  2571     0     0  1639  1036
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900  1900
Adjustment:  0.95  1.00  0.85  1.00  1.00  1.00  0.92  0.95  1.00  1.00  0.95  0.85
Lanes:       2.00  0.00  1.00  0.00  0.00  0.00  2.00  2.00  0.00  0.00  2.00  1.00
Final Sat.:  3618     0  1615     0     0     0  3502  3610     0     0  3610  1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03  0.00  0.30  0.00  0.00  0.00  0.13  0.71  0.00  0.00  0.45  0.64
Crit Moves:              ****                    ****                          ****
Green/Cycle: 0.26  0.00  0.26  0.00  0.00  0.00  0.11  0.66  0.00  0.00  0.55  0.55
Volume/Cap:  0.11  0.00  1.16  0.00  0.00  0.00  1.16  1.07  0.00  0.00  0.82  1.16
Delay/Veh:   28.6   0.0 133.7   0.0   0.0   0.0 141.6  57.7   0.0   0.0  21.3 107.6
User DelAdj: 1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
AdjDel/Veh:  28.6   0.0 133.7   0.0   0.0   0.0 141.6  57.7   0.0   0.0  21.3 107.6
HCM2kAvg:       1     0    26     0     0     0    15    55     0     0    23    52
*****************************************************************************
```



```
-----------------------------------------------------------------------------
              Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                   2010 Plus Prj SAT Peak Hour Conditions
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
          2000 HCM Unsignalized Method (Future Volume Alternative)
*****************************************************************************
Intersection #4 E.20th Street / Business Lane
*****************************************************************************
Average Delay (sec/veh):     0.3   Worst Case Level Of Service:      C[ 15.2]
*****************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign      Uncontrolled     Uncontrolled
Rights:          Include          Include          Include          Include
Lanes:       0  0  0  0  1   0  0  0  0  0   0  0  4  0  1   0  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0   100     0     0     0     0  2046   636     0  2331     0
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0   100     0     0     0     0  2046   636     0  2331     0
Added Vol:      0     0     0     0     0     0     0    26    22     0    60     0
PasserByVol:    0     0     0     0     0     0     0    15     0     0    17     0
Initial Fut:    0     0   100     0     0     0     0  2087   658     0  2408     0
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90  0.90
PHF Volume:     0     0   111     0     0     0     0  2319   731     0  2676     0
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Final Vol.:     0     0   111     0     0     0     0  2319   731     0  2676     0
Critical Gap Module:
Critical Gp:xxxxx  xxxx   6.9 xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx
FollowUpTim:xxxxx  xxxx   3.3 xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx  xxxx   580  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx
Potent Cap.: xxxx  xxxx   463  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx
Move Cap.:   xxxx  xxxx   463  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx
Volume/Cap:  xxxx  xxxx  0.24  xxxx  xxxx  xxxx  xxxx  xxxx  xxxx  xxxx  xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx  xxxx   0.9 xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx
Stopped Del:xxxxx  xxxx  15.2 xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx
LOS by Move:    *     *     C     *     *     *     *     *     *     *     *     *
Movement:      LT - LTR - RT     LT - LTR - RT     LT - LTR - RT     LT - LTR - RT
Shared Cap.: xxxx  xxxx xxxxx  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx  xxxx  xxxx xxxxx
SharedQueue:xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx
Shrd StpDel:xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx xxxxx  xxxx xxxxx
Shared LOS:     *     *     *     *     *     *     *     *     *     *     *     *
ApproachDel:       15.2             xxxxxx            xxxxxx            xxxxxx
ApproachLOS:         C                 *                 *                 *
```

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.337
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 139.6
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	0	0	1	0	0	2	2	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	302	70	45	151	60	443	542	1502	102	114	1586	164
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	302	70	45	151	60	443	542	1502	102	114	1586	164
Added Vol:	0	0	0	0	0	0	0	26	0	0	60	0
PasserByVol:	0	0	0	0	0	0	0	15	0	0	17	0
Initial Fut:	302	70	45	151	60	443	542	1543	102	114	1663	164
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	336	78	50	168	67	492	602	1714	113	127	1848	182
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	336	78	50	168	67	492	602	1714	113	127	1848	182
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	336	78	50	168	67	492	602	1714	113	127	1848	182

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.95	0.95	0.73	0.88	0.90	0.90	0.90	0.89	0.89
Lanes:	1.57	0.26	0.17	0.72	0.28	2.00	2.00	1.88	0.12	1.00	1.82	0.18
Final Sat.:	2772	465	299	1286	511	2786	3334	3195	211	1718	3088	304

Capacity Analysis Module:

Vol/Sat:	0.12	0.17	0.17	0.13	0.13	0.18	0.18	0.54	0.54	0.07	0.60	0.60
Crit Moves:		****				****	****				****	
Green/Cycle:	0.13	0.13	0.13	0.13	0.13	0.13	0.14	0.51	0.51	0.07	0.45	0.45
Volume/Cap:	0.97	1.34	1.34	0.99	0.99	1.34	1.34	1.05	1.05	1.34	1.34	1.34
Delay/Veh:	76.5	214	213.7	97.9	97.9	212.4	209.3	59.5	59.5	141.6	184	183.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	76.5	214	213.7	97.9	97.9	212.4	209.3	59.5	59.5	141.6	184	183.8
HCM2kAvg:	11	21	21	12	12	17	22	39	39	8	64	64

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 1.568
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 252.3
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Include					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1

Volume Module:

Base Vol:	769	404	77	130	373	271	297	799	340	128	1043	135
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	769	404	77	130	373	271	297	799	340	128	1043	135
Added Vol:	60	45	20	0	37	0	0	0	26	18	0	0
PasserByVol:	36	0	14	0	0	0	0	-15	30	18	-18	0
Initial Fut:	865	449	111	130	410	271	297	784	396	164	1025	135
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	961	499	123	144	456	301	330	871	440	182	1139	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	961	499	123	144	456	301	330	871	440	182	1139	150
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	961	499	123	144	456	301	330	871	440	182	1139	150

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.81	0.90	0.85	0.85	0.90	0.86	0.86	0.90	0.90	0.81
Lanes:	1.00	2.00	1.00	1.00	1.20	0.80	1.00	1.33	0.67	1.00	2.00	1.00
Final Sat.:	1718	3437	1537	1718	1945	1286	1718	2169	1096	1718	3437	1537

Capacity Analysis Module:

Vol/Sat:	0.56	0.15	0.08	0.08	0.23	0.23	0.19	0.40	0.40	0.11	0.33	0.10
Crit Moves:	****				****		****				****	
Green/Cycle:	0.36	0.32	0.39	0.19	0.15	0.15	0.12	0.26	0.26	0.07	0.21	0.40
Volume/Cap:	1.57	0.45	0.21	0.45	1.57	1.57	1.57	1.52	1.52	1.52	1.57	0.25
Delay/Veh:	295.6	27.3	20.4	37.2	308	308.0	321.2	277	277.0	318.5	302	20.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	295.6	27.3	20.4	37.2	308	308.0	321.2	277	277.0	318.5	302	20.4
HCM2kAvg:	77	6	3	5	30	30	28	49	49	16	44	3

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 7.1 Worst Case Level Of Service: E[48.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0

Volume Module:

Base Vol:	9	83	69	143	486	7	13	8	8	84	11	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	83	69	143	486	7	13	8	8	84	11	4
Added Vol:	0	0	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	83	69	143	508	7	13	8	8	84	11	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	10	92	77	159	564	8	14	9	9	93	12	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	10	92	77	159	564	8	14	9	9	93	12	4

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3

Capacity Module:

Cnflict Vol:	572	xxxx	xxxxx	169	xxxx	xxxxx	1045	1075	568	1046	1041	131
Potent Cap.:	1011	xxxx	xxxxx	1421	xxxx	xxxxx	209	221	526	208	232	924
Move Cap.:	1011	xxxx	xxxxx	1421	xxxx	xxxxx	178	192	526	178	201	924
Volume/Cap:	0.01	xxxx	xxxx	0.11	xxxx	xxxx	0.08	0.05	0.02	0.52	0.06	0.00

Level Of Service Module:

Queue:	0.0	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.6	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	223	xxxxx	xxxx	186	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	xxxxx	3.2	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	23.8	xxxxx	xxxxx	48.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	E	*
ApproachDel:	xxxxxx			xxxxxx			23.8			48.9		
ApproachLOS:	*			*			C			E		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 7.5 Worst Case Level Of Service: D[32.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0

Volume Module:

Base Vol:	0	125	61	327	214	0	0	0	0	60	0	48
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	125	61	327	214	0	0	0	0	60	0	48
Added Vol:	0	0	0	11	10	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	125	61	338	224	0	0	0	0	60	0	48
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	139	68	376	249	0	0	0	0	67	0	53
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	139	68	376	249	0	0	0	0	67	0	53

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	207	xxxx	xxxxx	xxxx	xxxx	xxxxx	1173	xxxx	173
Potent Cap.:	xxxx	xxxx	xxxxx	1377	xxxx	xxxxx	xxxx	xxxx	xxxxx	214	xxxx	876
Move Cap.:	xxxx	xxxx	xxxxx	1377	xxxx	xxxxx	xxxx	xxxx	xxxxx	157	xxxx	876
Volume/Cap:	xxxx	xxxx	xxxx	0.27	xxxx	xxxx	xxxx	xxxx	xxxx	0.42	xxxx	0.06

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	247	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.5	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	32.6	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	D	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			32.6		
ApproachLOS:	*			*			*			D		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	7	0	8		0	0	0		0	380	8		4	108	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	7	0	8		0	0	0		0	380	8		4	108	0	
Added Vol:	0	0	0		0	0	0		0	11	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	7	0	8		0	0	0		0	391	8		4	108	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	8	0	9		0	0	0		0	434	9		4	120	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	8	0	9		0	0	0		0	434	9		4	120	0	
Critical Gap Module:																
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	568	xxxx	439	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	443	xxxx	xxxxx				
Potent Cap.:	484	xxxx	618	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1117	xxxx	xxxxx				
Move Cap.:	483	xxxx	618	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1117	xxxx	xxxxx				
Volume/Cap:	0.02	xxxx	0.01	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	547	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx				
Shrd StpDel:	xxxxx	11.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.2	xxxx	xxxxx				
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	11.8			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: B[12.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Volume Module:																
Base Vol:	0	0	92		0	0	0		0	310	156		67	170	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	92		0	0	0		0	310	156		67	170	0	
Added Vol:	0	0	18		0	0	0		0	2	9		8	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	110		0	0	0		0	312	165		75	170	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	122		0	0	0		0	347	183		83	189	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	122		0	0	0		0	347	183		83	189	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	438	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	530	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	618	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1037	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	618	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1037	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	0.20	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	0.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	12.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx				
LOS by Move:	*	*	B	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	12.2			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 26.1 Worst Case Level Of Service: F[433.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0	1	0	0	1!	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	0	0	184		56	4	3		9	390	11		241	234	46	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	184		56	4	3		9	390	11		241	234	46	
Added Vol:	0	0	20		0	0	0		0	19	1		6	8	0	
PasserByVol:	0	0	34		0	0	0		0	0	0		25	0	0	
Initial Fut:	0	0	238		56	4	3		9	409	12		272	242	46	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	264		62	4	3		10	454	13		302	269	51	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	264		62	4	3		10	454	13		302	269	51	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.2		7.1	6.5	6.2		4.1	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		3.5	4.0	3.3		2.2	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	461		1512	1387	294		320	xxxx	xxxxx		468	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	605		99	144	750		1240	xxxx	xxxxx		1094	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	605		44	104	750		1240	xxxx	xxxxx		1094	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.44		1.42	0.04	0.00		0.01	xxxx	xxxx		0.28	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	2.2		xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx		1.1	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	15.5		xxxxx	xxxx	xxxxx		7.9	xxxx	xxxxx		9.5	xxxx	xxxxx	
LOS by Move:	*	*	C		*	*	*		A	*	*		A	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	48	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	6.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	433	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*				
ApproachDel:	15.5			433.2			xxxxxx			xxxxxx						
ApproachLOS:	C			F			*			*						

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.696
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 29.9
Optimal Cycle: 68 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected					Protected					Protected					
Rights:	Include					Include					Include					
Min. Green:	0	0	0			0	0	0			0	0	0			
Lanes:	1	0	1	1	0	1	0	2	0	1	2	0	0	1	0	
Volume Module:																
Base Vol:	245	622	3		21	416	262		364	21	245		11	14	25	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	245	622	3		21	416	262		364	21	245		11	14	25	
Added Vol:	4	99	12		0	76	6		26	4	10		11	3	0	
PasserByVol:	0	23	0		0	23	25		27	0	7		0	0	0	
Initial Fut:	249	744	15		21	515	293		417	25	262		22	17	25	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	277	827	17		23	572	326		463	28	291		24	19	28	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	277	827	17		23	572	326		463	28	291		24	19	28	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	277	827	17		23	572	326		463	28	291		24	19	28	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.90	0.90		0.90	0.90	0.81		0.90	0.85	0.85		0.93	0.89	0.89	
Lanes:	1.00	1.96	0.04		1.00	2.00	1.00		2.00	0.09	0.91		1.00	0.40	0.60	
Final Sat.:	1718	3359	68		1718	3437	1537		3432	140	1467		1769	687	1010	
Capacity Analysis Module:																
Vol/Sat:	0.16	0.25	0.25		0.01	0.17	0.21		0.14	0.20	0.20		0.01	0.03	0.03	
Crit Moves:	****						****			****			****			
Green/Cycle:	0.23	0.51	0.51		0.03	0.30	0.30		0.25	0.28	0.28		0.02	0.05	0.05	
Volume/Cap:	0.70	0.49	0.49		0.49	0.55	0.70		0.53	0.70	0.70		0.70	0.53	0.53	
Delay/Veh:	40.6	16.3	16.3		55.4	29.7	35.3		32.9	36.6	36.6		95.5	52.5	52.5	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	40.6	16.3	16.3		55.4	29.7	35.3		32.9	36.6	36.6		95.5	52.5	52.5	
HCM2kAvg:	9	9	9		1	8	10		7	10	10		2	2	2	

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0 0	0	0	1	1 0	0	0	0	0 1	0	0	0	0 0
Volume Module:																
Base Vol:	0	870		0	0	666		6	0		0	67	0		0	0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	0	870		0	0	666		6	0		0	67	0		0	0
Added Vol:	0	116		0	0	89		7	0		0	6	0		0	0
PasserByVol:	0	23		0	0	29		0	0		0	0	0		0	0
Initial Fut:	0	1009		0	0	784		13	0		0	73	0		0	0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	0	1121		0	0	871		14	0		0	81	0		0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	0	1121		0	0	871		14	0		0	81	0		0	0

Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 3.3 xxxxx xxxx xxxxx

Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 443 xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 568 xxxx xxxx xxxxx
Move Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 568 xxxx xxxx xxxxx
Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx 0.14 xxxx xxxx xxxx

Level Of Service Module:
Queue: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 0.5 xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 12.4 xxxxx xxxx xxxxx
LOS by Move: * * * * * * * * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 12.4 xxxxxx
ApproachLOS: * * B *

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.701
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 32.5
Optimal Cycle: 69 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0	1	0	1!	0 0
Volume Module:																
Base Vol:	56	554		51	61	658		14	230		0	29	47		0	86
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	56	554		51	61	658		14	230		0	29	47		0	86
Added Vol:	46	4		0	0	52		15	111		13	9	0		11	0
PasserByVol:	74	-24		0	0	0		0	47		0	53	0		0	0
Initial Fut:	176	534		51	61	710		29	388		13	91	47		11	86
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	196	593		57	68	789		32	431		14	101	52		12	96
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	196	593		57	68	789		32	431		14	101	52		12	96
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Final Vol.:	196	593		57	68	789		32	431		14	101	52		12	96

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.94 0.94 0.95 0.94 0.94 0.94 0.94 0.94 0.95 0.87 0.87
Lanes: 1.00 1.83 0.17 1.00 1.92 0.08 1.65 0.04 0.31 1.00 0.11 0.89
Final Sat.: 1805 3252 311 1805 3448 141 2933 78 543 1805 187 1460

Capacity Analysis Module:
Vol/Sat: 0.11 0.18 0.18 0.04 0.23 0.23 0.15 0.19 0.19 0.03 0.07 0.07
Crit Moves: **** **** **** ****
Green/Cycle: 0.15 0.40 0.40 0.08 0.33 0.33 0.27 0.27 0.27 0.09 0.09 0.09
Volume/Cap: 0.70 0.46 0.46 0.46 0.70 0.70 0.55 0.70 0.70 0.31 0.70 0.70
Delay/Veh: 47.8 22.3 22.3 46.0 31.3 31.3 32.3 36.0 36.0 43.4 57.5 57.5
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 47.8 22.3 22.3 46.0 31.3 31.3 32.3 36.0 36.0 43.4 57.5 57.5
HCM2kAvg: 7 7 7 3 12 12 8 11 11 2 5 5

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.551
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 13.8
Optimal Cycle: 53 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0 2	1	0	0	1 0
Volume Module:																
Base Vol:	536	312		7	9	132		24	25		63	579	4		45	20
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	536	312		7	9	132		24	25		63	579	4		45	20
Added Vol:	47	0		0	0	0		0	0		0	57	0		0	0
PasserByVol:	0	0		0	0	0		0	0		0	0	0		0	0
Initial Fut:	583	312		7	9	132		24	25		63	636	4		45	20
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	648	347		8	10	147		27	28		70	707	4		50	22
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	648	347		8	10	147		27	28		70	707	4		50	22
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Final Vol.:	648	347		8	10	147		27	28		70	707	4		50	22

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.95 0.95 0.95 0.93 0.93 0.95 1.00 0.75 0.95 0.95 0.95
Lanes: 1.00 1.96 0.04 1.00 1.69 0.31 1.00 1.00 2.00 1.00 0.69 0.31
Final Sat.: 1805 3520 79 1805 2984 543 1805 1900 2842 1805 1255 558

Capacity Analysis Module:
Vol/Sat: 0.36 0.10 0.10 0.01 0.05 0.05 0.02 0.04 0.25 0.00 0.04 0.04
Crit Moves: **** **** **** ****
Green/Cycle: 0.65 0.70 0.70 0.04 0.09 0.09 0.03 0.09 0.74 0.01 0.07 0.07
Volume/Cap: 0.55 0.14 0.14 0.14 0.55 0.55 0.55 0.39 0.33 0.39 0.55 0.55
Delay/Veh: 10.1 5.0 5.0 47.3 45.7 45.7 60.5 44.0 4.4 70.5 49.8 49.8
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 10.1 5.0 5.0 47.3 45.7 45.7 60.5 44.0 4.4 70.5 49.8 49.8
HCM2kAvg: 12 2 2 0 3 3 2 2 4 1 3 3

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.656
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 22.4
Optimal Cycle: 63 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	1	0	0	1 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	12	3		8	263	3		109	88		845	9	13		737	252
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	12	3		8	263	3		109	88		845	9	13		737	252
Added Vol:	0	0		0	1	0		0	0		9	0	0		10	1
PasserByVol:	0	0		0	0	0		0	0		0	0	0		0	0
Initial Fut:	12	3		8	264	3		109	88		854	9	13		747	253
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	13	3		9	293	3		121	98		949	10	14		830	281
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	13	3		9	293	3		121	98		949	10	14		830	281
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Final Vol.:	13	3		9	293	3		121	98		949	10	14		830	281

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.93 0.93 0.93 0.95 0.85 0.85 0.95 0.95 0.95 0.95 0.91 0.91
Lanes: 0.52 0.13 0.35 1.00 0.03 0.97 1.00 1.98 0.02 1.00 1.49 0.51
Final Sat.: 921 230 614 1805 43 1579 1805 3569 38 1805 2594 879

Capacity Analysis Module:
Vol/Sat: 0.01 0.01 0.01 0.16 0.08 0.08 0.05 0.27 0.27 0.01 0.32 0.32
Crit Moves: **** **** **** ****
Green/Cycle: 0.02 0.02 0.02 0.25 0.25 0.25 0.08 0.55 0.55 0.02 0.49 0.49
Volume/Cap: 0.66 0.66 0.66 0.66 0.31 0.31 0.66 0.48 0.48 0.48 0.66 0.66
Delay/Veh: 82.5 82.5 82.5 37.3 31.1 31.1 54.7 13.8 13.8 60.3 20.2 20.2
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 82.5 82.5 82.5 37.3 31.1 31.1 54.7 13.8 13.8 60.3 20.2 20.2
HCM2kAvg: 2 2 2 9 3 3 4 9 9 1 13 13

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps
*******************************************************************************
Average Delay (sec/veh):       1.2   Worst Case Level Of Service:       B[ 13.4]
*******************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Ignore           Ignore           Ignore           Ignore
Lanes:        0  0  0  0  1    2  0  0  0  1    0  0  1  0  1    1  0  1  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0  628    0    0  282    0  955  220  192 1035    0
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    0    0  628    0    0  282    0  955  220  192 1035    0
Added Vol:      0    0    0    0    0    0    0   10    0    0   12    0
PasserByVol:    0    0    0    0    0    0    0    0    0   15    0    0
Initial Fut:    0    0  628    0    0  282    0  965  220  207 1047    0
User Adj:    1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00
PHF Adj:     0.90 0.90 0.00 0.90 0.90 0.00 0.90 0.90 0.00 0.90 0.90 0.00
PHF Volume:     0    0    0    0    0    0    0 1072    0  230 1163    0
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Final Vol.:     0    0    0    0    0    0    0 1072    0  230 1163    0
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1072 xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   658 xxxx xxxxx
Move Cap.:   xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   658 xxxx xxxxx
Volume/Cap:  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.35 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   1.6 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx  13.4 xxxx xxxxx
LOS by Move:   *    *    *    *    *    *    *    *    *    B    *    *
Movement:    LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *    *    *    *    *    *    *    *    *    *    *
ApproachDel:    xxxxxx          xxxxxx          xxxxxx          xxxxxx
ApproachLOS:        *               *               *               *
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps
*******************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        0.578
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):        11.5
Optimal Cycle:       37                Level Of Service:                   B
*******************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include           Ignore           Ignore
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1! 0  1    0  0  0  0  0    0  0  2  0  1    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     194    0  253    0    0    0    0 1338  245    0 1033  707
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:  194    0  253    0    0    0    0 1338  245    0 1033  707
Added Vol:      0    0   13    0    0    0    0   10    0    0   28    0
PasserByVol:    0    0   18    0    0    0    0    0    0    0   15    0
Initial Fut:  194    0  284    0    0    0    0 1348  245    0 1076  707
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 0.00
PHF Adj:     0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.00 0.90 0.90 0.00
PHF Volume:   216    0  316    0    0    0    0 1498    0    0 1196    0
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  216    0  316    0    0    0    0 1498    0    0 1196    0
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 0.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 0.00
Final Vol.:   216    0  316    0    0    0    0 1498    0    0 1196    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  0.89 1.00 0.89 1.00 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00
Lanes:       1.41 0.00 1.59 0.00 0.00 0.00 0.00 2.00 1.00 0.00 2.00 1.00
Final Sat.:  2385    0 2704    0    0    0    0 3610 1900    0 3610 1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.00 0.12 0.00 0.00 0.00 0.00 0.41 0.00 0.00 0.33 0.00
Crit Moves:                ****                    ****
Green/Cycle: 0.20 0.00 0.20 0.00 0.00 0.00 0.00 0.72 0.00 0.00 0.72 0.00
Volume/Cap:  0.45 0.00 0.58 0.00 0.00 0.00 0.00 0.58 0.00 0.00 0.46 0.00
Delay/Veh:   35.3  0.0 37.0  0.0  0.0  0.0  0.0  7.1  0.0  0.0  6.1  0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:  35.3  0.0 37.0  0.0  0.0  0.0  0.0  7.1  0.0  0.0  6.1  0.0
HCM2kAvg:      5    0    6    0    0    0    0   11    0    0    8    0
*******************************************************************************
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2010 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

```
*******************************************************************************
Intersection #19 Skyway / Notre Dame Boulevard
*******************************************************************************
Cycle (sec):        100                Critical Vol./Cap. (X):        0.967
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):        51.1
Optimal Cycle:      151                Level Of Service:                   D
*******************************************************************************
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Protected        Protected        Protected        Protected
Rights:          Include           Ovl              Ovl              Ovl
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        2  0  0  1  0    1  0  1  0  1    2  0  2  0  1    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     390  332   54  200  103  594  593  840  158   58  756  343
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:  390  332   54  200  103  594  593  840  158   58  756  343
Added Vol:      0    6    0   22    7   28   23    0    0    0    0   18
PasserByVol:    0    0    0   14    0   34   32  -14    0    0  -18   18
Initial Fut:  390  338   54  236  110  656  648  826  158   58  738  379
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume:  433  376   60  262  122  729  720  918  176   64  820  421
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol: 433  376   60  262  122  729  720  918  176   64  820  421
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:  433  376   60  262  122  729  720  918  176   64  820  421
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  0.92 0.98 0.98 0.95 1.00 0.85 0.92 0.95 0.85 0.95 0.95 0.85
Lanes:       2.00 0.86 0.14 1.00 1.00 1.00 2.00 2.00 1.00 1.00 2.00 1.00
Final Sat.:  3502 1604  256 1805 1900 1615 3502 3610 1615 1805 3610 1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.12 0.23 0.23 0.15 0.06 0.45 0.21 0.25 0.11 0.04 0.23 0.26
Crit Moves:       ****           ****           ****           ****
Green/Cycle: 0.13 0.24 0.24 0.15 0.26 0.47 0.21 0.39 0.52 0.06 0.23 0.39
Volume/Cap:  0.94 0.97 0.97 0.97 0.25 0.95 0.97 0.65 0.21 0.65 0.97 0.68
Delay/Veh:   70.8 71.3 71.3 87.6 29.4 47.0 64.0 25.8 12.8 60.3 60.9 28.6
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:  70.8 71.3 71.3 87.6 29.4 47.0 64.0 25.8 12.8 60.3 60.9 28.6
HCM2kAvg:     11   18   18   13    3   27   17   12    3    3   18   12
*******************************************************************************
```

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 | Critical Vol./Cap. (X): 0.403
Loss Time (sec): 16 (Y+R = 4 sec) | Average Delay (sec/veh): 15.4
Optimal Cycle: 43 | Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	61		6		69	37		8		24	23		702		97	136		799		57
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	61		6		69	37		8		24	23		702		97	136		799		57
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	68		7		77	41		9		27	26		780		108	151		888		63
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	68		7		77	41		9		27	26		780		108	151		888		63
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	68		7		77	41		9		27	26		780		108	151		888		63
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00		0.85		0.95	0.89		0.89	0.95	0.95	0.85	0.92	0.94	0.94					
Lanes:	1.00	1.00		1.00		1.00	0.25		0.75	1.00	2.00	1.00	2.00	1.87	0.13					
Final Sat.:	1805	1900		1615		1805	422		1265	1805	3610	1615	3502	3336	238					
Capacity Analysis Module:																				
Vol/Sat:	0.04	0.00		0.05		0.02	0.02		0.02	0.01	0.22	0.07	0.04	0.27	0.27					
Crit Moves:	****							****		****				****						
Green/Cycle:	0.09	0.02		0.14		0.12	0.05		0.05	0.04	0.58	0.67	0.12	0.66	0.66					
Volume/Cap:	0.40	0.15		0.34		0.19	0.40		0.40	0.40	0.37	0.10	0.37	0.40	0.40					
Delay/Veh:	44.3	49.5		39.8		39.8	48.9		48.9	51.4	11.4	5.8	41.4	8.0	8.0					
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00					
AdjDel/Veh:	44.3	49.5		39.8		39.8	48.9		48.9	51.4	11.4	5.8	41.4	8.0	8.0					
HCM2kAvg:	3	0		2		1	2		2	1	6	1	3	7	7					

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 | Critical Vol./Cap. (X): 0.447
Loss Time (sec): 8 (Y+R = 4 sec) | Average Delay (sec/veh): 19.6
Optimal Cycle: 29 | Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
Lanes:	0	0	0	0	0	1	1	0	0	2	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	0		0		0	807		0		230	0		754		54	0		762		561
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0		0		0	807		0		230	0		754		54	0		762		561
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90	0.90	0.00	0.90
PHF Volume:	0		0		0	897		0		256	0		838		0	0		847		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	0		0		0	897		0		256	0		838		0	0		847		0
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Final Vol.:	0		0		0	897		0		256	0		838		0	0		847		0
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00		1.00		0.95	1.00		0.75	1.00	0.91	1.00	1.00	0.91	1.00					
Lanes:	0.00	0.00		0.00		2.00	0.00		2.00	0.00	2.00	0.00	3.00	1.00	1.00					
Final Sat.:	0		0		0	3618		0		2842	0		5187		1900	0		5187		1900
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00		0.00		0.25	0.00		0.09	0.00	0.16	0.00	0.00	0.16	0.00					
Crit Moves:						****				****				****						
Green/Cycle:	0.00	0.00		0.00		0.55	0.00		0.55	0.00	0.37	0.00	0.00	0.37	0.00					
Volume/Cap:	0.00	0.00		0.00		0.45	0.00		0.16	0.00	0.44	0.00	0.00	0.45	0.00					
Delay/Veh:	0.0	0.0		0.0		13.3	0.0		10.9	0.0	24.2	0.0	0.0	24.2	0.0					
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00					
AdjDel/Veh:	0.0	0.0		0.0		13.3	0.0		10.9	0.0	24.2	0.0	0.0	24.2	0.0					
HCM2kAvg:	0	0		0		9	0		2	0	7	0	0	7	0					

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 | Critical Vol./Cap. (X): 0.610
Loss Time (sec): 8 (Y+R = 4 sec) | Average Delay (sec/veh): 20.1
Optimal Cycle: 39 | Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
Lanes:	1	1	0	0	1	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	76		0		400	0		0		0	0		1336		225	0		1247		627
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76		0		400	0		0		0	0		1336		225	0		1247		627
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90	0.90	0.00	0.90
PHF Volume:	84		0		444	0		0		0	0		1484		0	0		1386		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Reduced Vol:	84		0		444	0		0		0	0		1484		0	0		1386		0
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00
Final Vol.:	84		0		444	0		0		0	0		1484		0	0		1386		0
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00		0.85		1.00	1.00		1.00	1.00	0.91	1.00	1.00	0.91	1.00					
Lanes:	2.00	0.00		1.00		0.00	0.00		0.00	0.00	3.00	1.00	0.00	3.00	1.00					
Final Sat.:	3618		0		1615	0		0		0	5187		1900		0	5187		1900		0
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.00		0.28		0.00	0.00		0.00	0.00	0.29	0.00	0.00	0.27	0.00					
Crit Moves:				****							****			****						
Green/Cycle:	0.45	0.00		0.45		0.00	0.00		0.00	0.00	0.47	0.00	0.00	0.47	0.00					
Volume/Cap:	0.05	0.00		0.61		0.00	0.00		0.00	0.00	0.61	0.00	0.00	0.57	0.00					
Delay/Veh:	15.4	0.0		22.3		0.0	0.0		0.0	0.0	20.2	0.0	0.0	19.6	0.0					
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00					
AdjDel/Veh:	15.4	0.0		22.3		0.0	0.0		0.0	0.0	20.2	0.0	0.0	19.6	0.0					
HCM2kAvg:	1	0		11		0	0		0	0	12	0	0	11	0					

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[11.7]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	2	0	0
Volume Module:																				
Base Vol:	0		0		46	0		0		0	0		1495		241	0		1874		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0		0		46	0		0		0	0		1495		241	0		1874		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0		0		51	0		0		0	0		1661		268	0		2082		0
Reduct Vol:	0		0		0	0		0		0	0		0		0	0		0		0
Final Vol.:	0		0		51	0		0		0	0		1661		268	0		2082		0
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx		6.9		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx					
FollowUpTim:	xxxxx	xxxx		3.3		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx					
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx		415		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx					
Potent Cap.:	xxxx	xxxx		592		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx					
Move Cap.:	xxxx	xxxx		592		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxx	xxxxx					
Volume/Cap:	xxxx	xxxx		0.09		xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx					
Level Of Service Module:																				
Queue:	xxxxx	xxxx		0.3		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx					
Stopped Del:	xxxxx	xxxx		11.7		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxxx	xxxx	xxxxx					
LOS by Move:	*		*		B	*		*		*	*		*		*	*		*		*
Movement:	LT - LTR - RT					LT - LTR - RT					LT - LTR - RT					LT - LTR - RT				
Shared Cap.:	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx		
SharedQueue:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shrd StpDel:	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx		
Shared LOS:	*		*		*	*		*		*	*		*		*	*		*		*
ApproachDel:	xxxxxx					xxxxxx					xxxxxx					xxxxxx				
ApproachLOS:	B					*					*					*				

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.861
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 22.7
Optimal Cycle: 103 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	0	0		0	0	0
Lanes:	1	0	1!	0	0	0	1	0	0	2	2	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	124	6	10	74	2	130	183	1338	20	27	1620	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	124	6	10	74	2	130	183	1338	20	27	1620	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	138	7	11	82	2	144	203	1487	22	30	1800	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	138	7	11	82	2	144	203	1487	22	30	1800	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	138	7	11	82	2	144	203	1487	22	30	1800	111

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.93	0.73	0.88	0.90	0.90	0.90	0.90	0.90
Lanes:	1.79	0.08	0.13	0.97	0.03	2.00	2.00	1.97	0.03	1.00	1.88	0.12
Final Sat.:	3166	136	226	1730	47	2786	3334	3379	51	1718	3208	198

Capacity Analysis Module:

Vol/Sat:	0.04	0.05	0.05	0.05	0.05	0.05	0.06	0.44	0.44	0.02	0.56	0.56
Crit Moves:		****				****	****				****	
Green/Cycle:	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.70	0.70	0.03	0.65	0.65
Volume/Cap:	0.76	0.86	0.86	0.79	0.79	0.86	0.86	0.63	0.63	0.63	0.86	0.86
Delay/Veh:	62.0	78.5	78.5	77.8	77.8	80.2	71.9	8.9	8.9	72.8	17.5	17.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.0	78.5	78.5	77.8	77.8	80.2	71.9	8.9	8.9	72.8	17.5	17.5
HCM2kAvg:	4	5	5	5	5	4	6	13	13	2	26	26

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.977
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 53.1
Optimal Cycle: 158 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Include					Ovl				
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	0	0		0	0	0
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1

Volume Module:

Base Vol:	245	152	12	128	312	258	199	684	390	94	1038	186
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	245	152	12	128	312	258	199	684	390	94	1038	186
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	272	169	13	142	347	287	221	760	433	104	1153	207
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	272	169	13	142	347	287	221	760	433	104	1153	207
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	272	169	13	142	347	287	221	760	433	104	1153	207

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.81	0.90	0.84	0.84	0.90	0.86	0.86	0.90	0.90	0.81
Lanes:	1.00	2.00	1.00	1.00	1.09	0.91	1.00	1.27	0.73	1.00	2.00	1.00
Final Sat.:	1718	3437	1537	1718	1753	1450	1718	2071	1181	1718	3437	1537

Capacity Analysis Module:

Vol/Sat:	0.16	0.05	0.01	0.08	0.20	0.20	0.13	0.37	0.37	0.06	0.34	0.13
Crit Moves:	****				****		****				****	
Green/Cycle:	0.16	0.14	0.20	0.23	0.20	0.20	0.13	0.41	0.41	0.07	0.34	0.57
Volume/Cap:	0.98	0.36	0.04	0.36	0.98	0.98	0.98	0.90	0.90	0.90	0.98	0.23
Delay/Veh:	89.0	39.7	32.1	33.0	69.1	69.1	96.3	36.3	36.3	99.8	53.1	10.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	89.0	39.7	32.1	33.0	69.1	69.1	96.3	36.3	36.3	99.8	53.1	10.7
HCM2kAvg:	13	3	0	4	15	15	12	21	21	6	23	3

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 3.0 Worst Case Level Of Service: B[12.7]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0

Volume Module:

Base Vol:	1	36	85	44	189	8	9	2	9	50	11	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	36	85	44	189	8	9	2	9	50	11	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	1	40	94	49	210	9	10	2	10	56	12	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	1	40	94	49	210	9	10	2	10	56	12	1

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3

Capacity Module:

Cnflict Vol:	219	xxxx	xxxxx	134	xxxx	xxxxx	408	449	214	408	406	87
Potent Cap.:	1363	xxxx	xxxxx	1463	xxxx	xxxxx	557	508	831	557	537	977
Move Cap.:	1363	xxxx	xxxxx	1463	xxxx	xxxxx	532	490	831	534	518	977
Volume/Cap:	0.00	xxxx	xxxx	0.03	xxxx	xxxx	0.02	0.00	0.01	0.10	0.02	0.00

Level Of Service Module:

Queue:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.6	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	628	xxxxx	xxxx	535	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.4	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.9	xxxxx	xxxxx	12.7	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx				10.9			12.7	
ApproachLOS:	*			*				B			B	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: A[9.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0

Volume Module:

Base Vol:	0	24	7	121	60	0	0	0	0	8	0	56
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	24	7	121	60	0	0	0	0	8	0	56
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	27	8	134	67	0	0	0	0	9	0	62
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	27	8	134	67	0	0	0	0	9	0	62

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	34	xxxx	xxxxx	xxxx	xxxx	xxxxx	366	xxxx	31
Potent Cap.:	xxxx	xxxx	xxxxx	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx	638	xxxx	1050
Move Cap.:	xxxx	xxxx	xxxxx	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx	593	xxxx	1050
Volume/Cap:	xxxx	xxxx	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	0.01	xxxx	0.06

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	957	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.1	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9.1		
ApproachLOS:	*			*			*			A		

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-------------------------------------------------------------------------------
             Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                 2018 No Project AM Peak Hour Conditions
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
         2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #9 BANEY LN / WALMART WEST DRWY
*******************************************************************************
Average Delay (sec/veh):      0.2   Worst Case Level Of Service:      A[  9.7]
*******************************************************************************
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:           Include          Include          Include           Include
Lanes:        1  0  0  0  0    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        3    0     0     0    0     0     0  127     1     1   61     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     3    0     0     0    0     0     0  127     1     1   61     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      3    0     0     0    0     0     0  141     1     1   68     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      3    0     0     0    0     0     0  141     1     1   68     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  212 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx   142 xxxx xxxxx
Potent Cap.:  777 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1441 xxxx xxxxx
Move Cap.:    776 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1441 xxxx xxxxx
Volume/Cap:  0.00 xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.00 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del:  9.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     A    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.5 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     A    *     *
ApproachDel:        9.7            xxxxxx            xxxxxx            xxxxxx
ApproachLOS:         A                *                 *                 *
```

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-------------------------------------------------------------------------------
             Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                 2018 No Project AM Peak Hour Conditions
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
         2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #10 BANEY LN / WALMART CENTRAL DRWY
*******************************************************************************
Average Delay (sec/veh):      1.7   Worst Case Level Of Service:      A[  9.9]
*******************************************************************************
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:           Include          Include          Include           Include
Lanes:        1  0  0  0  1    0  0  0  0  0    0  0  0  1  0    0  1  0  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       25    0    10     0    0     0     0  133    38    15   51     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    25    0    10     0    0     0     0  133    38    15   51     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     28    0    11     0    0     0     0  148    42    17   57     0
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     28    0    11     0    0     0     0  148    42    17   57     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  6.4 xxxx   6.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  259 xxxx   169  xxxx xxxx xxxxx  xxxx xxxx xxxxx   190 xxxx xxxxx
Potent Cap.:  730 xxxx   875  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1384 xxxx xxxxx
Move Cap.:    723 xxxx   875  xxxx xxxx xxxxx  xxxx xxxx xxxxx  1384 xxxx xxxxx
Volume/Cap:  0.04 xxxx  0.01  xxxx xxxx  xxxx  xxxx xxxx  xxxx  0.01 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.1 xxxx   0.0 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Stopped Del: 10.2 xxxx   9.2 xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.6 xxxx xxxxx
LOS by Move:    B    *     A     *    *     *     *    *     *     A    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.6 xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     A    *     *
ApproachDel:        9.9            xxxxxx            xxxxxx            xxxxxx
ApproachLOS:         A                *                 *                 *
```

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-------------------------------------------------------------------------------
             Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                 2018 No Project AM Peak Hour Conditions
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
         2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #11 BANEY LN / WALMART EAST DRWY
*******************************************************************************
Average Delay (sec/veh):      3.8   Worst Case Level Of Service:      B[ 11.6]
*******************************************************************************
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled      Uncontrolled
Rights:           Include          Include          Include           Include
Lanes:        0  0  1! 0  0    0  0  1! 0  0    1  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:        6    0    55    10    0     5     1  134     8    85   55    18
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:     6    0    55    10    0     5     1  134     8    85   55    18
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:      7    0    61    11    0     6     1  149     9    94   61    20
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:      7    0    61    11    0     6     1  149     9    94   61    20
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  7.1 xxxx   6.2   7.1 xxxx   6.2   4.1 xxxx xxxxx   4.1 xxxx xxxxx
FollowUpTim:  3.5 xxxx   3.3   3.5 xxxx   3.3   2.2 xxxx xxxxx   2.2 xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  418 xxxx   153   446 xxxx    71    81 xxxx xxxxx   158 xxxx xxxxx
Potent Cap.:  549 xxxx   898   526 xxxx   997  1516 xxxx xxxxx  1422 xxxx xxxxx
Move Cap.:    518 xxxx   898   465 xxxx   997  1516 xxxx xxxxx  1422 xxxx xxxxx
Volume/Cap:  0.01 xxxx  0.07  0.02 xxxx  0.01  0.00 xxxx  xxxx  0.07 xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx xxxxx xxxx xxxxx   0.0 xxxx xxxxx   0.2 xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx   7.4 xxxx xxxxx   7.7 xxxx xxxxx
LOS by Move:    *    *     *     *    *     *     A    *     *     A    *     *
Movement:      LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx  837 xxxxx  xxxx  566 xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx  0.3 xxxxx xxxxx  0.1 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx  9.7 xxxxx xxxxx 11.6 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    A     *     *    B     *     *    *     *     *    *     *
ApproachDel:        9.7              11.6            xxxxxx            xxxxxx
ApproachLOS:         A                B                 *                 *
```

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-------------------------------------------------------------------------------
             Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                 2018 No Project AM Peak Hour Conditions
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap. (X):        0.385
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):      24.2
Optimal Cycle:       42              Level Of Service:                 C
*******************************************************************************
Approach:     North Bound      South Bound       East Bound        West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected         Protected
Rights:           Include          Include          Include           Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Lanes:        1  0  1  1  0    1  0  2  0  1    2  0  0  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       77  233    14    57  556    72    79   18   102    19    9    38
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    77  233    14    57  556    72    79   18   102    19    9    38
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     86  259    16    63  618    80    88   20   113    21   10    42
Reduct Vol:      0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    86  259    16    63  618    80    88   20   113    21   10    42
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:     86  259    16    63  618    80    88   20   113    21   10    42
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.90  0.90  0.90 0.90  0.81  0.90 0.86  0.86  0.93 0.86  0.86
Lanes:       1.00 1.89  0.11  1.00 2.00  1.00  2.00 0.15  0.85  1.00 0.19  0.81
Final Sat.:  1718 3213   193  1718 3437  1537  3432  244  1382  1769  313  1323
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.08  0.08  0.04 0.18  0.05  0.03 0.08  0.08  0.01 0.03  0.03
Crit Moves:  ****                  ****              ****        ****
Green/Cycle: 0.13 0.41  0.41  0.19 0.47  0.47  0.11 0.21  0.21  0.03 0.14  0.14
Volume/Cap:  0.39 0.20  0.20  0.20 0.39  0.11  0.24 0.39  0.39  0.39 0.24  0.24
Delay/Veh:   41.0 19.1  19.1  34.6 17.5  15.1  41.1 34.5  34.5  52.0 39.2  39.2
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh:  41.0 19.1  19.1  34.6 17.5  15.1  41.1 34.5  34.5  52.0 39.2  39.2
HCM2kAvg:       3    3     3     2    6     1     1    4     4     1    2     2
*******************************************************************************
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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0 0	0	0	1	1 0	0	0	0	0 1	0	0	0	0 0
Volume Module:																
Base Vol:	0	324		0	0	674		3	0		0	25	0		0	0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	0	324		0	0	674		3	0		0	25	0		0	0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	0	360		0	0	749		3	0		0	28	0		0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	0	360		0	0	749		3	0		0	28	0		0	0

Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 3.3 xxxxx xxxx xxxxx

Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 376 xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 627 xxxx xxxx xxxxx
Move Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 627 xxxx xxxx xxxxx
Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx 0.04 xxxx xxxx xxxx

Level Of Service Module:
Queue: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 0.1 xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 11.0 xxxxx xxxx xxxxx
LOS by Move: * * * * * * * * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 11.0 xxxxxx
ApproachLOS: * * B *

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: D[33.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Ignore				Include			
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module:																
Base Vol:	56	282		38	84	545		70	12		1	18	20		0	30
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	56	282		38	84	545		70	12		1	18	20		0	30
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		0.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.00	0.90	0.90		0.90	0.90
PHF Volume:	62	313		42	93	606		78	13		1	0	22		0	33
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	62	313		42	93	606		78	13		1	0	22		0	33

Critical Gap Module:
Critical Gp: 4.2 xxxx xxxxx 4.2 xxxx xxxxx 7.5 6.5 xxxxx 7.5 xxxx 6.9
FollowUpTim: 2.3 xxxx xxxxx 2.3 xxxx xxxxx 3.5 4.0 xxxxx 3.5 xxxx 3.3

Capacity Module:
Cnflict Vol: 683 xxxx xxxxx 356 xxxx xxxxx 1112 1311 xxxxx 949 xxxx 178
Potent Cap.: 886 xxxx xxxxx 1179 xxxx xxxxx 163 158 xxxxx 215 xxxx 835
Move Cap.: 886 xxxx xxxxx 1179 xxxx xxxxx 139 135 xxxxx 190 xxxx 835
Volume/Cap: 0.07 xxxx xxxx 0.08 xxxx xxxx 0.10 0.01 xxxx 0.12 xxxx 0.04

Level Of Service Module:
Queue: 0.2 xxxx xxxxx 0.3 xxxx xxxxx xxxxx xxxx xxxxx 0.4 xxxx xxxxx
Stopped Del: 9.4 xxxx xxxxx 8.3 xxxx xxxxx xxxxx xxxx xxxxx 26.4 xxxx xxxxx
LOS by Move: A * * A * * * * * D * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx 139 xxxxx xxxx xxxx 835
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxx 0.1
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 33.9 xxxxx xxxxx xxxx 9.5
Shared LOS: * * * * * D * * A
ApproachDel: xxxxxx xxxxxx 33.9 16.3
ApproachLOS: * * D C

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.388
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 20.4
Optimal Cycle: 42 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0 2	1	0	0	1 0
Volume Module:																
Base Vol:	308	178		24	13	251		24	8	33	248		6	59		16
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	308	178		24	13	251		24	8	33	248		6	59		16
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90
PHF Volume:	342	198		27	14	279		27	9	37	276		7	66		18
Reduct Vol:	0	0		0	0	0		0	0	0	0		0	0		0
Reduced Vol:	342	198		27	14	279		27	9	37	276		7	66		18
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	342	198		27	14	279		27	9	37	276		7	66		18

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.95 0.93 0.93 0.95 0.94 0.94 0.95 1.00 0.75 0.95 0.97 0.97
Lanes: 1.00 1.76 0.24 1.00 1.83 0.17 1.00 1.00 2.00 1.00 0.79 0.21
Final Sat.: 1805 3124 421 1805 3252 311 1805 1900 2842 1805 1447 392

Capacity Analysis Module:
Vol/Sat: 0.19 0.06 0.06 0.01 0.09 0.09 0.00 0.02 0.10 0.00 0.05 0.05
Crit Moves: **** **** **** ****
Green/Cycle: 0.49 0.63 0.63 0.08 0.22 0.22 0.01 0.11 0.60 0.02 0.12 0.12
Volume/Cap: 0.39 0.10 0.10 0.10 0.39 0.39 0.39 0.18 0.16 0.18 0.39 0.39
Delay/Veh: 16.4 7.3 7.3 43.0 33.5 33.5 59.5 40.9 9.0 50.4 42.0 42.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 16.4 7.3 7.3 43.0 33.5 33.5 59.5 40.9 9.0 50.4 42.0 42.0
HCM2kAvg: 7 1 1 1 4 4 1 1 2 0 3 3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.536
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 52 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	1!	0 0	1	0	0	1 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	5	0		12	53		3	36	44	1050		6	9	1121		98
Growth Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	5	0		12	53		3	36	44	1050		6	9	1121		98
User Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	6	0		13	59		3	40	49	1167		7	10	1246		109
Reduct Vol:	0	0		0	0		0	0	0	0		0	0	0		0
Reduced Vol:	6	0		13	59		3	40	49	1167		7	10	1246		109
PCE Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	6	0		13	59		3	40	49	1167		7	10	1246		109

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.89 1.00 0.89 0.95 0.86 0.86 0.95 0.95 0.95 0.95 0.94 0.94
Lanes: 0.29 0.00 0.71 1.00 0.08 0.92 1.00 1.99 0.01 1.00 1.84 0.16
Final Sat.: 499 0 1197 1805 126 1512 1805 3586 20 1805 3280 287

Capacity Analysis Module:
Vol/Sat: 0.01 0.00 0.01 0.03 0.03 0.03 0.03 0.33 0.33 0.01 0.38 0.38
Crit Moves: **** **** **** ****
Green/Cycle: 0.02 0.00 0.02 0.06 0.06 0.06 0.05 0.75 0.75 0.01 0.71 0.71
Volume/Cap: 0.54 0.00 0.54 0.54 0.44 0.44 0.54 0.44 0.44 0.44 0.54 0.54
Delay/Veh: 63.8 0.0 63.8 50.7 48.3 48.3 52.5 4.9 4.9 61.7 7.1 7.1
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 63.8 0.0 63.8 50.7 48.3 48.3 52.5 4.9 4.9 61.7 7.1 7.1
HCM2kAvg: 1 0 1 3 2 2 2 7 7 1 10 10

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.593
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 20.5
Optimal Cycle: 38 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ignore					Ignore					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	1!	0	0	2	0	0	0	1	0	0	2	0	1	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	0			882	0	537			0	767	362			0	863	233		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	0			882	0	537			0	767	362			0	863	233		
User Adj:	1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.00			0.90	0.90	0.00			0.90	0.90	0.00			0.90	0.90	0.00		
PHF Volume:	0	0	0			980	0	0			0	852	0			0	959	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	0	0	0			980	0	0			0	852	0			0	959	0		
PCE Adj:	1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00		
Final Vol.:	0	0	0			980	0	0			0	852	0			0	959	0		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	1.00	1.00	1.00			0.92	1.00	1.00			1.00	0.95	1.00			1.00	0.95	1.00		
Lanes:	0.00	1.00	0.00			2.00	0.00	1.00			0.00	2.00	1.00			0.00	2.00	1.00		
Final Sat.:	0	1900	0			3502	0	1900			0	3610	1900			0	3610	1900		
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.28	0.00	0.00			0.00	0.24	0.00			0.00	0.27	0.00		
Crit Moves:						****					****						****			
Green/Cycle:	0.00	0.00	0.00			0.47	0.00	0.00			0.00	0.45	0.00			0.00	0.45	0.00		
Volume/Cap:	0.00	0.00	0.00			0.59	0.00	0.00			0.00	0.53	0.00			0.00	0.59	0.00		
Delay/Veh:	0.0	0.0	0.0			19.9	0.0	0.0			0.0	20.3	0.0			0.0	21.3	0.0		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	0.0	0.0	0.0			19.9	0.0	0.0			0.0	20.3	0.0			0.0	21.3	0.0		
HCM2kAvg:	0	0	0			12	0	0			0	10	0			0	11	0		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.570
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 11.6
Optimal Cycle: 36 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Permitted					Permitted				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0
Volume Module:																				
Base Vol:	196	0	276			0	0	0			0	1334	315			0	900	1132		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	196	0	276			0	0	0			0	1334	315			0	900	1132		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.00			0.90	0.90	0.00		
PHF Volume:	218	0	307			0	0	0			0	1482	0			0	1000	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	218	0	307			0	0	0			0	1482	0			0	1000	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
Final Vol.:	218	0	307			0	0	0			0	1482	0			0	1000	0		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.89	1.00	0.89			1.00	1.00	1.00			1.00	0.95	0.95			1.00	0.95	0.95		
Lanes:	1.42	0.00	1.58			0.00	0.00	0.00			0.00	2.00	0.00			0.00	2.00	0.00		
Final Sat.:	2403	0	2691			0	0	0			0	3610	0			0	3610	0		
Capacity Analysis Module:																				
Vol/Sat:	0.09	0.00	0.11			0.00	0.00	0.00			0.00	0.41	0.00			0.00	0.28	0.00		
Crit Moves:			****									****								
Green/Cycle:	0.20	0.00	0.20			0.00	0.00	0.00			0.00	0.72	0.00			0.00	0.72	0.00		
Volume/Cap:	0.45	0.00	0.57			0.00	0.00	0.00			0.00	0.57	0.00			0.00	0.38	0.00		
Delay/Veh:	35.5	0.0	37.0			0.0	0.0	0.0			0.0	6.9	0.0			0.0	5.5	0.0		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	35.5	0.0	37.0			0.0	0.0	0.0			0.0	6.9	0.0			0.0	5.5	0.0		
HCM2kAvg:	5	0	6			0	0	0			0	11	0			0	6	0		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.908
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 36.0
Optimal Cycle: 120 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	0	1	0	1	0	1	0	1	2	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	292	62	40			215	74	295			386	841	383			104	1445	156		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	292	62	40			215	74	295			386	841	383			104	1445	156		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	324	69	44			239	82	328			429	934	426			116	1606	173		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	324	69	44			239	82	328			429	934	426			116	1606	173		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Final Vol.:	324	69	44			239	82	328			429	934	426			116	1606	173		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.92	0.94	0.94			0.95	1.00	0.85			0.92	0.95	0.85			0.95	0.95	0.85		
Lanes:	2.00	0.61	0.39			1.00	1.00	1.00			2.00	2.00	1.00			1.00	2.00	1.00		
Final Sat.:	3502	1087	701			1805	1900	1615			3502	3610	1615			1805	3610	1615		
Capacity Analysis Module:																				
Vol/Sat:	0.09	0.06	0.06			0.13	0.04	0.20			0.12	0.26	0.26			0.06	0.44	0.11		
Crit Moves:		****				****					****						****			
Green/Cycle:	0.12	0.07	0.07			0.15	0.10	0.24			0.13	0.50	0.62			0.12	0.49	0.64		
Volume/Cap:	0.80	0.91	0.91			0.91	0.43	0.86			0.91	0.52	0.43			0.52	0.91	0.17		
Delay/Veh:	54.2	99.4	99.4			74.5	43.9	54.8			63.9	17.1	10.3			43.1	30.8	7.5		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	54.2	99.4	99.4			74.5	43.9	54.8			63.9	17.1	10.3			43.1	30.8	7.5		
HCM2kAvg:	7	6	6			11	3	13			10	10	7			4	27	2		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 | Critical Vol./Cap. (X): 1.042
Loss Time (sec): 16 (Y+R = 4 sec) | Average Delay (sec/veh): 51.3
Optimal Cycle: 180 | Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	263	14	543			35	13	17			31	1560	313			566	1305	79		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	263	14	543			35	13	17			31	1560	313			566	1305	79		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	292	16	603			39	14	19			34	1733	348			629	1450	88		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	292	16	603			39	14	19			34	1733	348			629	1450	88		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Final Vol.:	292	16	603			39	14	19			34	1733	348			629	1450	88		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.95	1.00	0.85			0.95	0.92	0.92			0.95	0.95	0.85			0.92	0.94	0.94		
Lanes:	1.00	1.00	1.00			1.00	0.43	0.57			1.00	2.00	1.00			2.00	1.89	0.11		
Final Sat.:	1805	1900	1615			1805	753	985			1805	3610	1615			3502	3373	204		
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.01	0.37			0.02	0.02	0.02			0.02	0.48	0.22			0.18	0.43	0.43		
Crit Moves:			****			****						****				****				
Green/Cycle:	0.18	0.19	0.36			0.02	0.02	0.02			0.03	0.46	0.65			0.17	0.61	0.61		
Volume/Cap:	0.88	0.04	1.04			1.04	0.88	0.88			0.71	1.04	0.33			1.04	0.71	0.71		
Delay/Veh:	61.5	33.4	80.9			209.1	146	146.0			86.8	60.8	8.2			89.4	14.7	14.7		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	61.5	33.4	80.9			209.1	146	146.0			86.8	60.8	8.2			89.4	14.7	14.7		
HCM2kAvg:	12	0	27			4	3	3			2	37	5			17	17	17		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 | Critical Vol./Cap. (X): 1.018
Loss Time (sec): 8 (Y+R = 4 sec) | Average Delay (sec/veh): 41.5
Optimal Cycle: 180 | Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	0	0	0	1	1	0	0	2	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	0	0	0			1482	3	659			0	1989	149			0	1291	684		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	0			1482	3	659			0	1989	149			0	1291	684		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.00			0.90	0.90	0.00		
PHF Volume:	0	0	0			1647	3	732			0	2210	0			0	1434	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	0	0	0			1647	3	732			0	2210	0			0	1434	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
Final Vol.:	0	0	0			1647	3	732			0	2210	0			0	1434	0		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	1.00	1.00	1.00			0.85	0.85	0.75			1.00	0.91	1.00			1.00	0.91	1.00		
Lanes:	0.00	0.00	0.00			1.99	0.01	2.00			0.00	3.00	1.00			0.00	3.00	1.00		
Final Sat.:	0	0	0			3223	7	2842			0	5187	1900			0	5187	1900		
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.51	0.51	0.26			0.00	0.43	0.00			0.00	0.28	0.00		
Crit Moves:						****						****				****				
Green/Cycle:	0.00	0.00	0.00			0.50	0.50	0.50			0.00	0.42	0.00			0.00	0.42	0.00		
Volume/Cap:	0.00	0.00	0.00			1.02	1.02	0.51			0.00	1.02	0.00			0.00	0.66	0.00		
Delay/Veh:	0.0	0.0	0.0			52.0	52.0	17.1			0.0	53.1	0.0			0.0	24.1	0.0		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	0.0	0.0	0.0			52.0	52.0	17.1			0.0	53.1	0.0			0.0	24.1	0.0		
HCM2kAvg:	0	0	0			39	39	8			0	31	0			0	13	0		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 | Critical Vol./Cap. (X): 1.267
Loss Time (sec): 8 (Y+R = 4 sec) | Average Delay (sec/veh): 106.3
Optimal Cycle: 180 | Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	1	0	0	1	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	166	6	800			0	0	0			0	2870	601			0	1809	1250		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	166	6	800			0	0	0			0	2870	601			0	1809	1250		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.00			0.90	0.90	0.00		
PHF Volume:	184	7	889			0	0	0			0	3189	0			0	2010	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	184	7	889			0	0	0			0	3189	0			0	2010	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
Final Vol.:	184	7	889			0	0	0			0	3189	0			0	2010	0		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.85	0.85	0.85			1.00	1.00	1.00			1.00	0.91	1.00			1.00	0.91	1.00		
Lanes:	1.93	0.07	1.00			0.00	0.00	0.00			0.00	3.00	1.00			0.00	3.00	1.00		
Final Sat.:	3117	113	1615			0	0	0			0	5187	1900			0	5187	1900		
Capacity Analysis Module:																				
Vol/Sat:	0.06	0.06	0.55			0.00	0.00	0.00			0.00	0.61	0.00			0.00	0.39	0.00		
Crit Moves:			****									****				****				
Green/Cycle:	0.43	0.43	0.43			0.00	0.00	0.00			0.00	0.49	0.00			0.00	0.49	0.00		
Volume/Cap:	0.14	0.14	1.27			0.00	0.00	0.00			0.00	1.27	0.00			0.00	0.80	0.00		
Delay/Veh:	17.0	17.0	159.3			0.0	0.0	0.0			0.0	149	0.0			0.0	23.5	0.0		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	17.0	17.0	159.3			0.0	0.0	0.0			0.0	149	0.0			0.0	23.5	0.0		
HCM2kAvg:	2	2	52			0	0	0			0	62	0			0	19	0		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: D[25.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	2	0	0
Volume Module:																				
Base Vol:	0	0	117			0	0	0			0	3085	585			0	3059	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	117			0	0	0			0	3085	585			0	3059	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	0	0	130			0	0	0			0	3428	650			0	3399	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Final Vol.:	0	0	130			0	0	0			0	3428	650			0	3399	0		
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	857	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	305	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	305	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	0.43	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
Queue:	xxxxx	xxxx	2.0	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Stopped Del:	xxxxx	xxxx	25.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	D	*	*	*	*	*	*	*	*	*								
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT										
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*								
ApproachDel:	25.3			xxxxxx			xxxxxx			xxxxxx										
ApproachLOS:	D			*			*			*										

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.623
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 285.2
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1! 0 0			0 1 0 0 2			2 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	444	47	36	210	48	533	677	2312	213	105	2082	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	444	47	36	210	48	533	677	2312	213	105	2082	162
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	493	52	40	233	53	592	752	2569	237	117	2313	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	493	52	40	233	53	592	752	2569	237	117	2313	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	493	52	40	233	53	592	752	2569	237	117	2313	180
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.94	0.94	0.73	0.88	0.89	0.89	0.90	0.89	0.89
Lanes:	1.73	0.15	0.12	0.81	0.19	2.00	2.00	1.83	0.17	1.00	1.86	0.14
Final Sat.:	3058	273	209	1456	333	2786	3334	3106	286	1718	3154	245
Capacity Analysis Module:												
Vol/Sat:	0.16	0.19	0.19	0.16	0.16	0.21	0.23	0.83	0.83	0.07	0.73	0.73
Crit Moves:		****				****	****				****	
Green/Cycle:	0.12	0.12	0.12	0.13	0.13	0.13	0.14	0.55	0.55	0.04	0.45	0.45
Volume/Cap:	1.37	1.62	1.62	1.22	1.22	1.62	1.62	1.51	1.51	1.51	1.62	1.62
Delay/Veh:	223.8	337	336.9	175.7	176	336.1	333.2	257	257.0	334.7	311	310.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	223.8	337	336.9	175.7	176	336.1	333.2	257	257.0	334.7	311	310.8
HCM2kAvg:	21	29	29	19	19	25	32	101	101	11	97	97

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2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 1.575
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 247.1
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2 0 1			1 0 1 1 0			1 0 1 1 0			1 0 2 0 1		
Volume Module:												
Base Vol:	649	540	65	202	438	219	367	1313	416	155	1215	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	649	540	65	202	438	219	367	1313	416	155	1215	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	721	600	72	224	487	243	408	1459	462	172	1350	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	721	600	72	224	487	243	408	1459	462	172	1350	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	721	600	72	224	487	243	408	1459	462	172	1350	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.81	0.90	0.86	0.86	0.90	0.87	0.87	0.90	0.90	0.81
Lanes:	1.00	2.00	1.00	1.00	1.33	0.67	1.00	1.52	0.48	1.00	2.00	1.00
Final Sat.:	1718	3437	1537	1718	2177	1088	1718	2516	797	1718	3437	1537
Capacity Analysis Module:												
Vol/Sat:	0.42	0.17	0.05	0.13	0.22	0.22	0.24	0.58	0.58	0.10	0.39	0.07
Crit Moves:	****				****			****		****		
Green/Cycle:	0.27	0.23	0.30	0.17	0.14	0.14	0.16	0.37	0.37	0.06	0.27	0.44
Volume/Cap:	1.58	0.75	0.16	0.75	1.58	1.58	1.46	1.58	1.58	1.58	1.46	0.15
Delay/Veh:	306.0	39.5	26.1	49.1	312	312.1	267.5	295	294.5	344.9	249	16.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	306.0	39.5	26.1	49.1	312	312.1	267.5	295	294.5	344.9	249	16.7
HCM2kAvg:	58	10	2	9	29	29	32	73	73	15	48	2

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2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 5.3 Worst Case Level Of Service: E[38.2]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	8	114	65	148	429	8	2	8	5	75	5	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	114	65	148	429	8	2	8	5	75	5	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	9	127	72	164	477	9	2	9	6	83	6	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	9	127	72	164	477	9	2	9	6	83	6	1
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	486	xxxx	xxxxx	199	xxxx	xxxxx	994	1027	481	998	995	163
Potent Cap.:	1088	xxxx	xxxxx	1386	xxxx	xxxxx	226	236	589	225	247	887
Move Cap.:	1088	xxxx	xxxxx	1386	xxxx	xxxxx	198	204	589	192	213	887
Volume/Cap:	0.01	xxxx	xxxx	0.12	xxxx	xxxx	0.01	0.04	0.01	0.43	0.03	0.00
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.3	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	259	xxxxx	xxxx	196	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	2.2	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	19.8	xxxxx	xxxxx	38.2	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	E	*
ApproachDel:	xxxxxx			xxxxxx			19.8			38.2		
ApproachLOS:	*			*			C			E		

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2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 5.9 Worst Case Level Of Service: B[11.5]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 1 0			0 1 0 0 0			0 0 0 0 0			0 0 1! 0 0		
Volume Module:												
Base Vol:	0	66	15	286	202	0	0	0	0	17	0	177
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	66	15	286	202	0	0	0	0	17	0	177
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	73	17	318	224	0	0	0	0	19	0	197
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	73	17	318	224	0	0	0	0	19	0	197
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	90	xxxx	xxxxx	xxxx	xxxx	xxxxx	942	xxxx	82
Potent Cap.:	xxxx	xxxx	xxxxx	1518	xxxx	xxxxx	xxxx	xxxx	xxxxx	294	xxxx	984
Move Cap.:	xxxx	xxxx	xxxxx	1518	xxxx	xxxxx	xxxx	xxxx	xxxxx	237	xxxx	984
Volume/Cap:	xxxx	xxxx	xxxx	0.21	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	0.20
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	771	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1.1	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	11.5	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			11.5		
ApproachLOS:	*			*			*			B		

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2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[11.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	7	0	10		0	0	0		0	296	5		3	187	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	7	0	10		0	0	0		0	296	5		3	187	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	8	0	11		0	0	0		0	329	6		3	208	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	8	0	11		0	0	0		0	329	6		3	208	0	

Critical Gap Module:

Critical Gp:	6.4	xxxx		6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		

Capacity Module:

Cnflict Vol:	546	xxxx		332	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		334	xxxx	xxxxx		
Potent Cap.:	499	xxxx		710	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1225	xxxx	xxxxx		
Move Cap.:	498	xxxx		710	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1225	xxxx	xxxxx		
Volume/Cap:	0.02	xxxx		0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.00	xxxx	xxxx		

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.9	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	604	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Shrd StpDel:	xxxxx	11.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.9	xxxx	xxxxx			
Shared LOS:	*	B	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	11.2				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	B				*				*				*			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 2.6 Worst Case Level Of Service: B[14.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0 1	0	0	0	0 0	0	0	0	1 0	0	1	0	0 0
Volume Module:																
Base Vol:	47	0	67		0	0	0		0	359	117		60	168	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	47	0	67		0	0	0		0	359	117		60	168	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	52	0	74		0	0	0		0	399	130		67	187	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	52	0	74		0	0	0		0	399	130		67	187	0	

Critical Gap Module:

Critical Gp:	6.4	xxxx		6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		

Capacity Module:

Cnflict Vol:	784	xxxx		464	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		529	xxxx	xxxxx		
Potent Cap.:	362	xxxx		598	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1038	xxxx	xxxxx		
Move Cap.:	344	xxxx		598	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1038	xxxx	xxxxx		
Volume/Cap:	0.15	xxxx		0.12	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.06	xxxx	xxxx		

Level Of Service Module:

Queue:	0.5	xxxx		0.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx		
Stopped Del:	17.3	xxxx		11.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.7	xxxx	xxxxx		
LOS by Move:	C	*		B	*	*	*	*	*	*		A	*	*		
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.7	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	14.1				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	B				*				*				*			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 22.5 Worst Case Level Of Service: F[169.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	1	0	0	1 0	1	0	0	1 0
Volume Module:																
Base Vol:	52	0	164		102	2	3		1	417	8		156	173	68	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	52	0	164		102	2	3		1	417	8		156	173	68	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	58	0	182		113	2	3		1	463	9		173	192	76	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	58	0	182		113	2	3		1	463	9		173	192	76	

Critical Gap Module:

Critical Gp:	7.1	xxxx		6.2	7.1	6.5	6.2		4.1	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx		3.3	3.5	4.0	3.3		2.2	xxxx	xxxxx		2.2	xxxx	xxxxx	

Capacity Module:

Cnflict Vol:	1049	xxxx		468	1138	1051	230		268	xxxx	xxxxx		472	xxxx	xxxxx	
Potent Cap.:	207	xxxx		599	180	229	814		1296	xxxx	xxxxx		1090	xxxx	xxxxx	
Move Cap.:	179	xxxx		599	110	192	814		1296	xxxx	xxxxx		1090	xxxx	xxxxx	
Volume/Cap:	0.32	xxxx		0.30	1.03	0.01	0.00		0.00	xxxx	xxxx		0.16	xxxx	xxxx	

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx		0.6	xxxx	xxxxx		
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.8	xxxx	xxxxx		8.9	xxxx	xxxxx		
LOS by Move:	*	*	*	*	*	*		A	*	*		A	*	*		
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	383	xxxxx	xxxx	114	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	4.1	xxxxx	xxxxx	7.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx	28.9	xxxxx	xxxxx	169	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx			
Shared LOS:	*	D	*	*	F	*	*	*	*	*	*	*	*			
ApproachDel:	28.9				169.2				xxxxxx				xxxxxx			
ApproachLOS:	D				F				*				*			

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.576
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 28.1
Optimal Cycle: 55 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	2	0 0	1	2	0	0 1	0	1	0	1 0
Volume Module:																
Base Vol:	133	620	43		55	647	249		469	13	201		9	15	40	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	133	620	43		55	647	249		469	13	201		9	15	40	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	148	689	48		61	719	277		521	14	223		10	17	44	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	148	689	48		61	719	277		521	14	223		10	17	44	
PCE Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
MLF Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Final Vol.:	148	689	48		61	719	277		521	14	223		10	17	44	

Saturation Flow Module:

Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.90	0.90		0.90	0.90	0.81		0.90	0.84	0.84		0.93	0.87	0.87	
Lanes:	1.00	1.87	0.13		1.00	2.00	1.00		2.00	0.06	0.94		1.00	0.27	0.73	
Final Sat.:	1718	3182	221		1718	3437	1537		3432	97	1502		1769	452	1207	

Capacity Analysis Module:

Vol/Sat:	0.09	0.22	0.22		0.04	0.21	0.18		0.15	0.15	0.15		0.01	0.04	0.04	
Crit Moves:	****					****			****					****		
Green/Cycle:	0.15	0.44	0.44		0.07	0.36	0.36		0.26	0.32	0.32		0.01	0.06	0.06	
Volume/Cap:	0.58	0.49	0.49		0.49	0.58	0.50		0.58	0.47	0.47		0.47	0.58	0.58	
Delay/Veh:	42.8	20.3	20.3		47.7	26.3	25.4		32.9	28.2	28.2		64.7	53.1	53.1	
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
AdjDel/Veh:	42.8	20.3	20.3		47.7	26.3	25.4		32.9	28.2	28.2		64.7	53.1	53.1	
HCM2kAvg:	5	8	8		3	9	7		8	6	6		1	3	3	

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	796		0	0	853		4	0		0	69		0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	796		0	0	853		4	0		0	69		0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	884		0	0	948		4	0		0	77		0	0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0		0	0	0
Final Vol.:	0	884		0	0	948		4	0		0	77		0	0	0
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	476	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	541	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	541	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.14	xxxx	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.5	xxxxx	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.8	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx				xxxxxx				12.8				xxxxxx			
ApproachLOS:	*				*				B				*			

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Average Delay (sec/veh): 12.3 Worst Case Level Of Service: F[268.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Ignore				Include			
Lanes:	1	0	1	1	0	1	0	1	1	0	0	0	1!	0	0	1	0	0	1	0
Volume Module:																				
Base Vol:	38	668		60	92	800		30	55		0	23	45		0	73
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	38	668		60	92	800		30	55		0	23	45		0	73
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90	0.90	0.90
PHF Volume:	42	742		67	102	889		33	61		0	0	50		0	81
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	42	742		67	102	889		33	61		0	0	50		0	81
Critical Gap Module:																
Critical Gp:	4.2	xxxx	xxxxx		4.2	xxxx	xxxxx		7.5	xxxx	xxxxx		7.5	xxxx		6.9
FollowUpTim:	2.3	xxxx	xxxxx		2.3	xxxx	xxxxx		3.5	xxxx	xxxxx		3.5	xxxx		3.3
Capacity Module:																
Cnflict Vol:	922	xxxx	xxxxx		809	xxxx	xxxxx		1566	xxxx	xxxxx		1509	xxxx		404
Potent Cap.:	718	xxxx	xxxxx		793	xxxx	xxxxx		75	xxxx	xxxxx		83	xxxx		596
Move Cap.:	718	xxxx	xxxxx		793	xxxx	xxxxx		56	xxxx	xxxxx		71	xxxx		596
Volume/Cap:	0.06	xxxx	xxxx		0.13	xxxx	xxxx		1.09	xxxx	xxxx		0.70	xxxx		0.14
Level Of Service Module:																
Queue:	0.2	xxxx	xxxxx		0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx		3.2	xxxx	xxxxx		
Stopped Del:	10.3	xxxx	xxxxx		10.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	130.6	xxxx	xxxxx			
LOS by Move:	B	*	*		B	*	*		*	*	*		F	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		xxxx	56	xxxxx		xxxx	xxxx		596
SharedQueue:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	5.1	xxxxx		xxxxx	xxxx		0.5
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	269	xxxxx		xxxxx	xxxx		12.0
Shared LOS:	*	*	*		*	*	*		*	F	*		*	*		B
ApproachDel:	xxxxxx				xxxxxx				268.6				57.2			
ApproachLOS:	*				*				F				F			

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Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.570
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 20.0
Optimal Cycle: 54 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	1	0	0	1	0
Volume Module:																				
Base Vol:	487	377		14	26	265		26	53	97	618		17	61		29
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	487	377		14	26	265		26	53	97	618		17	61		29
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	541	419		16	29	294		29	59	108	687		19	68		32
Reduct Vol:	0	0		0	0	0		0	0	0	0		0	0		0
Reduced Vol:	541	419		16	29	294		29	59	108	687		19	68		32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	541	419		16	29	294		29	59	108	687		19	68		32
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.94	0.94	0.95	1.00	0.75	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Lanes:	1.00	1.93	0.07	1.00	1.82	0.18	1.00	1.00	2.00	1.00	0.68	0.32				
Final Sat.:	1805	3463	129	1805	3245	318	1805	1900	2842	1805	1226	583				
Capacity Analysis Module:																
Vol/Sat:	0.30	0.12	0.12	0.02	0.09	0.09	0.03	0.06	0.24	0.01	0.06	0.06				
Crit Moves:	****				****		****				****					
Green/Cycle:	0.53	0.61	0.61	0.08	0.16	0.16	0.06	0.13	0.66	0.02	0.10	0.10				
Volume/Cap:	0.57	0.20	0.20	0.20	0.57	0.57	0.57	0.44	0.37	0.44	0.57	0.57				
Delay/Veh:	16.8	8.9	8.9	43.7	40.2	40.2	53.3	41.3	7.9	55.0	47.5	47.5				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	16.8	8.9	8.9	43.7	40.2	40.2	53.3	41.3	7.9	55.0	47.5	47.5				
HCM2kAvg:	12	3	3	1	5	5	3	3	5	1	4	4				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.848
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 28.8
Optimal Cycle: 99 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	1!	0	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	5	10		15	343		2	101		105	1309		20	14	1076	242
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	5	10		15	343		2	101		105	1309		20	14	1076	242
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	6	11		17	381		2	112		117	1454		22	16	1196	269
Reduct Vol:	0	0		0	0	0		0	0		0	0		0	0	0
Reduced Vol:	6	11		17	381		2	112		117	1454		22	16	1196	269
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	6	11		17	381		2	112		117	1454		22	16	1196	269
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.95	0.85	0.85	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92
Lanes:	0.17	0.33	0.50	1.00	0.02	0.98	1.00	1.97	0.03	1.00	1.63	0.37				
Final Sat.:	293	586	879	1805	31	1589	1805	3549	54	1805	2865	644				
Capacity Analysis Module:																
Vol/Sat:	0.02	0.02	0.02	0.21	0.07	0.07	0.06	0.41	0.41	0.01	0.42	0.42				
Crit Moves:	****			****			****				****					
Green/Cycle:	0.02	0.02	0.02	0.25	0.25	0.25	0.08	0.56	0.56	0.01	0.49	0.49				
Volume/Cap:	0.85	0.85	0.85	0.85	0.28	0.28	0.85	0.74	0.74	0.74	0.85	0.85				
Delay/Veh:	134.4	134	134.4	49.7	30.7	30.7	81.7	18.1	18.1	131.9	26.3	26.3				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	134.4	134	134.4	49.7	30.7	30.7	81.7	18.1	18.1	131.9	26.3	26.3				
HCM2kAvg:	3	3	3	14	3	3	6	18	18	2	22	22				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.933
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 30.6
Optimal Cycle: 121 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ignore					Ignore					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	1!	0	0	2	0	0	0	1	0	0	2	0	1	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	0			1175	0	400		0	1577	358		0	1249	286				
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00				
Initial Bse:	0	0	0			1175	0	400		0	1577	358		0	1249	286				
User Adj:	1.00	1.00	0.00			1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.00			0.90	0.90	0.00		0.90	0.90	0.00		0.90	0.90	0.00				
PHF Volume:	0	0	0			1306	0	0		0	1752	0		0	1388	0				
Reduct Vol:	0	0	0			0	0	0		0	0	0		0	0	0				
Reduced Vol:	0	0	0			1306	0	0		0	1752	0		0	1388	0				
PCE Adj:	1.00	1.00	0.00			1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00				
MLF Adj:	1.00	1.00	0.00			1.00	1.00	0.00		1.00	1.00	0.00		1.00	1.00	0.00				
Final Vol.:	0	0	0			1306	0	0		0	1752	0		0	1388	0				
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900		1900	1900	1900		1900	1900	1900				
Adjustment:	1.00	1.00	1.00			0.92	1.00	1.00		1.00	0.95	1.00		1.00	0.95	1.00				
Lanes:	0.00	1.00	0.00			2.00	0.00	1.00		0.00	2.00	1.00		0.00	2.00	1.00				
Final Sat.:	0	1900	0			3502	0	1900		0	3610	1900		0	3610	1900				
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.37	0.00	0.00		0.00	0.49	0.00		0.00	0.38	0.00				
Crit Moves:						****					****			****						
Green/Cycle:	0.00	0.00	0.00			0.40	0.00	0.00		0.00	0.52	0.00		0.00	0.52	0.00				
Volume/Cap:	0.00	0.00	0.00			0.93	0.00	0.00		0.00	0.93	0.00		0.00	0.74	0.00				
Delay/Veh:	0.0	0.0	0.0			40.3	0.0	0.0		0.0	31.5	0.0		0.0	20.3	0.0				
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0			40.3	0.0	0.0		0.0	31.5	0.0		0.0	20.3	0.0				
HCM2kAvg:	0	0	0			25	0	0		0	30	0		0	18	0				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.920
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 19.2
Optimal Cycle: 112 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Permitted					Permitted				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0
Volume Module:																				
Base Vol:	362	0	346			0	0	0			0	2245	507		0	1173	1075			
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00			
Initial Bse:	362	0	346			0	0	0			0	2245	507		0	1173	1075			
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00		1.00	1.00	0.00			
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.00		0.90	0.90	0.00			
PHF Volume:	402	0	384			0	0	0			0	2494	0		0	1303	0			
Reduct Vol:	0	0	0			0	0	0			0	0	0		0	0	0			
Reduced Vol:	402	0	384			0	0	0			0	2494	0		0	1303	0			
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00		1.00	1.00	0.00			
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00		1.00	1.00	0.00			
Final Vol.:	402	0	384			0	0	0			0	2494	0		0	1303	0			
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900		1900	1900	1900			
Adjustment:	0.90	1.00	0.90			1.00	1.00	1.00			1.00	0.95	0.95		1.00	0.95	0.95			
Lanes:	1.51	0.00	1.49			0.00	0.00	0.00			0.00	2.00	0.00		0.00	2.00	0.00			
Final Sat.:	2595	0	2556			0	0	0			0	3610	0		0	3610	0			
Capacity Analysis Module:																				
Vol/Sat:	0.15	0.00	0.15			0.00	0.00	0.00			0.00	0.69	0.00		0.00	0.36	0.00			
Crit Moves:	****											****								
Green/Cycle:	0.17	0.00	0.17			0.00	0.00	0.00			0.00	0.75	0.00		0.00	0.75	0.00			
Volume/Cap:	0.92	0.00	0.89			0.00	0.00	0.00			0.00	0.92	0.00		0.00	0.48	0.00			
Delay/Veh:	55.8	0.0	52.0			0.0	0.0	0.0			0.0	15.7	0.0		0.0	5.0	0.0			
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		1.00	1.00	1.00			
AdjDel/Veh:	55.8	0.0	52.0			0.0	0.0	0.0			0.0	15.7	0.0		0.0	5.0	0.0			
HCM2kAvg:	12	0	11			0	0	0			0	35	0		0	8	0			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 1.145
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 97.5
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	0	1	0	1	0	1	0	1	2	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	409	199		76		329	95	608		602	1713	276		104	1231	213				
Growth Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00				
Initial Bse:	409	199		76		329	95	608		602	1713	276		104	1231	213				
User Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00				
PHF Adj:	0.90	0.90		0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90				
PHF Volume:	454	221		84		366	106	676		669	1903	307		116	1368	237				
Reduct Vol:	0	0		0		0	0	0		0	0	0		0	0	0				
Reduced Vol:	454	221		84		366	106	676		669	1903	307		116	1368	237				
PCE Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00				
MLF Adj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00				
Final Vol.:	454	221		84		366	106	676		669	1903	307		116	1368	237				
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900	1900		1900	1900	1900		1900	1900	1900				
Adjustment:	0.92	0.96		0.96		0.95	1.00	0.85		0.92	0.95	0.85		0.95	0.95	0.85				
Lanes:	2.00	0.72		0.28		1.00	1.00	1.00		2.00	2.00	1.00		1.00	2.00	1.00				
Final Sat.:	3502	1319		504		1805	1900	1615		3502	3610	1615		1805	3610	1615				
Capacity Analysis Module:																				
Vol/Sat:	0.13	0.17		0.17		0.20	0.06	0.42		0.19	0.53	0.19		0.06	0.38	0.15				
Crit Moves:		****				****					****			****						
Green/Cycle:	0.12	0.15		0.15		0.18	0.21	0.38		0.17	0.46	0.58		0.06	0.34	0.52				
Volume/Cap:	1.10	1.14		1.14		1.14	0.27	1.10		1.10	1.14	0.33		1.14	1.10	0.28				
Delay/Veh:	119.7	143		142.5		136.6	33.8	99.1		109.5	99.7	11.2		180.9	91.6	13.7				
User DelAdj:	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00				
AdjDel/Veh:	119.7	143		142.5		136.6	33.8	99.1		109.5	99.7	11.2		180.9	91.6	13.7				
HCM2kAvg:	14	18		18		21	3	33		19	47	5		8	33	4				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 1.152
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 80.2
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0

Volume Module:

Base Vol:	267	21	692	120	30	57	52	1358	332	752	1166	127
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	267	21	692	120	30	57	52	1358	332	752	1166	127
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	297	23	769	133	33	63	58	1509	369	836	1296	141
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	297	23	769	133	33	63	58	1509	369	836	1296	141
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	297	23	769	133	33	63	58	1509	369	836	1296	141

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	0.95	0.90	0.90	0.95	0.95	0.85	0.92	0.94	0.94
Lanes:	1.00	1.00	1.00	1.00	0.34	0.66	1.00	2.00	1.00	2.00	1.80	0.20
Final Sat.:	1805	1900	1615	1805	591	1123	1805	3610	1615	3502	3207	349

Capacity Analysis Module:

Vol/Sat:	0.16	0.01	0.48	0.07	0.06	0.06	0.03	0.42	0.23	0.24	0.40	0.40
Crit Moves:			****	****				****		****		
Green/Cycle:	0.20	0.21	0.41	0.06	0.07	0.07	0.04	0.36	0.56	0.21	0.53	0.53
Volume/Cap:	0.82	0.06	1.15	1.15	0.82	0.82	0.77	1.15	0.41	1.15	0.77	0.77
Delay/Veh:	51.6	32.0	114.3	177.2	79.9	79.9	83.9	110	12.6	123.5	20.6	20.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.6	32.0	114.3	177.2	79.9	79.9	83.9	110	12.6	123.5	20.6	20.6
HCM2kAvg:	12	1	39	9	5	5	3	39	6	24	19	19

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.858
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 24.2
Optimal Cycle: 82 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0	0		0	0	0	0		0	0	0			0	0	0		
Lanes:	0	0	0	0	0	1	1	0	0	2	0	0	3	0	1	0	0	3	0	1

Volume Module:

Base Vol:	0	0	0	1154	0	593	0	2031	139	0	1452	546
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1154	0	593	0	2031	139	0	1452	546
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00
PHF Volume:	0	0	0	1282	0	659	0	2257	0	0	1613	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1282	0	659	0	2257	0	0	1613	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Final Vol.:	0	0	0	1282	0	659	0	2257	0	0	1613	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.75	1.00	0.91	1.00	1.00	0.91	1.00
Lanes:	0.00	0.00	0.00	2.00	0.00	2.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	0	0	0	3618	0	2842	0	5187	1900	0	5187	1900

Capacity Analysis Module:

Vol/Sat:	0.00	0.00	0.00	0.35	0.00	0.23	0.00	0.44	0.00	0.00	0.31	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.41	0.00	0.41	0.00	0.51	0.00	0.00	0.51	0.00
Volume/Cap:	0.00	0.00	0.00	0.86	0.00	0.56	0.00	0.86	0.00	0.00	0.61	0.00
Delay/Veh:	0.0	0.0	0.0	31.9	0.0	23.0	0.0	24.6	0.0	0.0	18.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	31.9	0.0	23.0	0.0	24.6	0.0	0.0	18.1	0.0
HCM2kAvg:	0	0	0	22	0	8	0	23	0	0	12	0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.132
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 66.4
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0	0		0	0	0	0		0	0	0			0	0	0		
Lanes:	1	1	0	0	1	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1

Volume Module:

Base Vol:	106	0	677	0	0	0	0	2687	498	0	1892	1058
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	106	0	677	0	0	0	0	2687	498	0	1892	1058
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00
PHF Volume:	118	0	752	0	0	0	0	2986	0	0	2102	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	118	0	752	0	0	0	0	2986	0	0	2102	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Final Vol.:	118	0	752	0	0	0	0	2986	0	0	2102	0

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	0.85	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00
Lanes:	2.00	0.00	1.00	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00
Final Sat.:	3618	0	1615	0	0	0	0	5187	1900	0	5187	1900

Capacity Analysis Module:

Vol/Sat:	0.03	0.00	0.47	0.00	0.00	0.00	0.00	0.58	0.00	0.00	0.41	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.41	0.00	0.41	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.51	0.00
Volume/Cap:	0.08	0.00	1.13	0.00	0.00	0.00	0.00	1.13	0.00	0.00	0.80	0.00
Delay/Veh:	17.9	0.0	106.6	0.0	0.0	0.0	0.0	89.3	0.0	0.0	22.1	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	17.9	0.0	106.6	0.0	0.0	0.0	0.0	89.3	0.0	0.0	22.1	0.0
HCM2kAvg:	1	0	38	0	0	0	0	48	0	0	19	0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: C[23.7]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	2	0	0

Volume Module:

Base Vol:	0	0	159	0	0	0	0	2653	711	0	2950	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	159	0	0	0	0	2653	711	0	2950	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	177	0	0	0	0	2948	790	0	3278	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	177	0	0	0	0	2948	790	0	3278	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	737	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	365	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	365	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	0.48	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx

Level Of Service Module:

Queue:	xxxxx	xxxx	2.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	23.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	C	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	23.7			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	C			*			*			*		

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-------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2018 No Project SAT Peak Hour Conditions
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #5 E. 20th Street / Chico Mall Access
*******************************************************************************
Cycle (sec):       100               Critical Vol./Cap. (X):        1.637
Loss Time (sec):    16 (Y+R =  4 sec) Average Delay (sec/veh):      274.7
Optimal Cycle:     180               Level Of Service:                  F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  1! 0  0   0  1  0  0  2   2  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     519   79    51   222   67   549   652 1994   166   129 1882   230
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  519   79    51   222   67   549   652 1994   166   129 1882   230
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   577   88    57   247   74   610   724 2216   184   143 2091   256
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  577   88    57   247   74   610   724 2216   184   143 2091   256
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   577   88    57   247   74   610   724 2216   184   143 2091   256
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.93 0.93  0.93  0.94 0.94  0.73  0.88 0.89  0.89  0.90 0.89  0.89
Lanes:       1.67 0.20  0.13  0.77 0.23  2.00  2.00 1.85  0.15  1.00 1.78  0.22
Final Sat.:  2949  359   232  1377  416  2786  3334 3135   261  1718 3013   368
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.20 0.24  0.24  0.18 0.18  0.22  0.22 0.71  0.71  0.08 0.69  0.69
Crit Moves:             ****              ****  ****                   ****
Green/Cycle: 0.15 0.15  0.15  0.13 0.13  0.13  0.13 0.50  0.50  0.06 0.42  0.42
Volume/Cap:  1.31 1.64  1.64  1.34 1.34  1.64  1.64 1.42  1.42  1.42 1.64  1.64
Delay/Veh:  194.2  339 339.2 221.0  221 341.7 339.9  217 217.3 283.8  318 318.5
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 194.2  339 339.2 221.0  221 341.7 339.9  217 217.3 283.8  318 318.5
HCM2kAvg:      24   37    37    23   23    26    31   81    81    12   92    92
*******************************************************************************
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-------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2018 No Project SAT Peak Hour Conditions
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
           2000 HCM Operations Method (Base Volume Alternative)
*******************************************************************************
Intersection #6 E. 20th Street / Forest Avenue
*******************************************************************************
Cycle (sec):       100               Critical Vol./Cap. (X):        1.625
Loss Time (sec):    16 (Y+R =  4 sec) Average Delay (sec/veh):      259.4
Optimal Cycle:     180               Level Of Service:                  F
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:            Ovl             Include          Include            Ovl
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Lanes:        1  0  2  0  1   1  0  1  1  0   1  0  1  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     642  468    87   147  433   310   339 1227   351   145 1466   152
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  642  468    87   147  433   310   339 1227   351   145 1466   152
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:   713  520    97   163  481   344   377 1363   390   161 1629   169
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  713  520    97   163  481   344   377 1363   390   161 1629   169
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Final Vol.:   713  520    97   163  481   344   377 1363   390   161 1629   169
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900  1900 1900  1900  1900 1900  1900  1900 1900  1900
Adjustment:  0.90 0.90  0.81  0.90 0.85  0.85  0.90 0.87  0.87  0.90 0.90  0.81
Lanes:       1.00 2.00  1.00  1.00 1.17  0.83  1.00 1.56  0.44  1.00 2.00  1.00
Final Sat.:  1718 3437  1537  1718 1877  1344  1718 2584   739  1718 3437  1537
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.42 0.15  0.06  0.10 0.26  0.26  0.22 0.53  0.53  0.09 0.47  0.11
Crit Moves:  ****                  ****        ****                   ****
Green/Cycle: 0.26 0.25  0.32  0.16 0.16  0.16  0.13 0.36  0.36  0.06 0.29  0.45
Volume/Cap:  1.62 0.60  0.20  0.60 1.62  1.62  1.62 1.46  1.46  1.46 1.62  0.24
Delay/Veh:  328.6 33.9  25.0  42.6  332 332.1 343.2  242 241.9 295.0  321  17.1
User DelAdj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
AdjDel/Veh: 328.6 33.9  25.0  42.6  332 332.1 343.2  242 241.9 295.0  321  17.1
HCM2kAvg:      59    8     2     6   34    34    32   62    62    14   64     3
*******************************************************************************
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-------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2018 No Project SAT Peak Hour Conditions
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #7 Business Lane / Chico Mall Access
*******************************************************************************
Average Delay (sec/veh):     11.0   Worst Case Level Of Service:      F[113.4]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  1! 0  0   0  0  1! 0  0   0  0  1! 0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       9  142   240   143  561     7    13    8     8    84   11     4
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    9  142   240   143  561     7    13    8     8    84   11     4
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:    10  158   267   159  623     8    14    9     9    93   12     4
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:    10  158   267   159  623     8    14    9     9    93   12     4
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx   4.1 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.2 xxxx xxxxx   2.2 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  631 xxxx xxxxx   424 xxxx xxxxx  1264 1389   627  1265 1260   291
Potent Cap.:  961 xxxx xxxxx  1146 xxxx xxxxx   148  144   487   147  172   753
Move Cap.:    961 xxxx xxxxx  1146 xxxx xxxxx   120  121   487   120  144   753
Volume/Cap:  0.01 xxxx  xxxx  0.14 xxxx  xxxx  0.12 0.07  0.02  0.78 0.08  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:        0.0 xxxx xxxxx   0.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:  8.8 xxxx xxxxx   8.6 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  152 xxxxx  xxxx  127 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  0.8 xxxxx xxxxx  5.5 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 34.9 xxxxx xxxxx  113 xxxxx
Shared LOS:     *    *     *     *    *     *     *    D     *     *    F     *
ApproachDel:     xxxxxx           xxxxxx              34.9            113.4
ApproachLOS:        *                *                  D                F
```



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-------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2018 No Project SAT Peak Hour Conditions
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          2000 HCM Unsignalized Method (Base Volume Alternative)
*******************************************************************************
Intersection #8 Business Lane / Baney Lane
*******************************************************************************
Average Delay (sec/veh):     22.6   Worst Case Level Of Service:      F[ 71.8]
*******************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Uncontrolled     Uncontrolled      Stop Sign        Stop Sign
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  1  0   0  1  0  0  0   0  0  0  0  0   0  0  1! 0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  141    69   387  242     0     0    0     0    67    0   247
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  141    69   387  242     0     0    0     0    67    0   247
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90  0.90 0.90  0.90
PHF Volume:     0  157    77   430  269     0     0    0     0    74    0   274
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Final Vol.:     0  157    77   430  269     0     0    0     0    74    0   274
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4 xxxx   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5 xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   233 xxxx xxxxx  xxxx xxxx xxxxx  1324 xxxx   195
Potent Cap.: xxxx xxxx xxxxx  1346 xxxx xxxxx  xxxx xxxx xxxxx   174 xxxx   851
Move Cap.:   xxxx xxxx xxxxx  1346 xxxx xxxxx  xxxx xxxx xxxxx   117 xxxx   851
Volume/Cap:  xxxx xxxx  xxxx  0.32 xxxx  xxxx  xxxx xxxx  xxxx  0.64 xxxx  0.32
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx xxxxx   1.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx   8.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  364 xxxxx
SharedQueue:xxxxx xxxx xxxxx   1.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 10.6 xxxxx
Shrd StpDel:xxxxx xxxx xxxxx   8.9 xxxx xxxxx xxxxx xxxx xxxxx xxxxx 71.8 xxxxx
Shared LOS:     *    *     *     A    *     *     *    *     *     *    F     *
ApproachDel:     xxxxxx           xxxxxx           xxxxxx             71.8
ApproachLOS:        *                *                *                F
```

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[13.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	7	0	8		0	0	0		0	448	8		4	307	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	7	0	8		0	0	0		0	448	8		4	307	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	8	0	9		0	0	0		0	498	9		4	341	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	8	0	9		0	0	0		0	498	9		4	341	0	

Critical Gap Module:

Critical Gp:	6.4	xxxx		6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		

Capacity Module:

Cnflict Vol:	852	xxxx		502	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		507	xxxx	xxxxx		
Potent Cap.:	330	xxxx		569	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1058	xxxx	xxxxx		
Move Cap.:	329	xxxx		569	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1058	xxxx	xxxxx		
Volume/Cap:	0.02	xxxx		0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.00	xxxx	xxxx		

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.4	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT							
Shared Cap.:	xxxx	424	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Shrd StpDel:	xxxxx	13.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.4	xxxx	xxxxx			
Shared LOS:	*	B	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	13.8				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	B				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: C[19.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0
Volume Module:																
Base Vol:	122	0	92		0	0	0		0	357	156		67	198	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	122	0	92		0	0	0		0	357	156		67	198	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	136	0	102		0	0	0		0	397	173		74	220	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	136	0	102		0	0	0		0	397	173		74	220	0	

Critical Gap Module:

Critical Gp:	6.4	xxxx		6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx		
FollowUpTim:	3.5	xxxx		3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx		

Capacity Module:

Cnflict Vol:	852	xxxx		483	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		570	xxxx	xxxxx		
Potent Cap.:	330	xxxx		583	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1002	xxxx	xxxxx		
Move Cap.:	310	xxxx		583	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1002	xxxx	xxxxx		
Volume/Cap:	0.44	xxxx		0.18	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.07	xxxx	xxxx		

Level Of Service Module:

Queue:	2.1	xxxx		0.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx		
Stopped Del:	25.3	xxxx		12.5	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.9	xxxx	xxxxx		
LOS by Move:	D	*		B	*	*	*	*	*	*		A	*	*		
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT							
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.2	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.9	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	19.8				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	C				*				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 73.4 Worst Case Level Of Service: F[744.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0	0	0	0	1!	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	27	0	184		115	4	3		9	429	11		241	235	105	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	27	0	184		115	4	3		9	429	11		241	235	105	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	30	0	204		128	4	3		10	477	12		268	261	117	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	30	0	204		128	4	3		10	477	12		268	261	117	

Critical Gap Module:

Critical Gp:	7.1	xxxx		6.2	7.1	6.5	6.2		4.1	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx		3.3	3.5	4.0	3.3		2.2	xxxx	xxxxx		2.2	xxxx	xxxxx	

Capacity Module:

Cnflict Vol:	1362	xxxx		483	1460	1364		319		378	xxxxx	xxxxx		489	xxxx	xxxxx
Potent Cap.:	127	xxxx		588	108	149		726		1181	xxxx	xxxxx		1074	xxxx	xxxxx
Move Cap.:	98	xxxx		588	57	111		726		1181	xxxx	xxxxx		1074	xxxx	xxxxx
Volume/Cap:	0.31	xxxx		0.35	2.26	0.04		0.00		0.01	xxxx	xxxx		0.25	xxxx	xxxx

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx		1.0	xxxx	xxxxx		
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		8.1	xxxx	xxxxx		9.5	xxxx	xxxxx		
LOS by Move:	*	*	*	*	*	*		A	*	*		A	*	*		
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	359	xxxxx	xxxx	59	xxxx		xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	4.4	xxxxx	xxxxx	13.4	xxxxx		xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	32.1	xxxxx	xxxxx	745	xxxxx		xxxxx	xxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxx	xxxxx
Shared LOS:	*	D	*	*	F	*		*	*	*	*	*	*	*	*	*
ApproachDel:	32.1				744.9				xxxxxx				xxxxxx			
ApproachLOS:	D				F				*				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.728
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 31.8
Optimal Cycle: 73 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1	0	1	0	2	0	1	2	0	0	1	0	1
Volume Module:																
Base Vol:	260	473		3		23	444		305		418		23	287		13
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
Initial Bse:	260	473		3		23	444		305		418		23	287		13
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90	0.90		0.90
PHF Volume:	289	526		3		26	493		339		464		26	319		14
Reduct Vol:	0	0		0		0	0		0		0		0	0		0
Reduced Vol:	289	526		3		26	493		339		464		26	319		14
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
Final Vol.:	289	526		3		26	493		339		464		26	319		14

Saturation Flow Module:

Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		
Adjustment:	0.90	0.90		0.90	0.90	0.90		0.81	0.90	0.84		0.84	0.93	0.89		
Lanes:	1.00	1.99		0.01	1.00	2.00		1.00	2.00	0.07		0.93	1.00	0.36		
Final Sat.:	1718	3412		22	1718	3437		1537	3432	119		1484	1769	613		

Capacity Analysis Module:

Vol/Sat:	0.17	0.15		0.15	0.01	0.14		0.22	0.14	0.21		0.21	0.01	0.03		
Crit Moves:	****							****		****			****			
Green/Cycle:	0.23	0.49		0.49	0.05	0.30		0.30	0.25	0.30		0.30	0.01	0.05		
Volume/Cap:	0.73	0.32		0.32	0.32	0.47		0.73	0.54	0.73		0.73	0.54	0.54		
Delay/Veh:	42.2	15.7		15.7	48.4	28.7		36.9	33.0	37.3		37.3	132.9	52.3		
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		
AdjDel/Veh:	42.2	15.7		15.7	48.4	28.7		36.9	33.0	37.3		37.3	132.9	52.3		
HCM2kAvg:	10	5		5	1	6		11	7	11		11	1	2		

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2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[11.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0 0	0	0	1	1 0	0	0	0	0 1	0	0	0	0 0
Volume Module:																
Base Vol:	0	736		0	0	738		6	0		0	67	0		0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	736		0	0	738		6	0		0	67	0		0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	818		0	0	820		7	0		0	74	0		0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	0	818		0	0	820		7	0		0	74	0		0	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx				

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	413	xxxx	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	593	xxxx	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	593	xxxx	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.13	xxxx	xxxx	xxxx				

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.4	xxxxx	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.9	xxxxx	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx			xxxxxx			11.9			xxxxxx						
ApproachLOS:	*			*			B			*						

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Average Delay (sec/veh): 9.3 Worst Case Level Of Service: F[168.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Ignore				Include			
Lanes:	1	0	1	1 0	1	0	1	1 0	0	0	1!	0 0	1	0	0	1 0
Volume Module:																
Base Vol:	56	591		51	61	730		14	59		0	29	47		0	86
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	56	591		51	61	730		14	59		0	29	47		0	86
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90	0.90	0.90
PHF Volume:	62	657		57	68	811		16	66		0	0	52		0	96
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	62	657		57	68	811		16	66		0	0	52		0	96

Critical Gap Module:

Critical Gp:	4.2	xxxx	xxxxx	4.2	xxxx	xxxxx	7.5	xxxx	xxxxx	7.5	xxxx	6.9				
FollowUpTim:	2.3	xxxx	xxxxx	2.3	xxxx	xxxxx	3.5	xxxx	xxxxx	3.5	xxxx	3.3				

Capacity Module:

Cnflict Vol:	827	xxxx	xxxxx	713	xxxx	xxxxx	1407	xxxx	xxxxx	1351	xxxx	357				
Potent Cap.:	781	xxxx	xxxxx	863	xxxx	xxxxx	99	xxxx	xxxxx	109	xxxx	640				
Move Cap.:	781	xxxx	xxxxx	863	xxxx	xxxxx	74	xxxx	xxxxx	96	xxxx	640				
Volume/Cap:	0.08	xxxx	xxxx	0.08	xxxx	xxxx	0.88	xxxx	xxxx	0.54	xxxx	0.15				

Level Of Service Module:

Queue:	0.3	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.5	xxxx	xxxxx				
Stopped Del:	10.0	xxxx	xxxxx	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	80.0	xxxx	xxxxx				
LOS by Move:	B	*	*	A	*	*	*	*	*	F	*	*				
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT				
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	74	xxxxx	xxxx	xxxx	640				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.4	xxxxx	xxxxx	xxxx	0.5				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	168	xxxxx	xxxxx	xxxx	11.6				
Shared LOS:	*	*	*	*	*	*	*	F	*	*	*	B				
ApproachDel:	xxxxxx			xxxxxx			168.4			35.8						
ApproachLOS:	*			*			F			E						

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2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.608
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 58 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0 2	1	0	0	1 0
Volume Module:																
Base Vol:	619	399		8	10	188		27	28		71	667	5		52	22
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	619	399		8	10	188		27	28		71	667	5		52	22
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	688	443		9	11	209		30	31		79	741	6		58	24
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	688	443		9	11	209		30	31		79	741	6		58	24
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	688	443		9	11	209		30	31		79	741	6		58	24

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.95	0.95	0.95	0.95	0.93	0.93	0.95	1.00	0.75	0.95	0.96	0.96				
Lanes:	1.00	1.96	0.04	1.00	1.75	0.25	1.00	1.00	2.00	1.00	0.70	0.30				
Final Sat.:	1805	3528	71	1805	3097	445	1805	1900	2842	1805	1275	539				

Capacity Analysis Module:

Vol/Sat:	0.38	0.13	0.13	0.01	0.07	0.07	0.02	0.04	0.26	0.00	0.05	0.05				
Crit Moves:	****				****		****				****					
Green/Cycle:	0.63	0.70	0.70	0.03	0.11	0.11	0.03	0.10	0.72	0.01	0.07	0.07				
Volume/Cap:	0.61	0.18	0.18	0.18	0.61	0.61	0.61	0.43	0.36	0.43	0.61	0.61				
Delay/Veh:	12.2	5.1	5.1	48.3	45.1	45.1	67.4	44.3	5.3	71.3	52.7	52.7				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	12.2	5.1	5.1	48.3	45.1	45.1	67.4	44.3	5.3	71.3	52.7	52.7				
HCM2kAvg:	14	2	2	1	5	5	2	3	4	1	4	4				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.781
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 25.3
Optimal Cycle: 83 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	1	0	0	1 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	14		3	9	303		3	126	103	1036		10	15	930		290
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	14		3	9	303		3	126	103	1036		10	15	930		290
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	16		3	10	337		3	140	114	1151		11	17	1033		322
Reduct Vol:	0		0	0	0		0	0	0	0		0	0	0		0
Reduced Vol:	16		3	10	337		3	140	114	1151		11	17	1033		322
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	16		3	10	337		3	140	114	1151		11	17	1033		322

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.93	0.93	0.95	0.85	0.85	0.95	0.95	0.95	0.95	0.92	0.92				
Lanes:	0.54	0.11	0.35	1.00	0.02	0.98	1.00	1.98	0.02	1.00	1.52	0.48				
Final Sat.:	950	203	610	1805	38	1583	1805	3572	34	1805	2653	827				

Capacity Analysis Module:

Vol/Sat:	0.02	0.02	0.02	0.19	0.09	0.09	0.06	0.32	0.32	0.01	0.39	0.39				
Crit Moves:	****			****			****				****					
Green/Cycle:	0.02	0.02	0.02	0.24	0.24	0.24	0.08	0.56	0.56	0.02	0.50	0.50				
Volume/Cap:	0.78	0.78	0.78	0.78	0.37	0.37	0.78	0.57	0.57	0.57	0.78	0.78				
Delay/Veh:	116.0	116	116.0	44.5	32.4	32.4	68.2	14.4	14.4	73.3	22.9	22.9				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	116.0	116	116.0	44.5	32.4	32.4	68.2	14.4	14.4	73.3	22.9	22.9				
HCM2kAvg:	2	2	2	12	4	4	6	12	12	1	19	19				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.670
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 45 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ignore					Ignore					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	1!	0	0	2	0	0	0	1	0	0	2	0	1	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	0			733	0	317			0	1039	321			0	1248	216		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	0	0	0			733	0	317			0	1039	321			0	1248	216		
User Adj:	1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.00			0.90	0.90	0.00			0.90	0.90	0.00			0.90	0.90	0.00		
PHF Volume:	0	0	0			814	0	0			0	1154	0			0	1387	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	0	0	0			814	0	0			0	1154	0			0	1387	0		
PCE Adj:	1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00			1.00	1.00	0.00		
Final Vol.:	0	0	0			814	0	0			0	1154	0			0	1387	0		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	1.00	1.00	1.00			0.92	1.00	1.00			1.00	0.95	1.00			1.00	0.95	1.00		
Lanes:	0.00	1.00	0.00			2.00	0.00	1.00			0.00	2.00	1.00			0.00	2.00	1.00		
Final Sat.:	0	1900	0			3502	0	1900			0	3610	1900			0	3610	1900		
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00			0.23	0.00	0.00			0.00	0.32	0.00			0.00	0.38	0.00		
Crit Moves:						****					****						****			
Green/Cycle:	0.00	0.00	0.00			0.35	0.00	0.00			0.00	0.57	0.00			0.00	0.57	0.00		
Volume/Cap:	0.00	0.00	0.00			0.67	0.00	0.00			0.00	0.56	0.00			0.00	0.67	0.00		
Delay/Veh:	0.0	0.0	0.0			29.3	0.0	0.0			0.0	13.7	0.0			0.0	15.7	0.0		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	0.0	0.0	0.0			29.3	0.0	0.0			0.0	13.7	0.0			0.0	15.7	0.0		
HCM2kAvg:	0	0	0			12	0	0			0	11	0			0	15	0		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.642
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 12.9
Optimal Cycle: 42 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Permitted					Permitted				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	1	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0
Volume Module:																				
Base Vol:	303	0	293			0	0	0			0	1496	276			0	1161	805		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	303	0	293			0	0	0			0	1496	276			0	1161	805		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.00			0.90	0.90	0.00		
PHF Volume:	337	0	326			0	0	0			0	1662	0			0	1290	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	337	0	326			0	0	0			0	1662	0			0	1290	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	0.00		
Final Vol.:	337	0	326			0	0	0			0	1662	0			0	1290	0		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	1.00	0.90			1.00	1.00	1.00			1.00	0.95	0.95			1.00	0.95	0.95		
Lanes:	1.51	0.00	1.49			0.00	0.00	0.00			0.00	2.00	0.00			0.00	2.00	0.00		
Final Sat.:	2588	0	2559			0	0	0			0	3610	0			0	3610	0		
Capacity Analysis Module:																				
Vol/Sat:	0.13	0.00	0.13			0.00	0.00	0.00			0.00	0.46	0.00			0.00	0.36	0.00		
Crit Moves:	****											****								
Green/Cycle:	0.20	0.00	0.20			0.00	0.00	0.00			0.00	0.72	0.00			0.00	0.72	0.00		
Volume/Cap:	0.64	0.00	0.63			0.00	0.00	0.00			0.00	0.64	0.00			0.00	0.50	0.00		
Delay/Veh:	37.9	0.0	37.6			0.0	0.0	0.0			0.0	8.0	0.0			0.0	6.4	0.0		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	37.9	0.0	37.6			0.0	0.0	0.0			0.0	8.0	0.0			0.0	6.4	0.0		
HCM2kAvg:	7	0	7			0	0	0			0	14	0			0	9	0		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 1.063
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 63.6
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	0	1	0	1	0	1	0	1	2	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	450	374	60			235	116	597			649	973	167			65	919	393		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	450	374	60			235	116	597			649	973	167			65	919	393		
User Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90			0.90	0.90	0.90		
PHF Volume:	500	416	67			261	129	663			721	1081	186			72	1021	437		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	500	416	67			261	129	663			721	1081	186			72	1021	437		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Final Vol.:	500	416	67			261	129	663			721	1081	186			72	1021	437		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.92	0.98	0.98			0.95	1.00	0.85			0.92	0.95	0.85			0.95	0.95	0.85		
Lanes:	2.00	0.86	0.14			1.00	1.00	1.00			2.00	2.00	1.00			1.00	2.00	1.00		
Final Sat.:	3502	1603	257			1805	1900	1615			3502	3610	1615			1805	3610	1615		
Capacity Analysis Module:																				
Vol/Sat:	0.14	0.26	0.26			0.14	0.07	0.41			0.21	0.30	0.11			0.04	0.28	0.27		
Crit Moves:		****				****					****						****			
Green/Cycle:	0.16	0.24	0.24			0.14	0.22	0.42			0.19	0.41	0.56			0.05	0.27	0.40		
Volume/Cap:	0.91	1.06	1.06			1.06	0.30	0.98			1.06	0.74	0.20			0.74	1.06	0.67		
Delay/Veh:	61.5	97.7	97.7			118.2	32.7	59.1			92.7	27.2	11.0			71.9	83.9	27.2		
User DelAdj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
AdjDel/Veh:	61.5	97.7	97.7			118.2	32.7	59.1			92.7	27.2	11.0			71.9	83.9	27.2		
HCM2kAvg:	12	23	23			15	3	27			19	15	3			4	24	12		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 0.414
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 15.3
Optimal Cycle: 44 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	1	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	61		6		69	37		8		24	23	702		97		136	799			57
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	61		6		69	37		8		24	23	702		97		136	799			57
Added Vol:	0		0		1	5		0		0	0	18		0		1	21			7
PasserByVol:	0		0		0	0		0		0	0	0		0		0	0			0
Initial Fut:	61		6		70	42		8		24	23	720		97		137	820			64
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90			0.90
PHF Volume:	68		7		78	47		9		27	26	800		108		152	911			71
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0			0
Reduced Vol:	68		7		78	47		9		27	26	800		108		152	911			71
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Final Vol.:	68		7		78	47		9		27	26	800		108		152	911			71
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900			1900
Adjustment:	0.95	1.00		0.85		0.95	0.89		0.89		0.95	0.95		0.85		0.92	0.94			0.94
Lanes:	1.00	1.00		1.00		1.00	0.25		0.75		1.00	2.00		1.00		2.00	1.86			0.14
Final Sat.:	1805	1900		1615		1805	422		1265		1805	3610		1615		3502	3312			258
Capacity Analysis Module:																				
Vol/Sat:	0.04	0.00		0.05		0.03	0.02		0.02		0.01	0.22		0.07		0.04	0.28			0.28
Crit Moves:	****					****					****						****			
Green/Cycle:	0.09	0.02		0.14		0.12	0.05		0.05		0.03	0.58		0.67		0.11	0.66			0.66
Volume/Cap:	0.41	0.16		0.35		0.22	0.41		0.41		0.41	0.38		0.10		0.38	0.41			0.41
Delay/Veh:	44.7	49.9		40.2		40.3	49.2		49.2		51.8	11.2		5.7		41.6	7.9			7.9
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
AdjDel/Veh:	44.7	49.9		40.2		40.3	49.2		49.2		51.8	11.2		5.7		41.6	7.9			7.9
HCM2kAvg:	3	0		2		2	2		2		1	7		1		3	7			7

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.464
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 19.8
Optimal Cycle: 30 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	0	0	0	1	1	0	0	2	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	0		0		0	807		0		230	0	754		54		0	762			561
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	0		0		0	807		0		230	0	754		54		0	762			561
Added Vol:	0		0		0	14		0		0	0	23		0		0	29			0
PasserByVol:	0		0		0	16		0		0	0	0		0		0	0			0
Initial Fut:	0		0		0	837		0		230	0	777		54		0	791			561
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00			0.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.00		0.90	0.90			0.00
PHF Volume:	0		0		0	930		0		256	0	863		0		0	879			0
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0			0
Reduced Vol:	0		0		0	930		0		256	0	863		0		0	879			0
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00			0.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00			0.00
Final Vol.:	0		0		0	930		0		256	0	863		0		0	879			0
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900			1900
Adjustment:	1.00	1.00		1.00		0.95	1.00		0.75		1.00	0.91		1.00		1.00	0.91			1.00
Lanes:	0.00	0.00		0.00		2.00	0.00		2.00		0.00	3.00		1.00		0.00	3.00			1.00
Final Sat.:	0		0		0	3618		0		2842	0	5187		1900		0	5187			1900
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00		0.00		0.26	0.00		0.09		0.00	0.17		0.00		0.00	0.17			0.00
Crit Moves:						****					****						****			
Green/Cycle:	0.00	0.00		0.00		0.55	0.00		0.55		0.00	0.37		0.00		0.00	0.37			0.00
Volume/Cap:	0.00	0.00		0.00		0.46	0.00		0.16		0.00	0.46		0.00		0.00	0.46			0.00
Delay/Veh:	0.0	0.0		0.0		13.5	0.0		11.0		0.0	24.3		0.0		0.0	24.4			0.0
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
AdjDel/Veh:	0.0	0.0		0.0		13.5	0.0		11.0		0.0	24.3		0.0		0.0	24.4			0.0
HCM2kAvg:	0		0		0	9		0		2	0	7		0		0	7			0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.623
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 19.9
Optimal Cycle: 40 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	1	0	0	1	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	76		0		400	0		0		0	0	1336		225		0	1247			627
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	76		0		400	0		0		0	0	1336		225		0	1247			627
Added Vol:	0		0		0	0		0		0	0	37		0		0	29			19
PasserByVol:	0		0		0	0		0		0	0	16		0		0	0			13
Initial Fut:	76		0		400	0		0		0	0	1389		225		0	1276			659
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00			0.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.00		0.90	0.90			0.00
PHF Volume:	84		0		444	0		0		0	0	1543		0		0	1418			0
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0			0
Reduced Vol:	84		0		444	0		0		0	0	1543		0		0	1418			0
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00			0.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00			0.00
Final Vol.:	84		0		444	0		0		0	0	1543		0		0	1418			0
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900			1900
Adjustment:	0.95	1.00		0.85		1.00	1.00		1.00		0.91	1.00		1.00		0.91	1.00			1.00
Lanes:	2.00	0.00		1.00		0.00	0.00		0.00		3.00	1.00		0.00		3.00	1.00			0.00
Final Sat.:	3618		0		1615	0		0		0	5187	1900		0		5187	1900			0
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.00		0.28		0.00	0.00		0.00		0.00	0.30		0.00		0.00	0.27			0.00
Crit Moves:				****								****				****				
Green/Cycle:	0.44	0.00		0.44		0.00	0.00		0.00		0.00	0.48		0.00		0.00	0.48			0.00
Volume/Cap:	0.05	0.00		0.62		0.00	0.00		0.00		0.62	0.00		0.00		0.57	0.00			0.00
Delay/Veh:	16.0	0.0		23.2		0.0	0.0		0.0		19.9	0.0		0.0		19.1	0.0			0.0
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
AdjDel/Veh:	16.0	0.0		23.2		0.0	0.0		0.0		19.9	0.0		0.0		19.1	0.0			0.0
HCM2kAvg:	1	0		11		0	0		0		0	12		0		0	11			0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 E.20th Street / Business Lane

Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[11.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Stop Sign					Stop Sign					Uncontrolled					Uncontrolled				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	0	1	0	0	0	0	0	0	0	4	0	1	0	0	2	0	0
Volume Module:																				
Base Vol:	0		0		46	0		0		0	0	1495		241		0	1874			0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
Initial Bse:	0		0		46	0		0		0	0	1495		241		0	1874			0
Added Vol:	0		0		0	0		0		0	0	20		17		0	49			0
PasserByVol:	0		0		0	0		0		0	0	16		0		0	13			0
Initial Fut:	0		0		46	0		0		0	0	1531		258		0	1936			0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00			1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90			0.90
PHF Volume:	0		0		51	0		0		0	0	1701		287		0	2151			0
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0			0
Final Vol.:	0		0		51	0		0		0	0	1701		287		0	2151			0

Critical Gap Module:
Critical Gp:xxxxx xxxx 6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx 3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx

Capacity Module:
Cnflict Vol: xxxx xxxx 425 xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx 583 xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Move Cap.: xxxx xxxx 583 xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
Volume/Cap: xxxx xxxx 0.09 xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx

Level Of Service Module:
Queue: xxxxx xxxx 0.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx 11.8 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move: * * B * * * * * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * *
ApproachDel: 11.8 xxxxxx xxxxxx xxxxxx
ApproachLOS: B * * *

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.885
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 22.6
Optimal Cycle: 111 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	0	0	1	0	0	2	2	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	85	6	10	74	2	130	183	1338	20	27	1659	100								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	85	6	10	74	2	130	183	1338	20	27	1659	100								
Added Vol:	0	0	0	0	0	0	0	20	0	0	49	0								
PasserByVol:	0	0	0	0	0	0	0	16	0	0	13	0								
Initial Fut:	85	6	10	74	2	130	183	1374	20	27	1721	100								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	94	7	11	82	2	144	203	1527	22	30	1912	111								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	94	7	11	82	2	144	203	1527	22	30	1912	111								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	94	7	11	82	2	144	203	1527	22	30	1912	111								

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.93	0.93	0.73	0.88	0.90	0.90	0.90	0.90	0.90
Lanes:	1.73	0.10	0.17	0.97	0.03	2.00	2.00	1.97	0.03	1.00	1.89	0.11
Final Sat.:	3040	181	301	1730	47	2786	3334	3381	49	1718	3222	187

Capacity Analysis Module:

Vol/Sat:	0.03	0.04	0.04	0.05	0.05	0.05	0.06	0.45	0.45	0.02	0.59	0.59
Crit Moves:		****				****	****				****	
Green/Cycle:	0.04	0.04	0.04	0.06	0.06	0.06	0.07	0.71	0.71	0.03	0.67	0.67
Volume/Cap:	0.74	0.88	0.88	0.81	0.81	0.88	0.88	0.63	0.63	0.63	0.88	0.88
Delay/Veh:	65.5	94.4	94.4	82.8	82.8	86.0	77.0	8.1	8.1	73.0	17.9	17.9
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	65.5	94.4	94.4	82.8	82.8	86.0	77.0	8.1	8.1	73.0	17.9	17.9
HCM2kAvg:	3	4	4	5	5	4	6	13	13	2	28	28

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 1.074
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 84.4
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Include					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1

Volume Module:

Base Vol:	284	152	12	128	312	258	199	684	390	94	1038	186								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	284	152	12	128	312	258	199	684	390	94	1038	186								
Added Vol:	49	37	16	0	29	0	0	0	20	14	0	0								
PasserByVol:	32	0	10	0	0	0	0	-14	30	15	-15	0								
Initial Fut:	365	189	38	128	341	258	199	670	440	123	1023	186								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	406	210	42	142	379	287	221	744	489	137	1137	207								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	406	210	42	142	379	287	221	744	489	137	1137	207								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	406	210	42	142	379	287	221	744	489	137	1137	207								

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.81	0.90	0.85	0.85	0.90	0.85	0.85	0.90	0.90	0.81
Lanes:	1.00	2.00	1.00	1.00	1.14	0.86	1.00	1.21	0.79	1.00	2.00	1.00
Final Sat.:	1718	3437	1537	1718	1829	1384	1718	1952	1282	1718	3437	1537

Capacity Analysis Module:

Vol/Sat:	0.24	0.06	0.03	0.08	0.21	0.21	0.13	0.38	0.38	0.08	0.33	0.13
Crit Moves:	****				****		****				****	
Green/Cycle:	0.22	0.18	0.25	0.24	0.19	0.19	0.12	0.35	0.35	0.07	0.31	0.55
Volume/Cap:	1.07	0.35	0.11	0.35	1.07	1.07	1.07	1.08	1.08	1.08	1.07	0.25
Delay/Veh:	106.6	36.6	29.1	32.2	98.2	98.2	127.9	82.6	82.6	148.7	84.6	12.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.6	36.6	29.1	32.2	98.2	98.2	127.9	82.6	82.6	148.7	84.6	12.1
HCM2kAvg:	21	3	1	4	17	17	13	29	29	9	27	3

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 3.2 Worst Case Level Of Service: B[12.7]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0

Volume Module:

Base Vol:	1	36	46	44	189	8	9	2	9	50	11	1								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	1	36	46	44	189	8	9	2	9	50	11	1								
Added Vol:	0	0	0	0	17	0	0	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	1	36	46	44	206	8	9	2	9	50	11	1								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	1	40	51	49	229	9	10	2	10	56	12	1								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Final Vol.:	1	40	51	49	229	9	10	2	10	56	12	1								

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3

Capacity Module:

Cnflict Vol:	238	xxxx	xxxxx	91	xxxx	xxxxx	406	424	233	405	403	66
Potent Cap.:	1341	xxxx	xxxxx	1517	xxxx	xxxxx	559	525	811	560	539	1004
Move Cap.:	1341	xxxx	xxxxx	1517	xxxx	xxxxx	535	507	811	537	521	1004
Volume/Cap:	0.00	xxxx	xxxx	0.03	xxxx	xxxx	0.02	0.00	0.01	0.10	0.02	0.00

Level Of Service Module:

Queue:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.7	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	627	xxxxx	xxxx	538	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	0.4	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	10.9	xxxxx	xxxxx	12.7	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			10.9			12.7		
ApproachLOS:	*			*			B			B		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: A[9.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0

Volume Module:

Base Vol:	0	21	7	121	60	0	0	0	0	8	0	22								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	21	7	121	60	0	0	0	0	8	0	22								
Added Vol:	0	0	0	9	8	0	0	0	0	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	0	21	7	130	68	0	0	0	0	8	0	22								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	0	23	8	144	76	0	0	0	0	9	0	24								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Final Vol.:	0	23	8	144	76	0	0	0	0	9	0	24								

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	31	xxxx	xxxxx	xxxx	xxxx	xxxxx	392	xxxx	27
Potent Cap.:	xxxx	xxxx	xxxxx	1594	xxxx	xxxxx	xxxx	xxxx	xxxxx	616	xxxx	1054
Move Cap.:	xxxx	xxxx	xxxxx	1594	xxxx	xxxxx	xxxx	xxxx	xxxxx	570	xxxx	1054
Volume/Cap:	xxxx	xxxx	xxxx	0.09	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	0.02

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	859	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.4	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	A	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9.4		
ApproachLOS:	*			*			*			A		

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2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A[9.5]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1 0
Volume Module:																
Base Vol:	3	0	0		0	0	0		0	127	1		1	30	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	3	0	0		0	0	0		0	127	1		1	30	0	
Added Vol:	0	0	0		0	0	0		0	9	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	3	0	0		0	0	0		0	136	1		1	30	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	3	0	0		0	0	0		0	151	1		1	33	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	3	0	0		0	0	0		0	151	1		1	33	0	

Critical Gap Module:

Critical Gp:	6.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx			
FollowUpTim:	3.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx			

Capacity Module:

Cnflict Vol:	187	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		152	xxxx	xxxxx			
Potent Cap.:	802	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1429	xxxx	xxxxx			
Move Cap.:	801	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1429	xxxx	xxxxx			
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.00	xxxx	xxxx			

Level Of Service Module:

Queue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Stopped Del:	9.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.5	xxxx	xxxxx			
LOS by Move:	A	*	*	*	*	*	*	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.5	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	9.5				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	A				*				*				*			

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2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 1.5 Worst Case Level Of Service: A[9.3]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0 0
Volume Module:																
Base Vol:	0	0	10		0	0	0		0	133	38		15	45	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	10		0	0	0		0	133	38		15	45	0	
Added Vol:	0	0	15		0	0	0		0	2	7		6	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	25		0	0	0		0	135	45		21	45	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	28		0	0	0		0	150	50		23	50	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	28		0	0	0		0	150	50		23	50	0	

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		4.1	xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		2.2	xxxx	xxxxx			

Capacity Module:

Cnflict Vol:	xxxx	xxxx	175	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		200	xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	868	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1372	xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	868	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		1372	xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	0.03	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx		0.02	xxxx	xxxx			

Level Of Service Module:

Queue:	xxxxx	xxxx	0.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	9.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.7	xxxx	xxxxx			
LOS by Move:	*	*	A	*	*	*	*	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		0.1	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx		7.7	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*		A	*	*			
ApproachDel:	9.3				xxxxxx				xxxxxx				xxxxxx			
ApproachLOS:	A				*				*				*			

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2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 4.4 Worst Case Level Of Service: B[13.2]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0	1	0	0	1!	0	0	1	0	0	1	0	1 0
Volume Module:																
Base Vol:	0	0	55		10	0	5		1	134	8		85	55	18	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	55		10	0	5		1	134	8		85	55	18	
Added Vol:	0	0	17		0	0	0		0	16	1		5	6	0	
PasserByVol:	0	0	31		0	0	0		0	0	0		22	0	0	
Initial Fut:	0	0	103		10	0	5		1	150	9		112	61	18	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	114		11	0	6		1	167	10		124	68	20	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	114		11	0	6		1	167	10		124	68	20	

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	6.2	7.1	xxxx	6.2	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	3.3	3.5	xxxx	3.3	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx			

Capacity Module:

Cnflict Vol:	xxxx	xxxx	172	558	xxxx	78	88	xxxx	xxxxx		177	xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	877	444	xxxx	989	1508	xxxx	xxxxx		1399	xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	877	359	xxxx	989	1508	xxxx	xxxxx		1399	xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	0.13	0.03	xxxx	0.01	0.00	xxxx	xxxx		0.09	xxxx	xxxx			

Level Of Service Module:

Queue:	xxxxx	xxxx	0.4	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx		0.3	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	9.7	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx		7.8	xxxx	xxxxx			
LOS by Move:	*	*	A	*	*	*	A	*	*		A	*	*			
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	456	xxxxx	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	13.2	xxxxx	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx			
Shared LOS:	*	*	*	*	B	*	*	*	*		*	*	*			
ApproachDel:	9.7				13.2		xxxxxx				xxxxxx					
ApproachLOS:	A				B		*				*					

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.442
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 24.1
Optimal Cycle: 45 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1	0	1	0	2	0	1	2	0	0	1	0	1 0
Volume Module:																
Base Vol:	77	272		14		57	556		72		79	18		102		19	9	38
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00
Initial Bse:	77	272		14		57	556		72		79	18		102		19	9	38
Added Vol:	4	79		9		0	58		5		22	4		8		8	2	0
PasserByVol:	0	19		0		0	23		22		23	0		8		0	0	0
Initial Fut:	81	370		23		57	637		99		124	22		118		27	11	38
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90	0.90
PHF Volume:	90	411		26		63	708		110		138	24		131		30	12	42
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0	0
Reduced Vol:	90	411		26		63	708		110		138	24		131		30	12	42
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00
Final Vol.:	90	411		26		63	708		110		138	24		131		30	12	42

Saturation Flow Module:

Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900	1900
Adjustment:	0.90	0.90		0.90		0.90	0.90		0.81		0.90	0.86		0.86		0.93	0.87	0.87
Lanes:	1.00	1.88		0.12		1.00	2.00		1.00		2.00	0.16		0.84		1.00	0.22	0.78
Final Sat.:	1718	3206		199		1718	3437		1537		3432	256		1372		1769	370	1276

Capacity Analysis Module:

Vol/Sat:	0.05	0.13		0.13		0.04	0.21		0.07		0.04	0.10		0.10		0.02	0.03	0.03
Crit Moves:	****						****					****				****		
Green/Cycle:	0.12	0.45		0.45		0.13	0.47		0.47		0.14	0.22		0.22		0.04	0.12	0.12
Volume/Cap:	0.44	0.28		0.28		0.28	0.44		0.15		0.29	0.44		0.44		0.44	0.29	0.29
Delay/Veh:	42.5	17.2		17.2		39.9	18.1		15.4		38.9	34.8		34.8		51.6	41.3	41.3
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00	1.00
AdjDel/Veh:	42.5	17.2		17.2		39.9	18.1		15.4		38.9	34.8		34.8		51.6	41.3	41.3
HCM2kAvg:	3	4		4		2	7		2		2	5		5		2	2	2

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2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.3 Worst Case Level Of Service: B[11.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0 0	0	0	1	1 0	0	0	0	0 1	0	0	0	0 0
Volume Module:																
Base Vol:	0	363		0	0	674		3	0		0	25	0		0	0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	0	363		0	0	674		3	0		0	25	0		0	0
Added Vol:	0	92		0	0	69		6	0		0	5	0		0	0
PasserByVol:	0	19		0	0	28		0	0		0	0	0		0	0
Initial Fut:	0	474		0	0	771		9	0		0	30	0		0	0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	0	527		0	0	857		10	0		0	33	0		0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	0	527		0	0	857		10	0		0	33	0		0	0

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	433	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	576	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	576	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.06	xxxx	xxxx	xxxx

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.2	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	11.6	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.6			xxxxxx		
ApproachLOS:	*			*			B			*		

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.524
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 28.0
Optimal Cycle: 51 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0	1	0	1!	0 0
Volume Module:																
Base Vol:	56	282		38	84	545		70	51		1	18	20		0	30
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	56	282		38	84	545		70	51		1	18	20		0	30
Added Vol:	36	4		0	0	41		11	88		10	8	0		8	0
PasserByVol:	57	-16		0	0	0		0	34		0	48	0		0	0
Initial Fut:	149	270		38	84	586		81	173		11	74	20		8	30
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	166	300		42	93	651		90	192		12	82	22		9	33
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	166	300		42	93	651		90	192		12	82	22		9	33
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Final Vol.:	166	300		42	93	651		90	192		12	82	22		9	33

Saturation Flow Module:

Sat/Lane:	1900	1900		1900	1900	1900		1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.95	0.93		0.93	0.95	0.93		0.93	0.93		0.93	0.93	0.91		0.91	0.91
Lanes:	1.00	1.75		0.25	1.00	1.76		0.24	1.51		0.06	0.43	1.21		0.17	0.62
Final Sat.:	1805	3108		437	1805	3115		431	2648		113	759	2081		287	1076

Capacity Analysis Module:

Vol/Sat:	0.09	0.10		0.10	0.05	0.21		0.21	0.07	0.11		0.11	0.01	0.03		0.03
Crit Moves:	****					****						****				****
Green/Cycle:	0.18	0.37		0.37	0.20	0.40		0.40	0.21	0.21		0.21	0.06	0.06		0.06
Volume/Cap:	0.52	0.26		0.26	0.26	0.52		0.52	0.35	0.52		0.52	0.18	0.52		0.52
Delay/Veh:	39.1	21.8		21.8	34.1	23.2		23.2	34.2	36.2		36.2	45.0	49.8		49.8
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	39.1	21.8		21.8	34.1	23.2		23.2	34.2	36.2		36.2	45.0	49.8		49.8
HCM2kAvg:	5	4		4	3	9		9	4	6		6	1	2		2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.415
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 19.8
Optimal Cycle: 44 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0 2	1	0	0	1 0
Volume Module:																
Base Vol:	308	178		24	13	251		24	8	33	248		6	59		16
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	308	178		24	13	251		24	8	33	248		6	59		16
Added Vol:	37	0		0	0	0		0	0	0	46		0	0		0
PasserByVol:	0	0		0	0	0		0	0	0	0		0	0		0
Initial Fut:	345	178		24	13	251		24	8	33	294		6	59		16
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90
PHF Volume:	383	198		27	14	279		27	9	37	327		7	66		18
Reduct Vol:	0	0		0	0	0		0	0	0	0		0	0		0
Reduced Vol:	383	198		27	14	279		27	9	37	327		7	66		18
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	383	198		27	14	279		27	9	37	327		7	66		18

Saturation Flow Module:

Sat/Lane:	1900	1900		1900	1900	1900		1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.95	0.93		0.93	0.95	0.94		0.94	0.95		1.00	0.75	0.95		0.97	0.97
Lanes:	1.00	1.76		0.24	1.00	1.83		0.17	1.00		1.00	2.00	1.00		0.79	0.21
Final Sat.:	1805	3124		421	1805	3252		311	1805		1900	2842	1805		1447	392

Capacity Analysis Module:

Vol/Sat:	0.21	0.06		0.06	0.01	0.09		0.09	0.00	0.02	0.11		0.00	0.05		0.05
Crit Moves:	****					****			****					****		
Green/Cycle:	0.51	0.64		0.64	0.08	0.21		0.21	0.01	0.10	0.61		0.02	0.11		0.11
Volume/Cap:	0.41	0.10		0.10	0.10	0.41		0.41	0.41	0.19	0.19		0.19	0.41		0.41
Delay/Veh:	15.4	7.0		7.0	42.9	34.8		34.8	61.6	41.6	8.5		50.9	42.9		42.9
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	15.4	7.0		7.0	42.9	34.8		34.8	61.6	41.6	8.5		50.9	42.9		42.9
HCM2kAvg:	8	1		1	1	4		4	1	1	2		0	3		3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.541
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 9.2
Optimal Cycle: 52 Level Of Service: A

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	1	0	0	1 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	5	0		12	53		3	36	44	1050		6	9	1121		98
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	5	0		12	53		3	36	44	1050		6	9	1121		98
Added Vol:	0	0		0	1		0	0	0	7		0	0	8		1
PasserByVol:	0	0		0	0		0	0	0	0		0	0	0		0
Initial Fut:	5	0		12	54		3	36	44	1057		6	9	1129		99
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	6	0		13	60		3	40	49	1174		7	10	1254		110
Reduct Vol:	0	0		0	0		0	0	0	0		0	0	0		0
Reduced Vol:	6	0		13	60		3	40	49	1174		7	10	1254		110
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	6	0		13	60		3	40	49	1174		7	10	1254		110

Saturation Flow Module:

Sat/Lane:	1900	1900		1900	1900	1900		1900	1900		1900	1900	1900		1900	1900
Adjustment:	0.89	1.00		0.89	0.95	0.86		0.86	0.95		0.95	0.95	0.95		0.94	0.94
Lanes:	0.29	0.00		0.71	1.00	0.08		0.92	1.00		1.99	0.01	1.00		1.84	0.16
Final Sat.:	499	0		1197	1805	126		1512	1805		3586	20	1805		3279	288

Capacity Analysis Module:

Vol/Sat:	0.01	0.00		0.01	0.03	0.03		0.03	0.03	0.33		0.33	0.01	0.38		0.38
Crit Moves:				****	****				****					****		
Green/Cycle:	0.02	0.00		0.02	0.06	0.06		0.06	0.05	0.75		0.75	0.01	0.71		0.71
Volume/Cap:	0.54	0.00		0.54	0.54	0.43		0.43	0.54	0.44		0.44	0.54	0.54		0.54
Delay/Veh:	64.5	0.0		64.5	50.8	48.2		48.2	52.8	4.9		4.9	62.0	7.2		7.2
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	64.5	0.0		64.5	50.8	48.2		48.2	52.8	4.9		4.9	62.0	7.2		7.2
HCM2kAvg:	1	0		1	3	2		2	2	7		7	1	10		10

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

```
Cycle (sec):        100                 Critical Vol./Cap. (X):         0.596
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):        20.5
Optimal Cycle:       38                 Level Of Service:                  C
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Ignore           Ignore           Ignore           Ignore
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        0  0  1! 0  0    2  0  0  0  1    0  0  2  0  1    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    0  882    0  537    0  767  362    0  863  233
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    0    0    0  882    0  537    0  767  362    0  863  233
Added Vol:      0    0    0    0    0    0    0    8    0    0    9    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0   17
Initial Fut:    0    0    0  882    0  537    0  775  362    0  872  250
User Adj:    1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00
PHF Adj:     0.90 0.90 0.00 0.90 0.90 0.00 0.90 0.90 0.00 0.90 0.90 0.00
PHF Volume:     0    0    0  980    0    0    0  861    0    0  969    0
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:    0    0    0  980    0    0    0  861    0    0  969    0
PCE Adj:     1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00
MLF Adj:     1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00 1.00 1.00 0.00
Final Vol.:     0    0    0  980    0    0    0  861    0    0  969    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  1.00 1.00 1.00 0.92 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00
Lanes:       0.00 1.00 0.00 2.00 0.00 1.00 0.00 2.00 1.00 0.00 2.00 1.00
Final Sat.:     0 1900    0 3502    0 1900    0 3610 1900    0 3610 1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.28 0.00 0.00 0.00 0.24 0.00 0.00 0.27 0.00
Crit Moves:                 ****                ****                ****
Green/Cycle: 0.00 0.00 0.00 0.47 0.00 0.00 0.00 0.45 0.00 0.00 0.45 0.00
Volume/Cap:  0.00 0.00 0.00 0.60 0.00 0.00 0.00 0.53 0.00 0.00 0.60 0.00
Delay/Veh:    0.0  0.0  0.0 20.1  0.0  0.0  0.0 20.2  0.0  0.0 21.3  0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:   0.0  0.0  0.0 20.1  0.0  0.0  0.0 20.2  0.0  0.0 21.3  0.0
HCM2kAvg:       0    0    0   12    0    0    0   10    0    0   12    0
*******************************************************************************
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

```
Cycle (sec):        100                 Critical Vol./Cap. (X):         0.581
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):        12.0
Optimal Cycle:       37                 Level Of Service:                  B
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase        Permitted        Permitted
Rights:         Include          Include           Ignore           Ignore
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        1  0  1! 0  1    0  0  0  0  0    0  0  2  0  1    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     196    0  276    0    0    0    0 1334  315    0  900 1132
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:  196    0  276    0    0    0    0 1334  315    0  900 1132
Added Vol:      0    0   10    0    0    0    0    8    0    0   23    0
PasserByVol:    0    0   12    0    0    0    0    0    0    0   17    0
Initial Fut:  196    0  298    0    0    0    0 1342  315    0  940 1132
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 0.00
PHF Adj:     0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.00 0.90 0.90 0.00
PHF Volume:   218    0  331    0    0    0    0 1491    0    0 1044    0
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  218    0  331    0    0    0    0 1491    0    0 1044    0
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 0.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00 1.00 1.00 0.00
Final Vol.:   218    0  331    0    0    0    0 1491    0    0 1044    0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  0.89 1.00 0.89 1.00 1.00 1.00 1.00 0.95 1.00 1.00 0.95 1.00
Lanes:       1.40 0.00 1.60 0.00 0.00 0.00 0.00 2.00 1.00 0.00 2.00 1.00
Final Sat.:  2369    0 2719    0    0    0    0 3610 1900    0 3610 1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.00 0.12 0.00 0.00 0.00 0.00 0.41 0.00 0.00 0.29 0.00
Crit Moves:                 ****                ****                ****
Green/Cycle: 0.21 0.00 0.21 0.00 0.00 0.00 0.00 0.71 0.00 0.00 0.71 0.00
Volume/Cap:  0.44 0.00 0.58 0.00 0.00 0.00 0.00 0.58 0.00 0.00 0.41 0.00
Delay/Veh:   34.7  0.0 36.5  0.0  0.0  0.0  0.0  7.5  0.0  0.0  6.0  0.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:  34.7  0.0 36.5  0.0  0.0  0.0  0.0  7.5  0.0  0.0  6.0  0.0
HCM2kAvg:      5    0    7    0    0    0    0   12    0    0    7    0
*******************************************************************************
```


Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj AM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

```
Cycle (sec):        100                 Critical Vol./Cap. (X):         0.940
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):        40.4
Optimal Cycle:      135                 Level Of Service:                  D
*******************************************************************************
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:           Include           Ovl              Ovl              Ovl
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Lanes:        2  0  0  1  0    1  0  1  0  1    2  0  2  0  1    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     292   62   40  215   74  295  386  841  383  104 1445  156
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:  292   62   40  215   74  295  386  841  383  104 1445  156
Added Vol:      0    5    0   17    5   23   18    0    0    0    0   14
PasserByVol:    0    0    0   10    0   35   22  -10    0    0  -19   19
Initial Fut:  292   67   40  242   79  353  426  831  383  104 1426  189
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90 0.90
PHF Volume:   324   74   44  269   88  392  473  923  426  116 1584  210
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  324   74   44  269   88  392  473  923  426  116 1584  210
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Final Vol.:   324   74   44  269   88  392  473  923  426  116 1584  210
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  0.92 0.94 0.94 0.95 1.00 0.85 0.92 0.95 0.85 0.95 0.95 0.85
Lanes:       2.00 0.63 0.37 1.00 1.00 1.00 2.00 2.00 1.00 1.00 2.00 1.00
Final Sat.:  3502 1123  671 1805 1900 1615 3502 3610 1615 1805 3610 1615
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.07 0.07 0.15 0.05 0.24 0.14 0.26 0.26 0.06 0.44 0.13
Crit Moves:            ****      ****                ****                ****
Green/Cycle: 0.11 0.07 0.07 0.16 0.12 0.27 0.14 0.49 0.59 0.12 0.47 0.63
Volume/Cap:  0.87 0.94 0.94 0.94 0.38 0.91 0.94 0.52 0.44 0.52 0.94 0.21
Delay/Veh:   64.0  108 107.7 78.9 41.3 58.5 68.2 17.9 11.5 43.4 36.1  8.2
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:  64.0  108 107.7 78.9 41.3 58.5 68.2 17.9 11.5 43.4 36.1  8.2
HCM2kAvg:      8    7    7   13    3   16   12   10    7    4   28    3
*******************************************************************************
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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     2018 Plus Prj PM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #1 E. 20th Street / Whitman Road
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.055
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):        53.7
Optimal Cycle:      180               Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:            Ovl             Include           Ovl             Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  2  0  1   2  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     263   14   543   35   13    17   31 1560   313  566 1305    79
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  263   14   543   35   13    17   31 1560   313  566 1305    79
Added Vol:      0    0     1    7    0     0    0   18     0    1   20     9
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  263   14   544   42   13    17   31 1578   313  567 1325    88
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:   292   16   604   47   14    19   34 1753   348  630 1472    98
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  292   16   604   47   14    19   34 1753   348  630 1472    98
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   292   16   604   47   14    19   34 1753   348  630 1472    98
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.95 1.00  0.85 0.95 0.92  0.92 0.95 0.95  0.85 0.92 0.94  0.94
Lanes:       1.00 1.00  1.00 1.00 0.43  0.57 1.00 2.00  1.00 2.00 1.88  0.12
Final Sat.:  1805 1900  1615 1805  753   985 1805 3610  1615 3502 3355   223
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.01  0.37 0.03 0.02  0.02 0.02 0.49  0.22 0.18 0.44  0.44
Crit Moves:             **** ****                  ****       ****
Green/Cycle: 0.19 0.18  0.35 0.02 0.02  0.02 0.03 0.46  0.65 0.17 0.60  0.60
Volume/Cap:  0.87 0.04  1.05 1.05 0.87  0.87 0.73 1.05  0.33 1.05 0.73  0.73
Delay/Veh:   59.9 33.6  85.0 200.5  142 142.5 91.2 65.0   8.1 93.5 15.2  15.2
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  59.9 33.6  85.0 200.5  142 142.5 91.2 65.0   8.1 93.5 15.2  15.2
HCM2kAvg:      12    0    28    4    3     3    2   38     5   17   18    18
********************************************************************************
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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     2018 Plus Prj PM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #2 E. 20th Street / SB Sr-99 Ramps
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.036
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):        45.0
Optimal Cycle:      180               Level Of Service:                  D
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:          Include          Include          Ignore           Ignore
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   1  1  0  0  2   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0 1482    3   659    0 1989   149    0 1291   684
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     0 1482    3   659    0 1989   149    0 1291   684
Added Vol:      0    0     0   18    0     0    0   26     0    0   29     0
PasserByVol:    0    0     0   12    0     0    0    0     0    0    0     0
Initial Fut:    0    0     0 1512    3   659    0 2015   149    0 1320   684
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.00 0.90 0.90  0.00
PHF Volume:     0    0     0 1680    3   732    0 2239     0    0 1467     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0 1680    3   732    0 2239     0    0 1467     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
Final Vol.:     0    0     0 1680    3   732    0 2239     0    0 1467     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.85 0.85  0.75 1.00 0.91  1.00 1.00 0.91  1.00
Lanes:       0.00 0.00  0.00 1.99 0.01  2.00 0.00 3.00  1.00 0.00 3.00  1.00
Final Sat.:     0    0     0 3224    6  2842    0 5187  1900    0 5187  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.52 0.52  0.26 0.00 0.43  0.00 0.00 0.28  0.00
Crit Moves:                       ****              ****       ****
Green/Cycle: 0.00 0.00  0.00 0.50 0.50  0.50 0.00 0.42  0.00 0.00 0.42  0.00
Volume/Cap:  0.00 0.00  0.00 1.04 1.04  0.51 0.00 1.04  0.00 0.00 0.68  0.00
Delay/Veh:    0.0  0.0   0.0 57.0 57.0  16.9  0.0 58.4   0.0  0.0 24.6   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 57.0 57.0  16.9  0.0 58.4   0.0  0.0 24.6   0.0
HCM2kAvg:       0    0     0   41   41     8    0   32     0    0   13     0
********************************************************************************
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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     2018 Plus Prj PM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #3 E. 20th Street / NB SR-99 Ramps
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.280
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):       109.9
Optimal Cycle:      180               Level Of Service:                  F
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:            Ovl            Include          Ignore           Ignore
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  1  0  0  1   0  0  0  0  0   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     166    6   800    0    0     0    0 2870   601    0 1809  1250
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  166    6   800    0    0     0    0 2870   601    0 1809  1250
Added Vol:      0    0     0    0    0     0    0   44     0    0   29    21
PasserByVol:    0    0     0    0    0     0    0   12     0    0    0    16
Initial Fut:  166    6   800    0    0     0    0 2926   601    0 1838  1287
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.00 0.90 0.90  0.00
PHF Volume:   184    7   889    0    0     0    0 3251     0    0 2042     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  184    7   889    0    0     0    0 3251     0    0 2042     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
Final Vol.:   184    7   889    0    0     0    0 3251     0    0 2042     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.85 0.85  0.85 1.00 1.00  1.00 1.00 0.91  1.00 1.00 0.91  1.00
Lanes:       1.93 0.07  1.00 0.00 0.00  0.00 0.00 3.00  1.00 0.00 3.00  1.00
Final Sat.:  3117  113  1615    0    0     0    0 5187  1900    0 5187  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06  0.55 0.00 0.00  0.00 0.00 0.63  0.00 0.00 0.39  0.00
Crit Moves:             ****                        ****       ****
Green/Cycle: 0.43 0.43  0.43 0.00 0.00  0.00 0.00 0.49  0.00 0.00 0.49  0.00
Volume/Cap:  0.14 0.14  1.28 0.00 0.00  0.00 0.00 1.28  0.00 0.00 0.80  0.00
Delay/Veh:   17.3 17.3 165.2  0.0  0.0   0.0  0.0  154   0.0  0.0 23.4   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  17.3 17.3 165.2  0.0  0.0   0.0  0.0  154   0.0  0.0 23.4   0.0
HCM2kAvg:       2    2    53    0    0     0    0   64     0    0   19     0
********************************************************************************
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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                     2018 Plus Prj PM Peak Hour Conditions
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #4 E.20th Street / Business Lane
********************************************************************************
Average Delay (sec/veh):      0.4   Worst Case Level Of Service:      D[ 25.8]
********************************************************************************
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Stop Sign        Stop Sign      Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1   0  0  0  0  0   0  0  4  0  1   0  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   117    0    0     0    0 3085   585    0 3059     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0   117    0    0     0    0 3085   585    0 3059     0
Added Vol:      0    0     0    0    0     0    0   18    26    0   50     0
PasserByVol:    0    0     0    0    0     0    0   12     0    0   16     0
Initial Fut:    0    0   117    0    0     0    0 3115   611    0 3125     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:     0    0   130    0    0     0    0 3461   679    0 3472     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Final Vol.:     0    0   130    0    0     0    0 3461   679    0 3472     0
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   865  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   301  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   301  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.43  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx   2.1 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx  25.8 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:   *    *     D     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:    *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      25.8             xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        D                 *                *                *
```

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.650
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 283.9
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1! 0	0	0	1 0	0 2	2 0	1 1	0	1 0	1 1	0
Volume Module:												
Base Vol:	335	47	36	210	48	533	677	2312	213	105	2191	162
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	335	47	36	210	48	533	677	2312	213	105	2191	162
Added Vol:	0	0	0	0	0	0	0	18	0	0	50	0
PasserByVol:	0	0	0	0	0	0	0	12	0	0	16	0
Initial Fut:	335	47	36	210	48	533	677	2342	213	105	2257	162
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	372	52	40	233	53	592	752	2602	237	117	2508	180
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	372	52	40	233	53	592	752	2602	237	117	2508	180
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	372	52	40	233	53	592	752	2602	237	117	2508	180
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.94	0.94	0.73	0.88	0.89	0.89	0.90	0.90	0.90
Lanes:	1.67	0.19	0.14	0.81	0.19	2.00	2.00	1.83	0.17	1.00	1.87	0.13
Final Sat.:	2947	331	254	1456	333	2786	3334	3112	283	1718	3174	228
Capacity Analysis Module:												
Vol/Sat:	0.13	0.16	0.16	0.16	0.16	0.21	0.23	0.84	0.84	0.07	0.79	0.79
Crit Moves:			****			****	****				****	
Green/Cycle:	0.10	0.10	0.10	0.13	0.13	0.13	0.14	0.57	0.57	0.05	0.48	0.48
Volume/Cap:	1.32	1.65	1.65	1.24	1.24	1.65	1.65	1.47	1.47	1.47	1.65	1.65
Delay/Veh:	208.8	353	353.1	184.1	184	348.2	345.3	235	235.2	314.6	321	321.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	208.8	353	353.1	184.1	184	348.2	345.3	235	235.2	314.6	321	321.2
HCM2kAvg:	16	25	25	19	19	25	33	99	99	10	106	106

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 1.766
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 308.4
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	1 1	0	1 0	1 1	0	1 0	2 0	1
Volume Module:												
Base Vol:	758	540	65	202	438	219	367	1313	416	155	1215	95
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	758	540	65	202	438	219	367	1313	416	155	1215	95
Added Vol:	50	36	13	0	32	0	0	0	18	12	0	0
PasserByVol:	29	0	15	0	0	0	0	-15	27	13	-13	0
Initial Fut:	837	576	93	202	470	219	367	1298	461	180	1202	95
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	930	640	103	224	522	243	408	1442	512	200	1336	106
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	930	640	103	224	522	243	408	1442	512	200	1336	106
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	930	640	103	224	522	243	408	1442	512	200	1336	106
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.81	0.90	0.86	0.86	0.90	0.87	0.87	0.90	0.90	0.81
Lanes:	1.00	2.00	1.00	1.00	1.36	0.64	1.00	1.48	0.52	1.00	2.00	1.00
Final Sat.:	1718	3437	1537	1718	2232	1040	1718	2437	866	1718	3437	1537
Capacity Analysis Module:												
Vol/Sat:	0.54	0.19	0.07	0.13	0.23	0.23	0.24	0.59	0.59	0.12	0.39	0.07
Crit Moves:	****				****			****	****			
Green/Cycle:	0.31	0.26	0.32	0.18	0.13	0.13	0.15	0.34	0.34	0.07	0.25	0.43
Volume/Cap:	1.77	0.72	0.21	0.72	1.77	1.77	1.56	1.77	1.77	1.77	1.56	0.16
Delay/Veh:	387.0	36.8	24.7	46.6	397	397.4	312.7	382	381.6	424.8	296	17.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	387.0	36.8	24.7	46.6	397	397.4	312.7	382	381.6	424.8	296	17.6
HCM2kAvg:	82	10	2	8	33	33	34	82	82	19	51	2

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 5.5 Worst Case Level Of Service: E[41.0]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	8	114	65	148	429	8	2	8	5	75	5	1
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	8	114	65	148	429	8	2	8	5	75	5	1
Added Vol:	0	0	0	0	26	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	114	65	148	455	8	2	8	5	75	5	1
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	9	127	72	164	506	9	2	9	6	83	6	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	9	127	72	164	506	9	2	9	6	83	6	1
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	514	xxxx	xxxxx	199	xxxx	xxxxx	1023	1056	510	1027	1024	163
Potent Cap.:	1061	xxxx	xxxxx	1386	xxxx	xxxxx	216	227	567	215	237	887
Move Cap.:	1061	xxxx	xxxxx	1386	xxxx	xxxxx	189	196	567	184	205	887
Volume/Cap:	0.01	xxxx	xxxx	0.12	xxxx	xxxx	0.01	0.05	0.01	0.45	0.03	0.00
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.4	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	249	xxxxx	xxxx	187	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.2	xxxxx	xxxxx	2.3	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	20.5	xxxxx	xxxxx	41.0	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	E	*
ApproachDel:	xxxxxx			xxxxxx			20.5			41.0		
ApproachLOS:	*			*			C			E		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: B[12.3]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	0 1	0	0 1	0 0	0	0 0	0 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	0	63	15	286	202	0	0	0	0	17	0	71
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	63	15	286	202	0	0	0	0	17	0	71
Added Vol:	0	0	0	13	13	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	63	15	299	215	0	0	0	0	17	0	71
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	70	17	332	239	0	0	0	0	19	0	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	70	17	332	239	0	0	0	0	19	0	79
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	87	xxxx	xxxxx	xxxx	xxxx	xxxxx	982	xxxx	78
Potent Cap.:	xxxx	xxxx	xxxxx	1522	xxxx	xxxxx	xxxx	xxxx	xxxxx	279	xxxx	988
Move Cap.:	xxxx	xxxx	xxxxx	1522	xxxx	xxxxx	xxxx	xxxx	xxxxx	221	xxxx	988
Volume/Cap:	xxxx	xxxx	xxxx	0.22	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	0.08
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	0.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	592	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	0.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	12.3	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			12.3		
ApproachLOS:	*			*			*			B		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[10.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	7	0	10		0	0	0		0	296	5		3	88	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	7	0	10		0	0	0		0	296	5		3	88	0	
Added Vol:	0	0	0		0	0	0		0	13	0		0	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	7	0	10		0	0	0		0	309	5		3	88	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	8	0	11		0	0	0		0	343	6		3	98	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	8	0	11		0	0	0		0	343	6		3	98	0	
Critical Gap Module:																
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	451	xxxx	346	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	349	xxxx	xxxxx				
Potent Cap.:	566	xxxx	697	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1210	xxxx	xxxxx				
Move Cap.:	565	xxxx	697	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1210	xxxx	xxxxx				
Volume/Cap:	0.01	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	636	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx				
Shrd StpDel:	xxxxx	10.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx				
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	10.8			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 2.2 Worst Case Level Of Service: B[12.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Volume Module:																
Base Vol:	0	0	67		0	0	0		0	349	117		60	116	0	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	67		0	0	0		0	349	117		60	116	0	
Added Vol:	0	0	18		0	0	0		0	2	11		9	0	0	
PasserByVol:	0	0	0		0	0	0		0	0	0		0	0	0	
Initial Fut:	0	0	85		0	0	0		0	351	128		69	116	0	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	94		0	0	0		0	390	142		77	129	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	94		0	0	0		0	390	142		77	129	0	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	461	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	532	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	600	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1035	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	600	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1035	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	0.16	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	0.6	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	12.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx				
LOS by Move:	*	*	B	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.8	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	12.1			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 43.5 Worst Case Level Of Service: F[446.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0	1	0	0	1!	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	0	0	164		102	2	3		1	417	8		156	173	68	
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
Initial Bse:	0	0	164		102	2	3		1	417	8		156	173	68	
Added Vol:	0	0	21		0	0	0		0	19	1		7	9	0	
PasserByVol:	0	0	38		0	0	0		0	0	0		31	0	0	
Initial Fut:	0	0	223		102	2	3		1	436	9		194	182	68	
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	
PHF Volume:	0	0	248		113	2	3		1	484	10		216	202	76	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	0	0	248		113	2	3		1	484	10		216	202	76	
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.2		7.1	6.5	6.2		4.1	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	xxxxx	xxxx	3.3		3.5	4.0	3.3		2.2	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	489		1287	1168	240		278	xxxx	xxxxx		494	xxxx	xxxxx	
Potent Cap.:	xxxx	xxxx	583		143	195	804		1285	xxxx	xxxxx		1069	xxxx	xxxxx	
Move Cap.:	xxxx	xxxx	583		69	156	804		1285	xxxx	xxxxx		1069	xxxx	xxxxx	
Volume/Cap:	xxxx	xxxx	0.43		1.64	0.01	0.00		0.00	xxxx	xxxx		0.20	xxxx	xxxx	
Level Of Service Module:																
Queue:	xxxxx	xxxx	2.1		xxxxx	xxxx	xxxxx		0.0	xxxx	xxxxx		0.8	xxxx	xxxxx	
Stopped Del:	xxxxx	xxxx	15.7		xxxxx	xxxx	xxxxx		7.8	xxxx	xxxxx		9.2	xxxx	xxxxx	
LOS by Move:	*	*	C		*	*	*		A	*	*		A	*	*	
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx		72	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	10.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	446	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*				
ApproachDel:	15.7			446.4			xxxxxx			xxxxxx						
ApproachLOS:	C			F			*			*						

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.629
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 29.1
Optimal Cycle: 60 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected					Protected					Protected					
Rights:	Include					Include					Include					
Min. Green:	0	0	0			0	0	0			0	0	0			
Lanes:	1	0	1	1	0	1	0	2	0	1	2	0	0	1	0	0
Volume Module:																
Base Vol:	133	729		43		55	647		249		469		13	201		9
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
Initial Bse:	133	729		43		55	647		249		469		13	201		9
Added Vol:	5	73		8		0	54		8		26		4	9		7
PasserByVol:	0	14		0		0	9		31		30		0	8		0
Initial Fut:	138	816		51		55	710		288		525		17	218		16
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90		0.90	0.90		0.90
PHF Volume:	153	907		57		61	789		320		583		19	242		18
Reduct Vol:	0	0		0		0	0		0		0		0	0		0
Reduced Vol:	153	907		57		61	789		320		583		19	242		18
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
Final Vol.:	153	907		57		61	789		320		583		19	242		18
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900		1900	1900		1900
Adjustment:	0.90	0.90		0.90		0.90	0.90		0.81		0.90		0.84	0.84		0.93
Lanes:	1.00	1.88		0.12		1.00	2.00		1.00		2.00		0.07	0.93		1.00
Final Sat.:	1718	3205		200		1718	3437		1537		3432		116	1487		1769
Capacity Analysis Module:																
Vol/Sat:	0.09	0.28		0.28		0.04	0.23		0.21		0.17		0.16	0.16		0.01
Crit Moves:	****						****				****					
Green/Cycle:	0.14	0.45		0.45		0.06	0.37		0.37		0.27		0.31	0.31		0.02
Volume/Cap:	0.63	0.63		0.63		0.63	0.63		0.57		0.63		0.52	0.52		0.52
Delay/Veh:	45.6	21.9		21.9		58.5	27.2		26.8		33.4		29.1	29.1		62.0
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00	1.00		1.00
AdjDel/Veh:	45.6	21.9		21.9		58.5	27.2		26.8		33.4		29.1	29.1		62.0
HCM2kAvg:	6	12		12		3	11		8		9		7	7		1

Approach:	East Bound				West Bound			
Movement:	L	-	T	-	R			
Control:	Protected							
Rights:	Include							
Min. Green:	0	0	0					
Lanes:	1	0	0	1	0			
Volume Module:								
Base Vol:	9	15	40					
Growth Adj:	1.00	1.00	1.00					
Initial Bse:	9	15	40					
Added Vol:	7	4	0					
PasserByVol:	0	0	0					
Initial Fut:	16	19	40					
User Adj:	1.00	1.00	1.00					
PHF Adj:	0.90	0.90	0.90					
PHF Volume:	18	21	44					
Reduct Vol:	0	0	0					
Reduced Vol:	18	21	44					
PCE Adj:	1.00	1.00	1.00					
MLF Adj:	1.00	1.00	1.00					
Final Vol.:	18	21	44					
Saturation Flow Module:								
Sat/Lane:	1900	1900	1900					
Adjustment:	0.93	0.88	0.88					
Lanes:	1.00	0.32	0.68					
Final Sat.:	1769	538	1134					
Capacity Analysis Module:								
Vol/Sat:	0.01	0.04	0.04					
Crit Moves:		****						
Green/Cycle:	0.02	0.06	0.06					
Volume/Cap:	0.52	0.63	0.63					
Delay/Veh:	62.0	57.4	57.4					
User DelAdj:	1.00	1.00	1.00					
AdjDel/Veh:	62.0	57.4	57.4					
HCM2kAvg:	1	3	3					

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[13.6]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0 0	0	0	1	1 0	0	0	0	0 1	0	0	0	0 0
Volume Module:																
Base Vol:	0	905		0	0	853		4	0		0	69	0		0	0
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	0	905		0	0	853		4	0		0	69	0		0	0
Added Vol:	0	87		0	0	63		8	0		0	6	0		0	0
PasserByVol:	0	14		0	0	17		0	0		0	0	0		0	0
Initial Fut:	0	1006		0	0	933		12	0		0	75	0		0	0
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	0	1118		0	0	1037		13	0		0	83	0		0	0
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Final Vol.:	0	1118		0	0	1037		13	0		0	83	0		0	0

Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 6.9 xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 3.3 xxxxx xxxx xxxxx

Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 525 xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 502 xxxx xxxx xxxxx
Move Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx 502 xxxx xxxx xxxxx
Volume/Cap: xxxx xxxx xxxx xxxx xxxx xxxx xxxx xxxx 0.17 xxxx xxxx xxxx

Level Of Service Module:
Queue: xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 0.6 xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx 13.6 xxxxx xxxx xxxxx
LOS by Move: * * * * * * * * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * * * * * * * * * * * *
ApproachDel: xxxxxx xxxxxx 13.6 xxxxxx
ApproachLOS: * * B *

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.670
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 29.4
Optimal Cycle: 65 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0	1	0	1!	0 0
Volume Module:																
Base Vol:	38	668		60	92	800		30	164		0	23	45		0	73
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Initial Bse:	38	668		60	92	800		30	164		0	23	45		0	73
Added Vol:	37	5		0	0	39		11	81		9	9	0		8	0
PasserByVol:	60	-18		0	0	0		0	32		0	43	0		0	0
Initial Fut:	135	655		60	92	839		41	277		9	75	45		8	73
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90	0.90		0.90	0.90
PHF Volume:	150	728		67	102	932		46	308		10	83	50		9	81
Reduct Vol:	0	0		0	0	0		0	0		0	0	0		0	0
Reduced Vol:	150	728		67	102	932		46	308		10	83	50		9	81
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00
Final Vol.:	150	728		67	102	932		46	308		10	83	50		9	81

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.94	0.94	0.93	0.93	0.93	0.90	0.90	0.90
Lanes:	1.00	1.83	0.17	1.00	1.91	0.09	1.62	0.04	0.34	1.22	0.08	0.70
Final Sat.:	1805	3264	299	1805	3418	167	2877	72	598	2074	132	1201

Capacity Analysis Module:

Vol/Sat:	0.08	0.22	0.22	0.06	0.27	0.27	0.11	0.14	0.14	0.02	0.07	0.07
Crit Moves:	****				****				****		****	
Green/Cycle:	0.12	0.42	0.42	0.11	0.41	0.41	0.21	0.21	0.21	0.10	0.10	0.10
Volume/Cap:	0.67	0.53	0.53	0.53	0.67	0.67	0.51	0.67	0.67	0.24	0.67	0.67
Delay/Veh:	49.5	21.7	21.7	44.9	25.4	25.4	35.7	39.4	39.4	41.6	51.5	51.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.5	21.7	21.7	44.9	25.4	25.4	35.7	39.4	39.4	41.6	51.5	51.5
HCM2kAvg:	6	9	9	4	13	13	6	8	8	1	5	5

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.598
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 19.9
Optimal Cycle: 57 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1 0	1	0	1	1 0	1	0	1	0 2	1	0	0	1 0
Volume Module:																
Base Vol:	487	377		14	26	265		26	53	97	618		17	61		29
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	487	377		14	26	265		26	53	97	618		17	61		29
Added Vol:	39	0		0	0	0		0	0	0	45		0	0		0
PasserByVol:	0	0		0	0	0		0	0	0	0		0	0		0
Initial Fut:	526	377		14	26	265		26	53	97	663		17	61		29
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90		0.90
PHF Volume:	584	419		16	29	294		29	59	108	737		19	68		32
Reduct Vol:	0	0		0	0	0		0	0	0	0		0	0		0
Reduced Vol:	584	419		16	29	294		29	59	108	737		19	68		32
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	584	419		16	29	294		29	59	108	737		19	68		32

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.95	0.95	0.94	0.94	0.95	1.00	0.75	0.95	0.95	0.95
Lanes:	1.00	1.93	0.07	1.00	1.82	0.18	1.00	1.00	2.00	1.00	0.68	0.32
Final Sat.:	1805	3463	129	1805	3245	318	1805	1900	2842	1805	1226	583

Capacity Analysis Module:

Vol/Sat:	0.32	0.12	0.12	0.02	0.09	0.09	0.03	0.06	0.26	0.01	0.06	0.06
Crit Moves:	****				****		****				****	
Green/Cycle:	0.54	0.61	0.61	0.08	0.15	0.15	0.05	0.12	0.67	0.02	0.09	0.09
Volume/Cap:	0.60	0.20	0.20	0.20	0.60	0.60	0.60	0.46	0.39	0.46	0.60	0.60
Delay/Veh:	16.6	8.6	8.6	43.6	41.4	41.4	55.9	42.1	7.7	56.1	49.4	49.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	16.6	8.6	8.6	43.6	41.4	41.4	55.9	42.1	7.7	56.1	49.4	49.4
HCM2kAvg:	13	3	3	1	6	6	3	4	5	1	4	4

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.851
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 28.9
Optimal Cycle: 100 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	0	1!	0 0	1	0	0	1 0	1	0	1	1 0	1	0	1	1 0
Volume Module:																
Base Vol:	5	10		15	343		2	101	105	1309		20	14	1076		242
Growth Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	5	10		15	343		2	101	105	1309		20	14	1076		242
Added Vol:	0	0		0	1		0	0	0	6		0	0	7		1
PasserByVol:	0	0		0	0		0	0	0	0		0	0	0		0
Initial Fut:	5	10		15	344		2	101	105	1315		20	14	1083		243
User Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	6	11		17	382		2	112	117	1461		22	16	1203		270
Reduct Vol:	0	0		0	0		0	0	0	0		0	0	0		0
Reduced Vol:	6	11		17	382		2	112	117	1461		22	16	1203		270
PCE Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	6	11		17	382		2	112	117	1461		22	16	1203		270

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.95	0.85	0.85	0.95	0.95	0.95	0.95	0.92	0.92
Lanes:	0.17	0.33	0.50	1.00	0.02	0.98	1.00	1.97	0.03	1.00	1.63	0.37
Final Sat.:	293	586	879	1805	31	1589	1805	3549	54	1805	2869	644

Capacity Analysis Module:

Vol/Sat:	0.02	0.02	0.02	0.21	0.07	0.07	0.06	0.41	0.41	0.01	0.42	0.42
Crit Moves:	****			****			****				****	
Green/Cycle:	0.02	0.02	0.02	0.25	0.25	0.25	0.08	0.56	0.56	0.01	0.49	0.49
Volume/Cap:	0.85	0.85	0.85	0.85	0.28	0.28	0.85	0.74	0.74	0.74	0.85	0.85
Delay/Veh:	135.7	136	135.7	50.1	30.7	30.7	82.5	18.2	18.2	133.2	26.4	26.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	135.7	136	135.7	50.1	30.7	30.7	82.5	18.2	18.2	133.2	26.4	26.4
HCM2kAvg:	3	3	3	15	3	3	6	18	18	2	22	22

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

****

Cycle (sec): 100 Critical Vol./Cap. (X): 0.935
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 30.8
Optimal Cycle: 123 Level Of Service: C

****

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ignore					Ignore					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	1!	0	0	2	0	0	0	1	0	0	2	0	1	0	0	2	0	1
Volume Module:																				
Base Vol:	0	0	0	1175	0	400	0	1577	358	0	1249	286								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	0	0	1175	0	400	0	1577	358	0	1249	286								
Added Vol:	0	0	0	0	0	0	0	7	0	0	8	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	13								
Initial Fut:	0	0	0	1175	0	400	0	1584	358	0	1257	299								
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00								
PHF Adj:	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00								
PHF Volume:	0	0	0	1306	0	0	0	1760	0	0	1397	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	0	0	0	1306	0	0	0	1760	0	0	1397	0								
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00								
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00								
Final Vol.:	0	0	0	1306	0	0	0	1760	0	0	1397	0								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	1.00	1.00	1.00	0.92	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00								
Lanes:	0.00	1.00	0.00	2.00	0.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00								
Final Sat.:	0	1900	0	3502	0	1900	0	3610	1900	0	3610	1900								
Capacity Analysis Module:																				
Vol/Sat:	0.00	0.00	0.00	0.37	0.00	0.00	0.00	0.49	0.00	0.00	0.39	0.00								
Crit Moves:				****				****												
Green/Cycle:	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.52	0.00	0.00	0.52	0.00								
Volume/Cap:	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.94	0.00	0.00	0.74	0.00								
Delay/Veh:	0.0	0.0	0.0	40.7	0.0	0.0	0.0	31.7	0.0	0.0	20.3	0.0								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	0.0	0.0	0.0	40.7	0.0	0.0	0.0	31.7	0.0	0.0	20.3	0.0								
HCM2kAvg:	0	0	0	25	0	0	0	30	0	0	18	0								

****

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

****

Cycle (sec): 100 Critical Vol./Cap. (X): 0.928
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 20.2
Optimal Cycle: 118 Level Of Service: C

****

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Permitted					Permitted				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	1
Volume Module:																				
Base Vol:	362	0	346	0	0	0	0	2245	507	0	1173	1089								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	362	0	346	0	0	0	0	2245	507	0	1173	1089								
Added Vol:	0	0	13	0	0	0	0	7	0	0	24	0								
PasserByVol:	0	0	15	0	0	0	0	0	0	0	13	0								
Initial Fut:	362	0	374	0	0	0	0	2252	507	0	1210	1089								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00								
PHF Volume:	402	0	416	0	0	0	0	2502	0	0	1344	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	402	0	416	0	0	0	0	2502	0	0	1344	0								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00								
Final Vol.:	402	0	416	0	0	0	0	2502	0	0	1344	0								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00								
Lanes:	1.49	0.00	1.51	0.00	0.00	0.00	0.00	2.00	1.00	0.00	2.00	1.00								
Final Sat.:	2556	0	2584	0	0	0	0	3610	1900	0	3610	1900								
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.69	0.00	0.00	0.37	0.00								
Crit Moves:			****					****												
Green/Cycle:	0.17	0.00	0.17	0.00	0.00	0.00	0.00	0.75	0.00	0.00	0.75	0.00								
Volume/Cap:	0.91	0.00	0.93	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.50	0.00								
Delay/Veh:	53.4	0.0	56.4	0.0	0.0	0.0	0.0	16.8	0.0	0.0	5.3	0.0								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	53.4	0.0	56.4	0.0	0.0	0.0	0.0	16.8	0.0	0.0	5.3	0.0								
HCM2kAvg:	12	0	12	0	0	0	0	37	0	0	9	0								

****

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #19 Skyway / Notre Dame Boulevard

****

Cycle (sec): 100 Critical Vol./Cap. (X): 1.160
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 109.3
Optimal Cycle: 180 Level Of Service: F

****

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	0	1	0	1	0	1	0	1	2	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	409	199	76	329	95	608	602	1713	276	104	1231	213								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	409	199	76	329	95	608	602	1713	276	104	1231	213								
Added Vol:	0	4	0	17	4	24	21	0	0	0	0	15								
PasserByVol:	0	0	0	14	0	26	30	-15	0	0	-12	12								
Initial Fut:	409	203	76	360	99	658	653	1698	276	104	1219	240								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	454	226	84	400	110	731	726	1887	307	116	1354	267								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	454	226	84	400	110	731	726	1887	307	116	1354	267								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	454	226	84	400	110	731	726	1887	307	116	1354	267								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.92	0.96	0.96	0.95	1.00	0.85	0.92	0.95	0.85	0.95	0.95	0.85								
Lanes:	2.00	0.73	0.27	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00								
Final Sat.:	3502	1326	496	1805	1900	1615	3502	3610	1615	1805	3610	1615								
Capacity Analysis Module:																				
Vol/Sat:	0.13	0.17	0.17	0.22	0.06	0.45	0.21	0.52	0.19	0.06	0.38	0.17								
Crit Moves:		****		****			****				****									
Green/Cycle:	0.12	0.15	0.15	0.19	0.22	0.40	0.18	0.45	0.56	0.05	0.32	0.51								
Volume/Cap:	1.11	1.16	1.16	1.16	0.26	1.13	1.16	1.17	0.34	1.17	1.16	0.32								
Delay/Veh:	122.3	148	147.9	139.7	32.5	108.0	129.8	110	11.9	190.0	116	14.3								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	122.3	148	147.9	139.7	32.5	108.0	129.8	110	11.9	190.0	116	14.3								
HCM2kAvg:	14	18	18	23	3	37	22	48	5	9	36	5								

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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2018 Plus Prj SAT Peak Hour Conditions
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #1 E. 20th Street / Whitman Road
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.166
Loss Time (sec):     16 (Y+R =  4 sec) Average Delay (sec/veh):       83.4
Optimal Cycle:      180               Level Of Service:                  F
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Protected
Rights:            Ovl            Include            Ovl            Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  0  1  0  1   1  0  0  1  0   1  0  2  0  1   2  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     267   21   692  120   30    57   52 1358   332  752 1166   127
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  267   21   692  120   30    57   52 1358   332  752 1166   127
Added Vol:      0    0     1    6    0     0    0   23     0    1   27     8
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  267   21   693  126   30    57   52 1381   332  753 1193   135
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:   297   23   770  140   33    63   58 1534   369  837 1326   150
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  297   23   770  140   33    63   58 1534   369  837 1326   150
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Final Vol.:   297   23   770  140   33    63   58 1534   369  837 1326   150
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.95 1.00  0.85 0.95 0.90  0.90 0.95 0.95  0.85 0.92 0.94  0.94
Lanes:       1.00 1.00  1.00 1.00 0.34  0.66 1.00 2.00  1.00 2.00 1.80  0.20
Final Sat.:  1805 1900  1615 1805  591  1123 1805 3610  1615 3502 3194   361
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.01  0.48 0.08 0.06  0.06 0.03 0.43  0.23 0.24 0.41  0.41
Crit Moves:             **** ****                  ****      ****
Green/Cycle: 0.20 0.20  0.41 0.07 0.07  0.07 0.04 0.36  0.57 0.20 0.53  0.53
Volume/Cap:  0.82 0.06  1.17 1.17 0.82  0.82 0.78 1.17  0.40 1.17 0.78  0.78
Delay/Veh:   51.5 32.1 120.0 180.2 79.7  79.7 88.7  115  12.5 129.2 21.2  21.2
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  51.5 32.1 120.0 180.2 79.7  79.7 88.7  115  12.5 129.2 21.2  21.2
HCM2kAvg:      12    1    40   10    5     5    4   40     6   25   20    20
********************************************************************************
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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2018 Plus Prj SAT Peak Hour Conditions
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #2 E. 20th Street / SB Sr-99 Ramps
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        0.876
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):       25.0
Optimal Cycle:       89               Level Of Service:                  C
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include          Include          Ignore           Ignore
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        0  0  0  0  0   1  1  0  0  2   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0 1154    0   593    0 2031   139    0 1452   546
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     0 1154    0   593    0 2031   139    0 1452   546
Added Vol:      0    0     0   18    0     0    0   30     0    0   36     0
PasserByVol:    0    0     0   15    0     0    0    0     0    0    0     0
Initial Fut:    0    0     0 1187    0   593    0 2061   139    0 1488   546
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.00 0.90 0.90  0.00
PHF Volume:     0    0     0 1319    0   659    0 2290     0    0 1653     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0 1319    0   659    0 2290     0    0 1653     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
Final Vol.:     0    0     0 1319    0   659    0 2290     0    0 1653     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  1.00 1.00  1.00 0.95 1.00  0.75 1.00 0.91  1.00 1.00 0.91  1.00
Lanes:       0.00 0.00  0.00 2.00 0.00  2.00 0.00 3.00  1.00 0.00 3.00  1.00
Final Sat.:     0    0     0 3618    0  2842    0 5187  1900    0 5187  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.36 0.00  0.23 0.00 0.44  0.00 0.00 0.32  0.00
Crit Moves:                  ****                  ****      ****
Green/Cycle: 0.00 0.00  0.00 0.42 0.00  0.42 0.00 0.50  0.00 0.00 0.50  0.00
Volume/Cap:  0.00 0.00  0.00 0.88 0.00  0.56 0.00 0.88  0.00 0.00 0.63  0.00
Delay/Veh:    0.0  0.0   0.0 32.9  0.0  22.8  0.0 25.7   0.0  0.0 18.6   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   0.0  0.0   0.0 32.9  0.0  22.8  0.0 25.7   0.0  0.0 18.6   0.0
HCM2kAvg:       0    0     0   23    0     8    0   24     0    0   13     0
********************************************************************************
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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2018 Plus Prj SAT Peak Hour Conditions
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Operations Method (Future Volume Alternative)
********************************************************************************
Intersection #3 E. 20th Street / NB SR-99 Ramps
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap. (X):        1.147
Loss Time (sec):      8 (Y+R =  4 sec) Average Delay (sec/veh):       70.0
Optimal Cycle:      180               Level Of Service:                  E
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:            Ovl            Include          Ignore           Ignore
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Lanes:        1  1  0  0  1   0  0  0  0  0   0  0  3  0  1   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     106    0   677    0    0     0    0 2687   498    0 1892  1058
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  106    0   677    0    0     0    0 2687   498    0 1892  1058
Added Vol:      0    0     0    0    0     0    0   48     0    0   36    23
PasserByVol:    0    0     0    0    0     0    0   15     0    0    0    17
Initial Fut:  106    0   677    0    0     0    0 2750   498    0 1928  1098
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.00 0.90 0.90  0.00
PHF Volume:   118    0   752    0    0     0    0 3056     0    0 2142     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  118    0   752    0    0     0    0 3056     0    0 2142     0
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  0.00 1.00 1.00  0.00
Final Vol.:   118    0   752    0    0     0    0 3056     0    0 2142     0
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.95 1.00  0.85 1.00 1.00  1.00 1.00 0.91  1.00 1.00 0.91  1.00
Lanes:       2.00 0.00  1.00 0.00 0.00  0.00 0.00 3.00  1.00 0.00 3.00  1.00
Final Sat.:  3618    0  1615    0    0     0    0 5187  1900    0 5187  1900
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.00  0.47 0.00 0.00  0.00 0.00 0.59  0.00 0.00 0.41  0.00
Crit Moves:             ****                       ****      ****
Green/Cycle: 0.41 0.00  0.41 0.00 0.00  0.00 0.00 0.51  0.00 0.00 0.51  0.00
Volume/Cap:  0.08 0.00  1.15 0.00 0.00  0.00 0.00 1.15  0.00 0.00 0.80  0.00
Delay/Veh:   18.2  0.0 112.7  0.0  0.0   0.0  0.0 95.2   0.0  0.0 22.0   0.0
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:  18.2  0.0 112.7  0.0  0.0   0.0  0.0 95.2   0.0  0.0 22.0   0.0
HCM2kAvg:       1    0    38    0    0     0    0   50     0    0   20     0
********************************************************************************
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--------------------------------------------------------------------------------
                Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
                    2018 Plus Prj SAT Peak Hour Conditions
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
            2000 HCM Unsignalized Method (Future Volume Alternative)
********************************************************************************
Intersection #4 E.20th Street / Business Lane
********************************************************************************
Average Delay (sec/veh):      0.6   Worst Case Level Of Service:       C[ 24.3]
********************************************************************************
Approach:     North Bound      South Bound       East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Stop Sign        Stop Sign       Uncontrolled     Uncontrolled
Rights:           Include          Include          Include          Include
Lanes:        0  0  0  0  1   0  0  0  0  0   0  0  4  0  1   0  0  2  0  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0   159    0    0     0    0 2653   711    0 2950     0
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0   159    0    0     0    0 2653   711    0 2950     0
Added Vol:      0    0     0    0    0     0    0   26    22    0   60     0
PasserByVol:    0    0     0    0    0     0    0   15     0    0   17     0
Initial Fut:    0    0   159    0    0     0    0 2694   733    0 3027     0
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90 0.90 0.90  0.90
PHF Volume:     0    0   177    0    0     0    0 2993   814    0 3363     0
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Final Vol.:     0    0   177    0    0     0    0 2993   814    0 3363     0
Critical Gap Module:
Critical Gp:xxxxx xxxx   6.9 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
FollowUpTim:xxxxx xxxx   3.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx   748  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Potent Cap.: xxxx xxxx   359  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Move Cap.:   xxxx xxxx   359  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Volume/Cap:  xxxx xxxx  0.49  xxxx xxxx  xxxx  xxxx xxxx  xxxx  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
Queue:      xxxxx xxxx   2.6 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Stopped Del:xxxxx xxxx  24.3 xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     C     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT   LT - LTR - RT   LT - LTR - RT   LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd StpDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    *     *
ApproachDel:      24.3           xxxxxx           xxxxxx           xxxxxx
ApproachLOS:        C                *                *                *
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.669
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 272.9
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Include					Include					Include				
Min. Green:	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
Lanes:	1	0	1!	0	0	0	1	0	0	2	2	0	1	1	0	1	0	1	1	0

Volume Module:

Base Vol:	348	79	51	222	67	549	652	1994	166	129	2053	230
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	348	79	51	222	67	549	652	1994	166	129	2053	230
Added Vol:	0	0	0	0	0	0	0	26	0	0	60	0
PasserByVol:	0	0	0	0	0	0	0	15	0	0	17	0
Initial Fut:	348	79	51	222	67	549	652	2035	166	129	2130	230
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	387	88	57	247	74	610	724	2261	184	143	2367	256
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	387	88	57	247	74	610	724	2261	184	143	2367	256
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	387	88	57	247	74	610	724	2261	184	143	2367	256

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.94	0.94	0.73	0.88	0.89	0.89	0.90	0.89	0.89
Lanes:	1.57	0.26	0.17	0.77	0.23	2.00	2.00	1.85	0.15	1.00	1.81	0.19
Final Sat.:	2780	459	297	1377	416	2786	3334	3143	256	1718	3055	330

Capacity Analysis Module:

Vol/Sat:	0.14	0.19	0.19	0.18	0.18	0.22	0.22	0.72	0.72	0.08	0.77	0.77
Crit Moves:		****				****	****				****	
Green/Cycle:	0.11	0.11	0.11	0.13	0.13	0.13	0.13	0.53	0.53	0.06	0.46	0.46
Volume/Cap:	1.22	1.67	1.67	1.36	1.36	1.67	1.67	1.35	1.35	1.35	1.67	1.67
Delay/Veh:	160.5	359	358.8	232.5	232	356.3	354.6	185	185.1	254.5	331	330.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	160.5	359	358.8	232.5	232	356.3	354.6	185	185.1	254.5	331	330.7
HCM2kAvg:	16	29	29	23	23	26	32	77	77	12	105	105

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 1.837
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 353.4
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Include					Ovl				
Min. Green:	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
Lanes:	1	0	2	0	1	1	0	1	1	0	1	0	1	1	0	1	0	2	0	1

Volume Module:

Base Vol:	813	468	87	147	433	310	339	1227	351	145	1466	152
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	813	468	87	147	433	310	339	1227	351	145	1466	152
Added Vol:	60	45	20	0	37	0	0	0	26	18	0	0
PasserByVol:	36	0	14	0	0	0	0	-15	30	18	-18	0
Initial Fut:	909	513	121	147	470	310	339	1212	407	181	1448	152
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	1010	570	134	163	522	344	377	1347	452	201	1609	169
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1010	570	134	163	522	344	377	1347	452	201	1609	169
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	1010	570	134	163	522	344	377	1347	452	201	1609	169

Saturation Flow Module:

Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.90	0.81	0.90	0.85	0.85	0.90	0.87	0.87	0.90	0.90	0.81
Lanes:	1.00	2.00	1.00	1.00	1.21	0.79	1.00	1.50	0.50	1.00	2.00	1.00
Final Sat.:	1718	3437	1537	1718	1947	1284	1718	2475	831	1718	3437	1537

Capacity Analysis Module:

Vol/Sat:	0.59	0.17	0.09	0.10	0.27	0.27	0.22	0.54	0.54	0.12	0.47	0.11
Crit Moves:	****				****		****				****	
Green/Cycle:	0.32	0.30	0.36	0.17	0.15	0.15	0.12	0.31	0.31	0.07	0.25	0.42
Volume/Cap:	1.84	0.56	0.24	0.56	1.84	1.84	1.84	1.77	1.77	1.77	1.84	0.26
Delay/Veh:	417.9	30.4	22.5	40.5	428	427.7	439.2	384	383.9	425.2	419	18.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	417.9	30.4	22.5	40.5	428	427.7	439.2	384	383.9	425.2	419	18.8
HCM2kAvg:	92	8	3	6	39	39	36	76	76	19	70	3

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Intersection #7 Business Lane / Chico Mall Access

Average Delay (sec/veh): 9.4 Worst Case Level Of Service: F[81.4]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0	0	0	1!	0	0

Volume Module:

Base Vol:	9	142	69	143	561	7	13	8	8	84	11	4
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	9	142	69	143	561	7	13	8	8	84	11	4
Added Vol:	0	0	0	0	22	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	9	142	69	143	583	7	13	8	8	84	11	4
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	10	158	77	159	648	8	14	9	9	93	12	4
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	10	158	77	159	648	8	14	9	9	93	12	4

Critical Gap Module:

Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3

Capacity Module:

Cnflict Vol:	656	xxxx	xxxxx	234	xxxx	xxxxx	1194	1224	652	1194	1189	196
Potent Cap.:	941	xxxx	xxxxx	1345	xxxx	xxxxx	165	181	472	165	189	850
Move Cap.:	941	xxxx	xxxxx	1345	xxxx	xxxxx	138	156	472	138	163	850
Volume/Cap:	0.01	xxxx	xxxx	0.12	xxxx	xxxx	0.10	0.06	0.02	0.67	0.07	0.01

Level Of Service Module:

Queue:	0.0	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.9	xxxx	xxxxx	8.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	179	xxxxx	xxxx	146	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	xxxxx	4.6	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	29.5	xxxxx	xxxxx	81.4	xxxxx
Shared LOS:	*	*	*	*	*	*	*	D	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			29.5			81.4		
ApproachLOS:	*			*			D			F		

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #8 Business Lane / Baney Lane

Average Delay (sec/veh): 13.1 Worst Case Level Of Service: F[61.0]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1!	0	0

Volume Module:

Base Vol:	0	126	69	387	242	0	0	0	0	67	0	91
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	126	69	387	242	0	0	0	0	67	0	91
Added Vol:	0	0	0	11	10	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	126	69	398	252	0	0	0	0	67	0	91
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	140	77	442	280	0	0	0	0	74	0	101
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	140	77	442	280	0	0	0	0	74	0	101

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflict Vol:	xxxx	xxxx	xxxxx	217	xxxx	xxxxx	xxxx	xxxx	xxxxx	1343	xxxx	178
Potent Cap.:	xxxx	xxxx	xxxxx	1365	xxxx	xxxxx	xxxx	xxxx	xxxxx	169	xxxx	870
Move Cap.:	xxxx	xxxx	xxxxx	1365	xxxx	xxxxx	xxxx	xxxx	xxxxx	112	xxxx	870
Volume/Cap:	xxxx	xxxx	xxxx	0.32	xxxx	xxxx	xxxx	xxxx	xxxx	0.66	xxxx	0.12

Level Of Service Module:

Queue:	xxxxx	xxxx	xxxxx	1.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	A	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	226	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	1.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	5.6	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx	61.0	xxxx	xxxxx
Shared LOS:	*	*	*	A	*	*	*	*	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			61.0		
ApproachLOS:	*			*			*			F		

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2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #9 BANEY LN / WALMART WEST DRWY

Average Delay (sec/veh): 0.4 Worst Case Level Of Service: B[12.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0	0	0	0	0	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	7	0	8		0	0	0	0	448	8	4	158	0			
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	7	0	8		0	0	0	0	448	8	4	158	0			
Added Vol:	0	0	0		0	0	0	0	11	0	0	0	0			
PasserByVol:	0	0	0		0	0	0	0	0	0	0	0	0			
Initial Fut:	7	0	8		0	0	0	0	459	8	4	158	0			
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
PHF Volume:	8	0	9		0	0	0	0	510	9	4	176	0			
Reduct Vol:	0	0	0		0	0	0	0	0	0	0	0	0			
Final Vol.:	8	0	9		0	0	0	0	510	9	4	176	0			
Critical Gap Module:																
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	699	xxxx	514	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	519	xxxx	xxxxx				
Potent Cap.:	406	xxxx	560	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1047	xxxx	xxxxx				
Move Cap.:	405	xxxx	560	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1047	xxxx	xxxxx				
Volume/Cap:	0.02	xxxx	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx				
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	475	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx				
Shrd StpDel:	xxxxx	12.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx				
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	12.9			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

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2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #10 BANEY LN / WALMART CENTRAL DRWY

Average Delay (sec/veh): 2.4 Worst Case Level Of Service: B[12.8]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0
Volume Module:																
Base Vol:	0	0	92		0	0	0	0	349	156	67	171	0			
Growth Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	0	0	92		0	0	0	0	349	156	67	171	0			
Added Vol:	0	0	18		0	0	0	0	2	9	8	0	0			
PasserByVol:	0	0	0		0	0	0	0	0	0	0	0	0			
Initial Fut:	0	0	110		0	0	0	0	351	165	75	171	0			
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
PHF Adj:	0.90	0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
PHF Volume:	0	0	122		0	0	0	0	390	183	83	190	0			
Reduct Vol:	0	0	0		0	0	0	0	0	0	0	0	0			
Final Vol.:	0	0	122		0	0	0	0	390	183	83	190	0			
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	482	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	573	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	585	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1000	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	585	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1000	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	0.21	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	0.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	12.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx				
LOS by Move:	*	*	B	*	*	*	*	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.9	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	A	*	*				
ApproachDel:	12.8			xxxxxx			xxxxxx			xxxxxx						
ApproachLOS:	B			*			*			*						

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2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #11 BANEY LN / WALMART EAST DRWY

Average Delay (sec/veh): 119.6 Worst Case Level Of Service: F[1366.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	0	0	1	0	0	1!	0	0	1	0	0	1	0	0
Volume Module:																
Base Vol:	0	0	184	115	4	3	9	429	11	241	235	105				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	0	0	184	115	4	3	9	429	11	241	235	105				
Added Vol:	0	0	20	0	0	0	0	19	1	6	8	0				
PasserByVol:	0	0	34	0	0	0	0	0	0	25	0	0				
Initial Fut:	0	0	238	115	4	3	9	448	12	272	243	105				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	0	0	264	128	4	3	10	498	13	302	270	117				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Final Vol.:	0	0	264	128	4	3	10	498	13	302	270	117				
Critical Gap Module:																
Critical Gp:	xxxxx	xxxx	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx				
FollowUpTim:	xxxxx	xxxx	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx				
Capacity Module:																
Cnflict Vol:	xxxx	xxxx	504	1589	1464	328	387	xxxx	xxxxx	511	xxxx	xxxxx				
Potent Cap.:	xxxx	xxxx	572	88	130	718	1172	xxxx	xxxxx	1054	xxxx	xxxxx				
Move Cap.:	xxxx	xxxx	572	37	92	718	1172	xxxx	xxxxx	1054	xxxx	xxxxx				
Volume/Cap:	xxxx	xxxx	0.46	3.50	0.05	0.00	0.01	xxxx	xxxx	0.29	xxxx	xxxx				
Level Of Service Module:																
Queue:	xxxxx	xxxx	2.4	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	1.2	xxxx	xxxxx				
Stopped Del:	xxxxx	xxxx	16.6	xxxxx	xxxx	xxxxx	8.1	xxxx	xxxxx	9.8	xxxx	xxxxx				
LOS by Move:	*	*	C	*	*	*	A	*	*	A	*	*				
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	38	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	15.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	1366	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	F	*	*	*	*	*	*	*				
ApproachDel:	16.6			1366.1			xxxxxx			xxxxxx						
ApproachLOS:	C			F			*			*						

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #12 Forest Avenue / Baney Lane - Parkway Village Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.783
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 32.4
Optimal Cycle: 83 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	1	0	1	1	0	1	0	2	0	1	2	0	0	1	0	
Volume Module:																
Base Vol:	260	644	3	23	444	305	418	23	287	13	16	28				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	260	644	3	23	444	305	418	23	287	13	16	28				
Added Vol:	4	99	12	0	76	6	26	4	10	11	3	0				
PasserByVol:	0	23	0	0	23	25	27	0	7	0	0	0				
Initial Fut:	264	766	15	23	543	336	471	27	304	24	19	28				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	293	851	17	26	603	373	523	30	338	27	21	31				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	293	851	17	26	603	373	523	30	338	27	21	31				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	293	851	17	26	603	373	523	30	338	27	21	31				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.90	0.90	0.90	0.90	0.90	0.81	0.90	0.84	0.84	0.93	0.89	0.89				
Lanes:	1.00	1.96	0.04	1.00	2.00	1.00	2.00	0.08	0.92	1.00	0.40	0.60				
Final Sat.:	1718	3361	66	1718	3437	1537	3432	131	1474	1769	686	1011				
Capacity Analysis Module:																
Vol/Sat:	0.17	0.25	0.25	0.01	0.18	0.24	0.15	0.23	0.23	0.02	0.03	0.03				
Crit Moves:	****					****		****		****						
Green/Cycle:	0.22	0.50	0.50	0.03	0.31	0.31	0.26	0.29	0.29	0.02	0.05	0.05				
Volume/Cap:	0.78	0.51	0.51	0.51	0.57	0.78	0.59	0.78	0.78	0.78	0.59	0.59				
Delay/Veh:	47.2	17.1	17.1	56.1	29.6	39.7	33.4	40.8	40.8	120.9	56.2	56.2				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	47.2	17.1	17.1	56.1	29.6	39.7	33.4	40.8	40.8	120.9	56.2	56.2				
HCM2kAvg:	11	9	9	2	8	12	8	12	12	2	3	3				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #13 FOREST AVE / DWY 5

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[12.9]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	2	0	0	0	0	1	1	0	0	0	0	0	1	0	0	0	0	0
Volume Module:																				
Base Vol:	0	907	0	0	738	6	0	0	67	0	0	0								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	0	907	0	0	738	6	0	0	67	0	0	0								
Added Vol:	0	116	0	0	89	7	0	0	6	0	0	0								
PasserByVol:	0	23	0	0	29	0	0	0	0	0	0	0								
Initial Fut:	0	1046	0	0	856	13	0	0	73	0	0	0								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	0	1162	0	0	951	14	0	0	81	0	0	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Final Vol.:	0	1162	0	0	951	14	0	0	81	0	0	0								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	xxxxx								
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	xxxxx								
Capacity Module:																				
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	483	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	535	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	535	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.15	xxxx	xxxx	xxxx								
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	0.5	xxxxx	xxxx	xxxxx								
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	12.9	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	*	*	B	*	*	*								
Movement:	LT - LTR - RT				LT - LTR - RT				LT - LTR - RT				LT - LTR - RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx				
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*				
ApproachDel:	xxxxxx				xxxxxx				12.9				xxxxxx			
ApproachLOS:	*				*				B				*			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #14 Forest Avenue / Talbert Drive - Whittmeier Drive

Cycle (sec): 100 Critical Vol./Cap. (X): 0.743
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 33.0
Optimal Cycle: 76 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	1!	0	0	1	0	1!	0	0
Volume Module:																				
Base Vol:	56	591	51	61	730	14	230	0	29	47	0	86								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	56	591	51	61	730	14	230	0	29	47	0	86								
Added Vol:	46	4	0	0	52	15	111	13	9	0	11	0								
PasserByVol:	74	-24	0	0	0	0	47	0	53	0	0	0								
Initial Fut:	176	571	51	61	782	29	388	13	91	47	11	86								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	196	634	57	68	869	32	431	14	101	52	12	96								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	196	634	57	68	869	32	431	14	101	52	12	96								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	196	634	57	68	869	32	431	14	101	52	12	96								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	0.94	0.94	0.95	0.95	0.95	0.94	0.94	0.94	0.90	0.90	0.90								
Lanes:	1.00	1.84	0.16	1.00	1.93	0.07	1.65	0.04	0.31	1.20	0.09	0.71								
Final Sat.:	1805	3274	292	1805	3464	128	2933	78	543	2033	155	1214								
Capacity Analysis Module:																				
Vol/Sat:	0.11	0.19	0.19	0.04	0.25	0.25	0.15	0.19	0.19	0.03	0.08	0.08								
Crit Moves:	****				****			****			****									
Green/Cycle:	0.15	0.40	0.40	0.08	0.34	0.34	0.25	0.25	0.25	0.11	0.11	0.11								
Volume/Cap:	0.74	0.48	0.48	0.48	0.74	0.74	0.59	0.74	0.74	0.24	0.74	0.74								
Delay/Veh:	51.8	22.2	22.2	46.7	31.8	31.8	33.9	38.6	38.6	41.2	56.4	56.4								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	51.8	22.2	22.2	46.7	31.8	31.8	33.9	38.6	38.6	41.2	56.4	56.4								
HCM2kAvg:	8	3	3	14	14	14	8	11	11	1	6	6								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #15 Forest Avenue / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.643
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 15.6
Optimal Cycle: 62 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Ovl				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0				
Lanes:	1	0	1	1	0	1	0	1	1	0	1	0	2	1	0	0	1	0		
Volume Module:																				
Base Vol:	619	399	8	10	188	27	28	71	667	5	52	22								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	619	399	8	10	188	27	28	71	667	5	52	22								
Added Vol:	47	0	0	0	0	0	0	0	57	0	0	0								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	666	399	8	10	188	27	28	71	724	5	52	22								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	740	443	9	11	209	30	31	79	804	6	58	24								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	740	443	9	11	209	30	31	79	804	6	58	24								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	740	443	9	11	209	30	31	79	804	6	58	24								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	0.95	0.95	0.95	0.93	0.93	0.95	1.00	0.75	0.95	0.96	0.96								
Lanes:	1.00	1.96	0.04	1.00	1.75	0.25	1.00	1.00	2.00	1.00	0.70	0.30								
Final Sat.:	1805	3528	71	1805	3097	445	1805	1900	2842	1805	1275	539								
Capacity Analysis Module:																				
Vol/Sat:	0.41	0.13	0.13	0.01	0.07	0.07	0.02	0.04	0.28	0.00	0.05	0.05								
Crit Moves:	****				****		****				****									
Green/Cycle:	0.64	0.71	0.71	0.03	0.10	0.10	0.03	0.09	0.73	0.01	0.07	0.07								
Volume/Cap:	0.64	0.18	0.18	0.18	0.64	0.64	0.64	0.46	0.39	0.46	0.64	0.64								
Delay/Veh:	12.4	4.9	4.9	48.2	46.8	46.8	74.0	45.1	5.3	74.6	55.9	55.9								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	12.4	4.9	4.9	48.2	46.8	46.8	74.0	45.1	5.3	74.6	55.9	55.9								
HCM2kAvg:	15	2	2	1	5	5	2	3	5	1	4	4								

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #16 E. Park Avenue / Whitman Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.785
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 25.4
Optimal Cycle: 83 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0				
Lanes:	0	0	1!	0	0	1	0	0	1	0	1	0	1	1	0	1	0	1	1	0
Volume Module:																				
Base Vol:	14	3	9	303	3	126	103	1036	10	15	930	290								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	14	3	9	303	3	126	103	1036	10	15	930	290								
Added Vol:	0	0	0	1	0	0	0	9	0	0	10	1								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	14	3	9	304	3	126	103	1045	10	15	940	291								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	16	3	10	338	3	140	114	1161	11	17	1044	323								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	16	3	10	338	3	140	114	1161	11	17	1044	323								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	16	3	10	338	3	140	114	1161	11	17	1044	323								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.93	0.93	0.93	0.95	0.85	0.85	0.95	0.95	0.95	0.95	0.92	0.92								
Lanes:	0.54	0.11	0.35	1.00	0.02	0.98	1.00	1.98	0.02	1.00	1.53	0.47								
Final Sat.:	950	203	610	1805	38	1583	1805	3572	34	1805	2660	824								
Capacity Analysis Module:																				
Vol/Sat:	0.02	0.02	0.02	0.19	0.09	0.09	0.06	0.33	0.33	0.01	0.39	0.39								
Crit Moves:	****			****			****				****									
Green/Cycle:	0.02	0.02	0.02	0.24	0.24	0.24	0.08	0.56	0.56	0.02	0.50	0.50								
Volume/Cap:	0.79	0.79	0.79	0.79	0.37	0.37	0.79	0.58	0.58	0.58	0.79	0.79								
Delay/Veh:	117.6	118	117.6	44.9	32.4	32.4	69.0	14.4	14.4	74.2	23.0	23.0								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	117.6	118	117.6	44.9	32.4	32.4	69.0	14.4	14.4	74.2	23.0	23.0								
HCM2kAvg:	2	2	2	12	4	4	6	12	12	1	19	19								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #17 E. Park Avenue - Skyway / SB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.674
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 18.3
Optimal Cycle: 45 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ignore					Ignore					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	0	1!	0	0	2	0	0	0	1	0	0	2	0	1	0	0	2	0	1
Volume Module:																				
Base Vol:		0	0	0	733	0	317		0	1039	321		0	1248	216	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Initial Bse:		0	0	0	733	0	317		0	1039	321		0	1248	216	
Added Vol:		0	0	0	0	0	0		0	10	0		0	12	0	
PasserByVol:		0	0	0	0	0	0		0	0	0		0	0	15	
Initial Fut:		0	0	0	733	0	317		0	1049	321		0	1260	231	
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00	0.90	0.90	0.00				
PHF Volume:		0	0	0	814	0	0		0	1166	0		0	1400	0	
Reduct Vol:		0	0	0	0	0	0		0	0	0		0	0	0	
Reduced Vol:		0	0	0	814	0	0		0	1166	0		0	1400	0	
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00				
Final Vol.:		0	0	0	814	0	0		0	1166	0		0	1400	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	1.00	1.00	1.00	0.92	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Lanes:	0.00	1.00	0.00	2.00	0.00	1.00	0.00	2.00	1.00	0.00	2.00	1.00				
Final Sat.:		0	1900	0	3502	0	1900		0	3610	1900		0	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.32	0.00	0.00	0.39	0.00				
Crit Moves:				****				****				****				
Green/Cycle:	0.00	0.00	0.00	0.34	0.00	0.00	0.00	0.58	0.00	0.00	0.58	0.00				
Volume/Cap:	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.56	0.00	0.00	0.67	0.00				
Delay/Veh:	0.0	0.0	0.0	29.5	0.0	0.0	0.0	13.7	0.0	0.0	15.6	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	0.0	0.0	0.0	29.5	0.0	0.0	0.0	13.7	0.0	0.0	15.6	0.0				
HCM2kAvg:		0	0	0	12	0	0		0	11	0		0	15	0	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #18 E. Park Avenue-Skyway / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.655
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 13.4
Optimal Cycle: 43 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Permitted					Permitted				
Rights:	Include					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	1	0	0	0	0	0	0	0	2	0	1	0	0	2	0	1
Volume Module:																				
Base Vol:	303		0	293		0	0		0		0	1496	276		0	1161	827	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	303		0	293		0	0		0		0	1496	276		0	1161	827	
Added Vol:		0	0	13		0	0		0		0	10	0		0	28	0	
PasserByVol:		0	0	18		0	0		0		0	0	0		0	15	0	
Initial Fut:	303		0	324		0	0		0		0	1506	276		0	1204	827	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00				
PHF Volume:	337		0	360		0	0		0		0	1673	0		0	1338	0	
Reduct Vol:		0	0	0		0	0		0		0	0	0		0	0	0	
Reduced Vol:	337		0	360		0	0		0		0	1673	0		0	1338	0	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
Final Vol.:	337		0	360		0	0		0		0	1673	0		0	1338	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.90	1.00	0.90	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00				
Lanes:	1.48	0.00	1.52	0.00	0.00	0.00	0.00	2.00	1.00	0.00	2.00	1.00				
Final Sat.:	2536		0	2593		0	0		0		0	3610	1900		0	3610	1900	
Capacity Analysis Module:																
Vol/Sat:	0.13	0.00	0.14	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.37	0.00				
Crit Moves:			****					****								
Green/Cycle:	0.21	0.00	0.21	0.00	0.00	0.00	0.00	0.71	0.00	0.00	0.71	0.00				
Volume/Cap:	0.63	0.00	0.65	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.52	0.00				
Delay/Veh:	36.9	0.0	37.5	0.0	0.0	0.0	0.0	8.6	0.0	0.0	7.0	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	36.9	0.0	37.5	0.0	0.0	0.0	0.0	8.6	0.0	0.0	7.0	0.0				
HCM2kAvg:		7	0	8		0	0		0		0	14	0		0	10	0	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
2018 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 1.107
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 73.4
Optimal Cycle: 180 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	0	1	0	1	0	1	0	1	2	0	2	0	1	1	0	2	0	1
Volume Module:																				
Base Vol:	450	374		60	235	116	597		649	973	167		65	919	393	
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	450	374		60	235	116	597		649	973	167		65	919	393	
Added Vol:		0	6	0	22	7	28		23	0	0		0	0	18	
PasserByVol:		0	0	0	14	0	34		32	-14	0		0	-18	18	
Initial Fut:	450	380		60	271	123	659		704	959	167		65	901	429	
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	500	422		67	301	137	732		782	1066	186		72	1001	477	
Reduct Vol:		0	0	0	0	0	0		0	0	0		0	0	0	
Reduced Vol:	500	422		67	301	137	732		782	1066	186		72	1001	477	
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	500	422		67	301	137	732		782	1066	186		72	1001	477	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	0.98	0.98	0.95	1.00	0.85	0.92	0.95	0.85	0.95	0.95	0.85				
Lanes:	2.00	0.86	0.14	1.00	1.00	1.00	2.00	2.00	1.00	1.00	2.00	1.00				
Final Sat.:	3502	1608		254	1805	1900	1615	3502	3610	1615	1805	3610	1615			
Capacity Analysis Module:																
Vol/Sat:	0.14	0.26	0.26	0.17	0.07	0.45	0.22	0.30	0.11	0.04	0.28	0.30				
Crit Moves:		****			****			****			****					
Green/Cycle:	0.15	0.24	0.24	0.15	0.24	0.44	0.20	0.40	0.55	0.05	0.25	0.40				
Volume/Cap:	0.96	1.11	1.11	1.11	0.30	1.03	1.11	0.74	0.21	0.74	1.11	0.74				
Delay/Veh:	72.1	113	113.4	128.9	31.6	69.0	107.1	27.8	11.7	72.5	101	29.8				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	72.1	113	113.4	128.9	31.6	69.0	107.1	27.8	11.7	72.5	101	29.8				
HCM2kAvg:	12	25	25	17	4	31	22	15	3	4	25	14				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.991
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 50.4
Optimal Cycle: 170 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1! 0 0			0 1 0 0 2			2 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	446	68	44	108	58	353	455	1034	96	111	994	126
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	446	68	44	108	58	353	455	1034	96	111	994	126
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	496	76	49	120	64	392	506	1149	107	123	1104	140
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	496	76	49	120	64	392	506	1149	107	123	1104	140
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	496	76	49	120	64	392	506	1149	107	123	1104	140
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.95	0.95	0.73	0.88	0.89	0.89	0.90	0.89	0.89
Lanes:	1.67	0.20	0.13	0.65	0.35	2.00	2.00	1.83	0.17	1.00	1.77	0.23
Final Sat.:	2948	359	232	1173	630	2786	3334	3104	288	1718	2998	380
Capacity Analysis Module:												
Vol/Sat:	0.17	0.21	0.21	0.10	0.10	0.14	0.15	0.37	0.37	0.07	0.37	0.37
Crit Moves:			****	****			****				****	
Green/Cycle:	0.21	0.21	0.21	0.10	0.10	0.26	0.15	0.44	0.44	0.09	0.37	0.37
Volume/Cap:	0.79	0.99	0.99	0.99	0.99	0.55	0.99	0.84	0.84	0.84	0.99	0.99
Delay/Veh:	42.8	73.0	73.0	108.1	108	33.1	79.8	29.5	29.5	78.5	54.5	54.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	42.8	73.0	73.0	108.1	108	33.1	79.8	29.5	29.5	78.5	54.5	54.5
HCM2kAvg:	11	17	17	10	10	6	13	20	20	6	26	26

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated Existing SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.897
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 45.8
Optimal Cycle: 115 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Include			Include			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1 0 1			1 0 1 1 0			1 0 1 1 0			1 0 2 0 1		
Volume Module:												
Base Vol:	528	338	69	126	306	229	251	438	273	118	713	131
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	528	338	69	126	306	229	251	438	273	118	713	131
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	587	376	77	140	340	254	279	487	303	131	792	146
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	587	376	77	140	340	254	279	487	303	131	792	146
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	587	376	77	140	340	254	279	487	303	131	792	146
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	0.95	0.81	0.90	0.85	0.85	0.90	0.85	0.85	0.90	0.90	0.81
Lanes:	2.00	1.00	1.00	1.00	1.14	0.86	1.00	1.23	0.77	1.00	2.00	1.00
Final Sat.:	3334	1809	1537	1718	1840	1377	1718	1994	1243	1718	3437	1537
Capacity Analysis Module:												
Vol/Sat:	0.18	0.21	0.05	0.08	0.18	0.18	0.16	0.24	0.24	0.08	0.23	0.09
Crit Moves:	****				****		****				****	
Green/Cycle:	0.20	0.29	0.39	0.11	0.21	0.21	0.18	0.33	0.33	0.10	0.26	0.37
Volume/Cap:	0.90	0.72	0.13	0.72	0.90	0.90	0.90	0.73	0.73	0.73	0.90	0.26
Delay/Veh:	54.3	36.7	19.5	55.0	53.6	53.6	66.8	32.0	32.0	57.7	47.7	22.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	54.3	36.7	19.5	55.0	53.6	53.6	66.8	32.0	32.0	57.7	47.7	22.1
HCM2kAvg:	13	12	2	6	12	12	12	12	12	6	15	3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.013
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 40.4
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ovl			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0 1! 0 0			1 1 0 0 2			0 0 2 0 1			0 0 2 0 1		
Volume Module:												
Base Vol:	0	0	0	1248	3	550	0	1631	130	0	1035	413
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1248	3	550	0	1631	130	0	1035	413
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00
PHF Volume:	0	0	0	1387	3	611	0	1812	144	0	1150	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1387	3	611	0	1812	144	0	1150	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	0	1387	3	611	0	1812	144	0	1150	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	0.85	0.75	1.00	0.95	0.85	1.00	0.95	1.00
Lanes:	0.00	1.00	0.00	1.99	0.01	2.00	0.00	2.00	1.00	0.00	2.00	1.00
Final Sat.:	0	1900	0	3222	8	2842	0	3610	1615	0	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.43	0.43	0.21	0.00	0.50	0.09	0.00	0.32	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.42	0.42	0.42	0.00	0.50	0.50	0.00	0.50	0.00
Volume/Cap:	0.00	0.00	0.00	1.01	1.01	0.51	0.00	1.01	0.18	0.00	0.64	0.00
Delay/Veh:	0.0	0.0	0.0	56.4	56.4	21.4	0.0	49.9	14.1	0.0	19.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	56.4	56.4	21.4	0.0	49.9	14.1	0.0	19.5	0.0
HCM2kAvg:	0	0	0	34	34	7	0	37	2	0	14	0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.004
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 35.5
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1 0 0 2			0 0 0 0 0			2 0 2 0 0			0 0 2 0 1		
Volume Module:												
Base Vol:	146	5	497	0	0	0	508	2371	0	0	1302	1055
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	146	5	497	0	0	0	508	2371	0	0	1302	1055
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00
PHF Volume:	162	6	552	0	0	0	564	2634	0	0	1447	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	6	552	0	0	0	564	2634	0	0	1447	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Final Vol.:	162	6	552	0	0	0	564	2634	0	0	1447	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.85	0.85	0.75	1.00	1.00	1.00	0.92	0.95	1.00	1.00	0.95	1.00
Lanes:	0.97	0.03	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1562	53	2842	0	0	0	3502	3610	0	0	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.19	0.00	0.00	0.00	0.16	0.73	0.00	0.00	0.40	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.19	0.19	0.19	0.00	0.00	0.00	0.21	0.73	0.00	0.00	0.52	0.00
Volume/Cap:	0.54	0.54	1.00	0.00	0.00	0.00	0.77	1.00	0.00	0.00	0.77	0.00
Delay/Veh:	38.1	38.1	79.8	0.0	0.0	0.0	42.5	32.3	0.0	0.0	21.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.1	38.1	79.8	0.0	0.0	0.0	42.5	32.3	0.0	0.0	21.4	0.0
HCM2kAvg:	6	6	14	0	0	0	11	50	0	0	19	0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec):	100	Critical Vol./Cap. (X):	0.972
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	41.5
Optimal Cycle:	155	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1! 0 0			0 1 0 0 2			2 0 3 0 1			1 0 3 0 1		
Volume Module:												
Base Vol:	394	41	32	129	42	402	570	1701	157	93	1561	97
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	394	41	32	129	42	402	570	1701	157	93	1561	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	438	46	36	143	47	447	633	1890	174	103	1734	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	438	46	36	143	47	447	633	1890	174	103	1734	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	438	46	36	143	47	447	633	1890	174	103	1734	108
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.94	0.94	0.73	0.88	0.87	0.81	0.90	0.87	0.81
Lanes:	1.73	0.15	0.12	0.75	0.25	2.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3061	269	210	1354	441	2786	3334	4938	1537	1718	4938	1537
Capacity Analysis Module:												
Vol/Sat:	0.14	0.17	0.17	0.11	0.11	0.16	0.19	0.38	0.11	0.06	0.35	0.07
Crit Moves:			****		****		****				****	
Green/Cycle:	0.17	0.17	0.17	0.11	0.11	0.30	0.20	0.48	0.48	0.08	0.36	0.36
Volume/Cap:	0.82	0.97	0.97	0.97	0.97	0.53	0.97	0.80	0.24	0.80	0.97	0.19
Delay/Veh:	48.1	72.8	72.8	100.5	100	29.4	68.2	23.8	15.3	73.3	46.6	22.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	48.1	72.8	72.8	100.5	100	29.4	68.2	23.8	15.3	73.3	46.6	22.1
HCM2kAvg:	10	14	14	10	10	6	15	18	3	5	23	2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec):	100	Critical Vol./Cap. (X):	0.823
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	40.2
Optimal Cycle:	92	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1 1 0			1 0 2 0 1			1 0 3 0 1			1 0 3 0 1		
Volume Module:												
Base Vol:	583	467	55	179	372	189	320	814	362	145	756	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	583	467	55	179	372	189	320	814	362	145	756	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	648	519	61	199	413	210	356	904	402	161	840	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	648	519	61	199	413	210	356	904	402	161	840	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	648	519	61	199	413	210	356	904	402	161	840	93
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	0.89	0.89	0.90	0.90	0.81	0.90	0.87	0.81	0.90	0.87	0.81
Lanes:	2.00	1.79	0.21	1.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3334	3025	356	1718	3437	1537	1718	4938	1537	1718	4938	1537
Capacity Analysis Module:												
Vol/Sat:	0.19	0.17	0.17	0.12	0.12	0.14	0.21	0.18	0.26	0.09	0.17	0.06
Crit Moves:	****				****		****				****	
Green/Cycle:	0.24	0.23	0.23	0.15	0.15	0.40	0.25	0.34	0.34	0.12	0.21	0.21
Volume/Cap:	0.82	0.75	0.75	0.75	0.82	0.34	0.82	0.54	0.78	0.78	0.82	0.29
Delay/Veh:	43.3	40.1	40.1	51.9	52.0	21.4	47.4	27.3	37.0	59.3	43.4	34.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	43.3	40.1	40.1	51.9	52.0	21.4	47.4	27.3	37.0	59.3	43.4	34.0
HCM2kAvg:	12	10	10	8	9	5	13	8	13	7	11	3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec):	100	Critical Vol./Cap. (X):	0.987
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	48.2
Optimal Cycle:	166	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 0 1 0			1 0 1 0 2			2 0 2 0 1			1 0 2 0 1		
Volume Module:												
Base Vol:	363	176	67	261	84	587	579	1505	251	92	991	151
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	363	176	67	261	84	587	579	1505	251	92	991	151
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	403	196	74	290	93	652	643	1672	279	102	1101	168
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	403	196	74	290	93	652	643	1672	279	102	1101	168
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	403	196	74	290	93	652	643	1672	279	102	1101	168
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.92	0.96	0.96	0.95	1.00	0.75	0.92	0.95	0.85	0.95	0.95	0.85
Lanes:	2.00	0.72	0.28	1.00	1.00	2.00	2.00	2.00	1.00	1.00	2.00	1.00
Final Sat.:	3502	1320	502	1805	1900	2842	3502	3610	1615	1805	3610	1615
Capacity Analysis Module:												
Vol/Sat:	0.12	0.15	0.15	0.16	0.05	0.23	0.18	0.46	0.17	0.06	0.31	0.10
Crit Moves:		****		****				****		****		
Green/Cycle:	0.22	0.15	0.15	0.16	0.09	0.29	0.20	0.47	0.69	0.06	0.33	0.49
Volume/Cap:	0.52	0.99	0.99	0.99	0.52	0.79	0.93	0.99	0.25	0.99	0.93	0.21
Delay/Veh:	35.1	92.9	92.9	90.4	46.1	37.6	58.1	44.9	6.0	131.0	44.8	14.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	35.1	92.9	92.9	90.4	46.1	37.6	58.1	44.9	6.0	131.0	44.8	14.5
HCM2kAvg:	6	13	13	14	3	11	14	32	3	7	21	3

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.936
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 25.5
Optimal Cycle: 124 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	1	0	0	2	0	0	0	0	0	2	0	2	0	0	0	0	2	0	1
Volume Module:																				
Base Vol:	92		0	431		0		0		0	413	2251		0		0	1439		892	
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	
Initial Bse:	92		0	431		0		0		0	413	2251		0		0	1439		892	
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00		1.00	1.00		0.00	
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.00	0.90		0.90	0.90		0.00	
PHF Volume:	102		0	479		0		0		0	459	2501		0		0	1599		0	
Reduct Vol:	0		0	0		0		0		0	0	0		0		0	0		0	
Reduced Vol:	102		0	479		0		0		0	459	2501		0		0	1599		0	
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00		1.00	1.00		0.00	
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	0.00	1.00		1.00	1.00		0.00	
Final Vol.:	102		0	479		0		0		0	459	2501		0		0	1599		0	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900	1900	1900	1900	1900		1900	1900		1900	
Adjustment:	0.95	1.00		0.75	1.00	1.00		1.00	0.92	0.95	1.00	1.00	0.95	1.00						
Lanes:	1.00	0.00		2.00	0.00	0.00		0.00	2.00	2.00	0.00	0.00	2.00	1.00						
Final Sat.:	1809		0	2842		0		0		0	3502	3610		0		0	3610		1900	
Capacity Analysis Module:																				
Vol/Sat:	0.06	0.00		0.17	0.00	0.00		0.00	0.13	0.69	0.00	0.00	0.44	0.00						
Crit Moves:				****						****			****							
Green/Cycle:	0.18	0.00		0.18	0.00	0.00		0.00	0.17	0.74	0.00	0.00	0.57	0.00						
Volume/Cap:	0.31	0.00		0.94	0.00	0.00		0.00	0.78	0.94	0.00	0.00	0.78	0.00						
Delay/Veh:	36.2	0.0		65.3	0.0	0.0		0.0	46.1	18.1	0.0	0.0	18.4	0.0						
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00						
AdjDel/Veh:	36.2	0.0		65.3	0.0	0.0		0.0	46.1	18.1	0.0	0.0	18.4	0.0						
HCM2kAvg:	3	0		11	0	0		0	9	38	0	0	20	0						

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.012
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 50.1
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Ovl					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1!	0	0	0	1	0	0	2	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	473		70	45		151		60	443		542	1502		102		114	1415		164	
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	473		70	45		151		60	443		542	1502		102		114	1415		164	
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	526		78	50		168		67	492		602	1669		113		127	1572		182	
Reduct Vol:	0		0	0		0		0	0		0	0		0		0	0		0	
Reduced Vol:	526		78	50		168		67	492		602	1669		113		127	1572		182	
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	526		78	50		168		67	492		602	1669		113		127	1572		182	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.93	0.93		0.93	0.95	0.95		0.73	0.88		0.87	0.81		0.90		0.87	0.81			
Lanes:	1.67	0.20		0.13	0.72	0.28		2.00	2.00		3.00	1.00		1.00		3.00	1.00			
Final Sat.:	2957	352		226	1286	511		2786	3334		4938	1537		1718		4938	1537			
Capacity Analysis Module:																				
Vol/Sat:	0.18	0.22		0.22	0.13	0.13		0.18	0.18		0.34	0.07		0.07		0.32	0.12			
Crit Moves:		****				****			****							****				
Green/Cycle:	0.22	0.22		0.22	0.13	0.13		0.31	0.18		0.40	0.40		0.09		0.31	0.31			
Volume/Cap:	0.81	1.01		1.01	1.01	1.01		0.58	1.01		0.84	0.18		0.84		1.01	0.38			
Delay/Veh:	43.6	77.6		77.6	105.9	106		30.1	81.1		30.0	19.3		76.0		60.2	27.2			
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00			
AdjDel/Veh:	43.6	77.6		77.6	105.9	106		30.1	81.1		30.0	19.3		76.0		60.2	27.2			
HCM2kAvg:	12	19		19	12	12		7	15		18	2		6		23	5			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.889
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 41.1
Optimal Cycle: 112 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	1	1	0	1	0	2	0	1	1	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	598		404	77		130	373		271		297	799		340		128	1043		135	
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	598		404	77		130	373		271		297	799		340		128	1043		135	
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	664		449	86		144	414		301		330	888		378		142	1159		150	
Reduct Vol:	0		0	0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	664		449	86		144	414		301		330	888		378		142	1159		150	
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	664	449		86	144	414		301		330	888		378		142	1159		150		
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.88	0.88		0.88	0.90	0.90		0.81	0.90		0.87	0.81		0.90		0.87	0.81			
Lanes:	2.00	1.68		0.32	1.00	2.00		1.00	1.00		3.00	1.00		1.00		3.00	1.00			
Final Sat.:	3334	2817		537	1718	3437		1537	1718		4938	1537		1718		4938	1537			
Capacity Analysis Module:																				
Vol/Sat:	0.20	0.16		0.16	0.08	0.12		0.20	0.19		0.18	0.25		0.08		0.23	0.10			
Crit Moves:	****					****			****							****				
Green/Cycle:	0.22	0.24		0.24	0.12	0.14		0.35	0.22		0.36	0.36		0.12		0.26	0.26			
Volume/Cap:	0.89	0.68		0.68	0.68	0.89		0.56	0.89		0.50	0.68		0.68		0.89	0.37			
Delay/Veh:	50.2	37.1		37.1	50.2	61.0		27.4	60.1		25.3	30.8		51.2		43.2	30.6			
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00		1.00		1.00	1.00			
AdjDel/Veh:	50.2	37.1		37.1	50.2	61.0		27.4	60.1		25.3	30.8		51.2		43.2	30.6			
HCM2kAvg:	14	9		9	6	9		8	14		7	11		6		15	4			

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 E. 20th Street / SB Sr-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.033
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 44.1
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Ovl			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	1! 0	0	1	1 0	0 2	0 0	2 0	1	2 0	1 1	0
Volume Module:												
Base Vol:	0	0	0	1248	3	550	0	1631	130	0	1035	413
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	1248	3	550	0	1631	130	0	1035	413
Added Vol:	0	0	0	18	0	0	0	26	0	0	29	0
PasserByVol:	0	0	0	12	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	1278	3	550	0	1657	130	0	1064	413
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00
PHF Volume:	0	0	0	1420	3	611	0	1841	144	0	1182	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	1420	3	611	0	1841	144	0	1182	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Final Vol.:	0	0	0	1420	3	611	0	1841	144	0	1182	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.85	0.85	0.75	1.00	0.95	0.85	0.97	0.95	0.95
Lanes:	0.00	1.00	0.00	1.99	0.01	2.00	0.00	2.00	1.00	2.00	2.00	0.00
Final Sat.:	0	1900	0	3222	8	2842	0	3610	1615	3686	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.44	0.44	0.21	0.00	0.51	0.09	0.00	0.33	0.00
Crit Moves:				****				****		****		
Green/Cycle:	0.00	0.00	0.00	0.43	0.43	0.43	0.00	0.49	0.49	0.00	0.49	0.00
Volume/Cap:	0.00	0.00	0.00	1.03	1.03	0.50	0.00	1.03	0.18	0.00	0.66	0.00
Delay/Veh:	0.0	0.0	0.0	61.9	61.9	21.3	0.0	55.8	14.2	0.0	20.0	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	61.9	61.9	21.3	0.0	55.8	14.2	0.0	20.0	0.0
HCM2kAvg:	0	0	0	35	35	7	0	38	2	0	14	0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.023
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 38.4
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Ovl			Include			Ignore			Ignore		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 1	0 0	2	0 0	0 0	0 0	2 0	0 2	0 0	0 0	2 0	1
Volume Module:												
Base Vol:	146	5	497	0	0	0	508	2371	0	0	1302	1055
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	146	5	497	0	0	0	508	2371	0	0	1302	1055
Added Vol:	0	0	0	0	0	0	0	44	0	0	29	21
PasserByVol:	0	0	0	0	0	0	0	12	0	0	0	16
Initial Fut:	146	5	497	0	0	0	508	2427	0	0	1331	1092
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00
PHF Volume:	162	6	552	0	0	0	564	2697	0	0	1479	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	162	6	552	0	0	0	564	2697	0	0	1479	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Final Vol.:	162	6	552	0	0	0	564	2697	0	0	1479	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.85	0.85	0.75	1.00	1.00	1.00	0.92	0.95	1.00	1.00	0.95	1.00
Lanes:	0.97	0.03	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	1562	53	2842	0	0	0	3502	3610	0	0	3610	1900
Capacity Analysis Module:												
Vol/Sat:	0.10	0.10	0.19	0.00	0.00	0.00	0.16	0.75	0.00	0.00	0.41	0.00
Crit Moves:			****					****		****		
Green/Cycle:	0.19	0.19	0.19	0.00	0.00	0.00	0.21	0.73	0.00	0.00	0.52	0.00
Volume/Cap:	0.55	0.55	1.02	0.00	0.00	0.00	0.78	1.02	0.00	0.00	0.78	0.00
Delay/Veh:	38.7	38.7	85.2	0.0	0.0	0.0	43.1	37.2	0.0	0.0	21.4	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	38.7	38.7	85.2	0.0	0.0	0.0	43.1	37.2	0.0	0.0	21.4	0.0
HCM2kAvg:	6	6	14	0	0	0	11	52	0	0	20	0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 0.978
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 40.2
Optimal Cycle: 159 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	1! 0	0	0 1	0 0	2	2 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	285	41	32	129	42	402	570	1701	157	93	1670	97
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	285	41	32	129	42	402	570	1701	157	93	1670	97
Added Vol:	0	0	0	0	0	0	0	18	0	0	50	0
PasserByVol:	0	0	0	0	0	0	0	12	0	0	16	0
Initial Fut:	285	41	32	129	42	402	570	1731	157	93	1736	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	317	46	36	143	47	447	633	1923	174	103	1929	108
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	317	46	36	143	47	447	633	1923	174	103	1929	108
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	317	46	36	143	47	447	633	1923	174	103	1929	108
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.93	0.93	0.94	0.94	0.73	0.88	0.87	0.81	0.90	0.87	0.81
Lanes:	1.66	0.19	0.15	0.75	0.25	2.00	2.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	2937	336	263	1354	441	2786	3334	4938	1537	1718	4938	1537
Capacity Analysis Module:												
Vol/Sat:	0.11	0.14	0.14	0.11	0.11	0.16	0.19	0.39	0.11	0.06	0.39	0.07
Crit Moves:		****			****		****				****	
Green/Cycle:	0.14	0.14	0.14	0.11	0.11	0.30	0.19	0.51	0.51	0.08	0.40	0.40
Volume/Cap:	0.78	0.98	0.98	0.98	0.98	0.53	0.98	0.76	0.22	0.76	0.98	0.18
Delay/Veh:	49.1	81.7	81.7	102.6	103	29.6	70.0	20.7	13.5	66.5	45.1	19.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	49.1	81.7	81.7	102.6	103	29.6	70.0	20.7	13.5	66.5	45.1	19.5
HCM2kAvg:	8	12	12	10	10	6	15	17	3	5	26	2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.907
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 42.2
Optimal Cycle: 119 Level Of Service: D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	2 0	1	1 0	3 0	1	1 0	3 0	1
Volume Module:												
Base Vol:	692	467	55	179	372	189	320	814	362	145	756	84
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	692	467	55	179	372	189	320	814	362	145	756	84
Added Vol:	50	36	13	0	32	0	0	0	18	12	0	0
PasserByVol:	29	0	15	0	0	0	0	-15	27	13	-13	0
Initial Fut:	771	503	83	179	404	189	320	799	407	170	743	84
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	857	559	92	199	449	210	356	888	452	189	826	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	857	559	92	199	449	210	356	888	452	189	826	93
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	857	559	92	199	449	210	356	888	452	189	826	93
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.88	0.90	0.81	0.90	0.90	0.81	0.90	0.87	0.81	0.90	0.87	0.81
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	1.00	3.00	1.00	1.00	3.00	1.00
Final Sat.:	3334	3437	1537	1718	3437	1537	1718	4938	1537	1718	4938	1537
Capacity Analysis Module:												
Vol/Sat:	0.26	0.16	0.06	0.12	0.13	0.14	0.21	0.18	0.29	0.11	0.17	0.06
Crit Moves:	****				****		****				****	
Green/Cycle:	0.28	0.25	0.41	0.18	0.14	0.37	0.23	0.26	0.54	0.16	0.18	0.36
Volume/Cap:	0.91	0.65	0.15	0.65	0.91	0.37	0.91	0.70	0.55	0.70	0.91	0.17
Delay/Veh:	46.8	35.4	18.9	43.2	62.4	23.2	61.7	35.5	15.8	48.0	52.5	21.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	46.8	35.4	18.9	43.2	62.4	23.2	61.7	35.5	15.8	48.0	52.5	21.8
HCM2kAvg:	17	9	2	7	10	5	15	10	9	7	12	2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 1.007
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 54.0
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Ovl				Ovl				Ovl			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	0	1 0	1	0	1	0 2	2	0	2	0 1	1	0	2	0 1
Volume Module:																
Base Vol:	363	176	67	261	84	587	579	1505	251	92	991	151				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	363	176	67	261	84	587	579	1505	251	92	991	151				
Added Vol:	0	4	0	17	4	24	21	0	0	0	0	15				
PasserByVol:	0	0	0	14	0	26	30	-15	0	0	-12	12				
Initial Fut:	363	180	67	292	88	637	630	1490	251	92	979	178				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	403	200	74	324	98	708	700	1656	279	102	1088	198				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	403	200	74	324	98	708	700	1656	279	102	1088	198				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	403	200	74	324	98	708	700	1656	279	102	1088	198				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.92	0.96	0.96	0.95	1.00	0.75	0.92	0.95	0.85	0.95	0.95	0.85				
Lanes:	2.00	0.73	0.27	1.00	1.00	2.00	2.00	2.00	1.00	1.00	2.00	1.00				
Final Sat.:	3502	1328	494	1805	1900	2842	3502	3610	1615	1805	3610	1615				
Capacity Analysis Module:																
Vol/Sat:	0.12	0.15	0.15	0.18	0.05	0.25	0.20	0.46	0.17	0.06	0.30	0.12				
Crit Moves:		****		****				****		****						
Green/Cycle:	0.23	0.15	0.15	0.18	0.10	0.31	0.20	0.46	0.68	0.06	0.31	0.49				
Volume/Cap:	0.51	1.01	1.01	1.01	0.51	0.82	0.98	1.01	0.25	1.01	0.98	0.25				
Delay/Veh:	34.3	98.7	98.7	92.9	44.8	38.1	68.0	51.0	6.2	138.3	56.3	15.2				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	34.3	98.7	98.7	92.9	44.8	38.1	68.0	51.0	6.2	138.3	56.3	15.2				
HCM2kAvg:	6	14	14	16	4	12	16	34	3	7	23	4				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.957
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 27.2
Optimal Cycle: 144 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Ovl				Include				Ignore				Ignore			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1	0	0 2	0	0	0	0 0	2	0	2	0 0	0	0	2	0 1
Volume Module:																
Base Vol:	92	0	431	0	0	0	413	2251	0	0	1439	892				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	92	0	431	0	0	0	413	2251	0	0	1439	892				
Added Vol:	0	0	0	0	0	0	0	48	0	0	36	23				
PasserByVol:	0	0	0	0	0	0	0	15	0	0	0	17				
Initial Fut:	92	0	431	0	0	0	413	2314	0	0	1475	932				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00				
PHF Volume:	102	0	479	0	0	0	459	2571	0	0	1639	0				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	102	0	479	0	0	0	459	2571	0	0	1639	0				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00				
Final Vol.:	102	0	479	0	0	0	459	2571	0	0	1639	0				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.95	1.00	0.75	1.00	1.00	1.00	0.92	0.95	1.00	1.00	0.95	1.00				
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	2.00	2.00	0.00	0.00	2.00	1.00				
Final Sat.:	1809	0	2842	0	0	0	3502	3610	0	0	3610	1900				
Capacity Analysis Module:																
Vol/Sat:	0.06	0.00	0.17	0.00	0.00	0.00	0.13	0.71	0.00	0.00	0.45	0.00				
Crit Moves:			****					****		****						
Green/Cycle:	0.18	0.00	0.18	0.00	0.00	0.00	0.17	0.74	0.00	0.00	0.58	0.00				
Volume/Cap:	0.32	0.00	0.96	0.00	0.00	0.00	0.79	0.96	0.00	0.00	0.79	0.00				
Delay/Veh:	36.6	0.0	70.4	0.0	0.0	0.0	47.0	20.8	0.0	0.0	18.4	0.0				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	36.6	0.0	70.4	0.0	0.0	0.0	47.0	20.8	0.0	0.0	18.4	0.0				
HCM2kAvg:	3	0	11	0	0	0	9	41	0	0	21	0				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.015
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 47.8
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Include				Ovl				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1!	0 0	0	1	0	0 2	2	0	3	0 1	1	0	3	0 1
Volume Module:																
Base Vol:	302	70	45	151	60	443	542	1502	102	114	1586	164				
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Initial Bse:	302	70	45	151	60	443	542	1502	102	114	1586	164				
Added Vol:	0	0	0	0	0	0	0	26	0	0	60	0				
PasserByVol:	0	0	0	0	0	0	0	15	0	0	17	0				
Initial Fut:	302	70	45	151	60	443	542	1543	102	114	1663	164				
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90				
PHF Volume:	336	78	50	168	67	492	602	1714	113	127	1848	182				
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0				
Reduced Vol:	336	78	50	168	67	492	602	1714	113	127	1848	182				
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
Final Vol.:	336	78	50	168	67	492	602	1714	113	127	1848	182				
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900				
Adjustment:	0.93	0.93	0.93	0.95	0.95	0.73	0.88	0.87	0.81	0.90	0.87	0.81				
Lanes:	1.57	0.26	0.17	0.72	0.28	2.00	2.00	3.00	1.00	1.00	3.00	1.00				
Final Sat.:	2772	465	299	1286	511	2786	3334	4938	1537	1718	4938	1537				
Capacity Analysis Module:																
Vol/Sat:	0.12	0.17	0.17	0.13	0.13	0.18	0.18	0.35	0.07	0.07	0.37	0.12				
Crit Moves:		****			****		****				****					
Green/Cycle:	0.16	0.16	0.16	0.13	0.13	0.31	0.18	0.45	0.45	0.10	0.37	0.37				
Volume/Cap:	0.73	1.01	1.01	1.01	1.01	0.58	1.01	0.77	0.16	0.77	1.01	0.32				
Delay/Veh:	44.2	87.7	87.7	106.7	107	30.2	81.8	24.8	16.4	63.8	56.4	22.9				
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00				
AdjDel/Veh:	44.2	87.7	87.7	106.7	107	30.2	81.8	24.8	16.4	63.8	56.4	22.9				
HCM2kAvg:	8	15	15	12	12	7	15	16	2	6	26	4				

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2010 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 1.004
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 51.8
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Ovl				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	2	0	2	0	1	1	0	2	0	1	1	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	769	404		77		130	373		271		297	799		340		128	1043		135	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	769	404		77		130	373		271		297	799		340		128	1043		135	
Added Vol:	60	45		20		0	37		0		0	0		26		18	0		0	
PasserByVol:	36	0		14		0	0		0		0	-15		30		18	-18		0	
Initial Fut:	865	449		111		130	410		271		297	784		396		164	1025		135	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	961	499		123		144	456		301		330	871		440		182	1139		150	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	961	499		123		144	456		301		330	871		440		182	1139		150	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	961	499		123		144	456		301		330	871		440		182	1139		150	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.88	0.90		0.81		0.90	0.90		0.81		0.90	0.87		0.81		0.90	0.87		0.81	
Lanes:	2.00	2.00		1.00		1.00	2.00		1.00		1.00	3.00		1.00		1.00	3.00		1.00	
Final Sat.:	3334	3437		1537		1718	3437		1537		1718	4938		1537		1718	4938		1537	
Capacity Analysis Module:																				
Vol/Sat:	0.29	0.15		0.08		0.08	0.13		0.20		0.19	0.18		0.29		0.11	0.23		0.10	
Crit Moves:	****						****				****						****			
Green/Cycle:	0.29	0.27		0.42		0.15	0.13		0.32		0.19	0.26		0.55		0.16	0.23		0.38	
Volume/Cap:	1.00	0.55		0.19		0.55	1.00		0.61		1.00	0.67		0.52		0.67	1.00		0.25	
Delay/Veh:	65.8	32.3		18.2		41.5	86.7		30.6		91.1	34.4		14.8		46.1	66.3		21.3	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	65.8	32.3		18.2		41.5	86.7		30.6		91.1	34.4		14.8		46.1	66.3		21.3	
HCM2kAvg:	22	7		2		5	12		8		16	9		9		7	18		3	

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Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.008
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 33.5
Optimal Cycle: 180 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	0	1	0	0	2	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	166		6		800	0		0		0	0	2870		601		0	1809		1250	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	166		6		800	0		0		0	0	2870		601		0	1809		1250	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00		0.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.00		0.90	0.90		0.00	
PHF Volume:	184		7		889	0		0		0	0	3189		0		0	2010		0	
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0		0	
Reduced Vol:	184		7		889	0		0		0	0	3189		0		0	2010		0	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00		0.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00		0.00	
Final Vol.:	184		7		889	0		0		0	0	3189		0		0	2010		0	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.85	0.85		0.75		1.00	1.00		1.00		1.00	0.91		1.00		1.00	0.91		1.00	
Lanes:	0.97	0.03		2.00		0.00	0.00		0.00		0.00	3.00		1.00		0.00	3.00		1.00	
Final Sat.:	1559	56		2842		0	0		0		0	5187		1900		0	5187		1900	
Capacity Analysis Module:																				
Vol/Sat:	0.12	0.12		0.31		0.00	0.00		0.00		0.00	0.61		0.00		0.00	0.39		0.00	
Crit Moves:				****								****				****				
Green/Cycle:	0.31	0.31		0.31		0.00	0.00		0.00		0.00	0.61		0.00		0.00	0.61		0.00	
Volume/Cap:	0.38	0.38		1.01		0.00	0.00		0.00		0.00	1.01		0.00		0.00	0.64		0.00	
Delay/Veh:	27.5	27.5		66.8		0.0	0.0		0.0		0.0	37.5		0.0		0.0	12.9		0.0	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	27.5	27.5		66.8		0.0	0.0		0.0		0.0	37.5		0.0		0.0	12.9		0.0	
HCM2kAvg:	5	5		20		0	0		0		0	42		0		0	14		0	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.046
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 51.3
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Include					Include				
Min. Green:	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0
Lanes:	2	0	0	1	0	1	0	1	0	2	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	444		47		36	210		48		533	677	2312		213		105	2082		162	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	444		47		36	210		48		533	677	2312		213		105	2082		162	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	493		52		40	233		53		592	752	2569		237		117	2313		180	
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0		0	
Reduced Vol:	493		52		40	233		53		592	752	2569		237		117	2313		180	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	493		52		40	233		53		592	752	2569		237		117	2313		180	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.90	0.92		0.92		0.93	0.98		0.73		0.88	0.87		0.81		0.90	0.87		0.81	
Lanes:	2.00	0.57		0.43		1.00	1.00		2.00		2.00	3.00		1.00		1.00	3.00		1.00	
Final Sat.:	3432	986		755		1769	1862		2786		3334	4938		1537		1718	4938		1537	
Capacity Analysis Module:																				
Vol/Sat:	0.14	0.05		0.05		0.13	0.03		0.21		0.23	0.52		0.15		0.07	0.47		0.12	
Crit Moves:		****				****					****						****			
Green/Cycle:	0.15	0.05		0.05		0.13	0.03		0.24		0.22	0.59		0.59		0.08	0.45		0.45	
Volume/Cap:	0.98	1.05		1.05		1.05	0.98		0.87		1.05	0.89		0.26		0.89	1.05		0.26	
Delay/Veh:	76.2	157		156.5		116.7	161		47.6		85.6	21.5		10.2		91.8	60.3		17.5	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	76.2	157		156.5		116.7	161		47.6		85.6	21.5		10.2		91.8	60.3		17.5	
HCM2kAvg:	12		6		6	13		4		12	19	26		4		6	34		3	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.897
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 42.8
Optimal Cycle: 115 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	649	540		65	202	438		219	367	1313		416	155	1215		95
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	649	540		65	202	438		219	367	1313		416	155	1215		95
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	721	600		72	224	487		243	408	1459		462	172	1350		106
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	721	600		72	224	487		243	408	1459		462	172	1350		106
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	721	600		72	224	487		243	408	1459		462	172	1350		106
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.88	0.90		0.81	0.90	0.90		0.81	0.88	0.87		0.81	0.90	0.87		0.81
Lanes:	2.00	2.00		1.00	1.00	2.00		1.00	2.00	3.00		1.00	1.00	3.00		1.00
Final Sat.:	3334	3437		1537	1718	3437		1537	3334	4938		1537	1718	4938		1537
Capacity Analysis Module:																
Vol/Sat:	0.22	0.17	0.05		0.13	0.14	0.16		0.12	0.30	0.30		0.10	0.27		0.07
Crit Moves:	****					****				****			****			
Green/Cycle:	0.24	0.23	0.34		0.17	0.16	0.29		0.14	0.33	0.57		0.11	0.30		0.30
Volume/Cap:	0.90	0.76	0.14		0.76	0.90	0.54		0.90	0.90	0.53		0.90	0.90		0.23
Delay/Veh:	49.5	40.6	23.0		50.9	58.8	30.9		62.6	38.9	13.8		81.5	40.8		26.2
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	49.5	40.6	23.0		50.9	58.8	30.9		62.6	38.9	13.8		81.5	40.8		26.2
HCM2kAvg:	15	10	2		9	11	7		10	18	9		9	17		2

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 1.032
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 52.6
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Ovl					Ovl					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	1	0	1	0	1	1	0	0	2	2	0	2	0	1	1	0	2	1	0
Volume Module:																				
Base Vol:	409	199		76	329	95		608	602	1713		276	104	1231		213
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	409	199		76	329	95		608	602	1713		276	104	1231		213
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	454	221		84	366	106		676	669	1903		307	116	1368		237
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	454	221		84	366	106		676	669	1903		307	116	1368		237
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	454	221		84	366	106		676	669	1903		307	116	1368		237
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.91	0.91		0.91	0.96	0.96		0.75	0.92	0.95		0.85	0.95	0.89		0.89
Lanes:	1.80	0.87		0.33	1.55	0.45		2.00	2.00	2.00		1.00	1.00	2.56		0.44
Final Sat.:	3091	1504		574	2839	820		2842	3502	3610		1615	1805	4325		748
Capacity Analysis Module:																
Vol/Sat:	0.15	0.15	0.15		0.13	0.13	0.24		0.19	0.53		0.19	0.06	0.32		0.32
Crit Moves:	****				****					****			****			
Green/Cycle:	0.14	0.14	0.14		0.12	0.12	0.34		0.22	0.51		0.65	0.06	0.36		0.36
Volume/Cap:	1.03	1.03	1.03		1.03	1.03	0.70		0.89	1.03		0.29	1.03	0.89		0.89
Delay/Veh:	84.6	84.6	84.6		94.4	94.4	30.8		50.2	54.2		7.6	140.9	35.9		35.9
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	84.6	84.6	84.6		94.4	94.4	30.8		50.2	54.2		7.6	140.9	35.9		35.9
HCM2kAvg:	13	13	13		13	13	10		14	39		4	8	19		19

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 1.044
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 52.9
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	0	2	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	267	21		692	120	30		57	52	1358		332	752	1166		127
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	267	21		692	120	30		57	52	1358		332	752	1166		127
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	297	23		769	133	33		63	58	1509		369	836	1296		141
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	297	23		769	133	33		63	58	1509		369	836	1296		141
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Final Vol.:	297	23		769	133	33		63	58	1509		369	836	1296		141
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.95	1.00		0.75	0.95	0.90		0.90	0.95	0.85		0.92	0.94	0.94		0.94
Lanes:	1.00	1.00		2.00	1.00	0.34		0.66	1.00	2.00		1.00	2.00	1.80		0.20
Final Sat.:	1805	1900		2842	1805	591		1123	1805	3610		1615	3502	3207		349
Capacity Analysis Module:																
Vol/Sat:	0.16	0.01	0.27		0.07	0.06	0.06		0.03	0.42	0.23		0.24	0.40		0.40
Crit Moves:	****					****				****			****			
Green/Cycle:	0.16	0.06	0.29		0.15	0.05	0.05		0.05	0.40	0.56		0.23	0.58		0.58
Volume/Cap:	1.04	0.19	0.93		0.50	1.04	1.04		0.69	1.04	0.41		1.04	0.69		0.69
Delay/Veh:	107.6	45.2	50.4		40.7	153	153.4		69.3	66.2	13.0		82.6	15.7		15.7
User DelAdj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	107.6	45.2	50.4		40.7	153	153.4		69.3	66.2	13.0		82.6	15.7		15.7
HCM2kAvg:	16	1	16		5	6	6		3	33	7		21	16		16

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.913
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 108 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0	1	0	0	2	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	106		0	677	0	0		0	0	2687		498	0	1892		1058
Growth Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
Initial Bse:	106		0	677	0	0		0	0	2687		498	0	1892		1058
User Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00		0.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90	0.90		0.90
PHF Volume:	118		0	752	0	0		0	0	2986		0	0	2102		0
Reduct Vol:	0		0	0	0	0		0	0	0		0	0	0		0
Reduced Vol:	118		0	752	0	0		0	0	2986		0	0	2102		0
PCE Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		0.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		0.00
Final Vol.:	118		0	752	0	0		0	0	2986		0	0	2102		0
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.95	1.00		0.75	1.00	1.00		1.00	1.00	0.91		1.00	1.00	0.91		1.00
Lanes:	1.00	0.00		2.00	0.00	0.00		0.00	0.00	3.00		1.00	0.00	3.00		1.00
Final Sat.:	1809		0	2842	0	0		0	0	5187		1900	0	5187		1900
Capacity Analysis Module:																
Vol/Sat:	0.07	0.00		0.26	0.00	0.00		0.00	0.00	0.58		0.00	0.00	0.41		0.00
Crit Moves:	****			****						****			****			
Green/Cycle:	0.29	0.00		0.29	0.00	0.00		0.00	0.00	0.63		0.00	0.00	0.63		0.00
Volume/Cap:	0.22	0.00		0.91	0.00	0.00		0.00	0.00	0.91		0.00	0.00	0.64		0.00
Delay/Veh:	27.2	0.0		48.8	0.0	0.0		0.0	0.0	20.6		0.0	0.0	11.9		0.0
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	27.2	0.0		48.8	0.0	0.0		0.0	0.0	20.6		0.0	0.0	11.9		0.0
HCM2kAvg:	3		0	15	0	0		0	0	31		0	0	14		0

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.027
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 51.0
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	0	1	0	1	0	1	0	2	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	519	79		51	222	67	549		652	1994	166		129	1882		230
Growth Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	519	79		51	222	67	549		652	1994	166		129	1882		230
User Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90
PHF Volume:	577	88		57	247	74	610		724	2216	184		143	2091		256
Reduct Vol:	0	0		0	0	0	0		0	0	0		0	0		0
Reduced Vol:	577	88		57	247	74	610		724	2216	184		143	2091		256
PCE Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	577	88		57	247	74	610		724	2216	184		143	2091		256
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900	1900		1900	1900	1900		1900	1900		1900
Adjustment:	0.90	0.92		0.92	0.93	0.98	0.73		0.88	0.87	0.81		0.90	0.87		0.81
Lanes:	2.00	0.61		0.39	1.00	1.00	2.00		2.00	3.00	1.00		1.00	3.00		1.00
Final Sat.:	3432	1065		687	1769	1862	2786		3334	4938	1537		1718	4938		1537
Capacity Analysis Module:																				
Vol/Sat:	0.17	0.08		0.08	0.14	0.04	0.22		0.22	0.45	0.12		0.08	0.42		0.17
Crit Moves:		****			****				****					****		
Green/Cycle:	0.17	0.08		0.08	0.14	0.04	0.25		0.21	0.53	0.53		0.10	0.41		0.41
Volume/Cap:	0.96	1.03		1.03	1.03	0.96	0.87		1.03	0.85	0.23		0.85	1.03		0.40
Delay/Veh:	68.6	129		129.2	108.4	137	46.6		80.4	23.3	12.9		76.4	56.6		21.1
User DelAdj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	68.6	129		129.2	108.4	137	46.6		80.4	23.3	12.9		76.4	56.6		21.1
HCM2kAvg:	14	9		9	13	5	12		18	22	3		7	30		6

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.949
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 44.3
Optimal Cycle: 140 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Ovl					Ovl					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	2	0	1	1	0	2	0	1	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	642	468		87	147	433	310		339	1227	351		145	1466		152
Growth Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	642	468		87	147	433	310		339	1227	351		145	1466		152
User Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90
PHF Volume:	713	520		97	163	481	344		377	1363	390		161	1629		169
Reduct Vol:	0	0		0	0	0	0		0	0	0		0	0		0
Reduced Vol:	713	520		97	163	481	344		377	1363	390		161	1629		169
PCE Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	713	520		97	163	481	344		377	1363	390		161	1629		169
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900	1900		1900	1900	1900		1900	1900		1900
Adjustment:	0.88	0.90		0.81	0.90	0.90	0.81		0.88	0.87	0.81		0.90	0.87		0.81
Lanes:	2.00	2.00		1.00	1.00	2.00	1.00		2.00	3.00	1.00		1.00	3.00		1.00
Final Sat.:	3334	3437		1537	1718	3437	1537		3334	4938	1537		1718	4938		1537
Capacity Analysis Module:																				
Vol/Sat:	0.21	0.15		0.06	0.10	0.14	0.22		0.11	0.28	0.25		0.09	0.33		0.11
Crit Moves:	****					****			****					****		
Green/Cycle:	0.23	0.23		0.35	0.14	0.15	0.27		0.12	0.35	0.57		0.12	0.35		0.35
Volume/Cap:	0.95	0.66		0.18	0.66	0.95	0.84		0.95	0.79	0.44		0.79	0.95		0.32
Delay/Veh:	59.3	37.1		22.9	46.9	69.7	49.0		75.9	31.9	12.5		61.7	43.5		24.2
User DelAdj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	59.3	37.1		22.9	46.9	69.7	49.0		75.9	31.9	12.5		61.7	43.5		24.2
HCM2kAvg:	16	8		2	6	11	13		10	15	7		7	21		4

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 No Project SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.945
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 43.7
Optimal Cycle: 138 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Ovl					Ovl					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	1	0	1	0	1	1	0	0	2	2	0	2	0	1	1	0	2	1	0
Volume Module:																				
Base Vol:	450	374		60	235	116	597		649	973	167		65	919		393
Growth Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Initial Bse:	450	374		60	235	116	597		649	973	167		65	919		393
User Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
PHF Adj:	0.90	0.90		0.90	0.90	0.90	0.90		0.90	0.90	0.90		0.90	0.90		0.90
PHF Volume:	500	416		67	261	129	663		721	1081	186		72	1021		437
Reduct Vol:	0	0		0	0	0	0		0	0	0		0	0		0
Reduced Vol:	500	416		67	261	129	663		721	1081	186		72	1021		437
PCE Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
MLF Adj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
Final Vol.:	500	416		67	261	129	663		721	1081	186		72	1021		437
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900	1900	1900	1900		1900	1900	1900		1900	1900		1900
Adjustment:	0.92	0.92		0.92	0.97	0.97	0.75		0.92	0.95	0.85		0.95	0.87		0.87
Lanes:	1.53	1.27		0.20	1.34	0.66	2.00		2.00	2.00	1.00		1.00	2.10		0.90
Final Sat.:	2661	2211		355	2463	1216	2842		3502	3610	1615		1805	3470		1484
Capacity Analysis Module:																				
Vol/Sat:	0.19	0.19		0.19	0.11	0.11	0.23		0.21	0.30	0.11		0.04	0.29		0.29
Crit Moves:	****					****			****					****		
Green/Cycle:	0.20	0.20		0.20	0.11	0.11	0.33		0.22	0.47	0.67		0.06	0.31		0.31
Volume/Cap:	0.95	0.95		0.95	0.95	0.95	0.71		0.95	0.64	0.17		0.64	0.95		0.95
Delay/Veh:	55.9	55.9		55.9	74.8	74.8	31.8		58.9	21.1	6.4		57.7	45.9		45.9
User DelAdj:	1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	55.9	55.9		55.9	74.8	74.8	31.8		58.9	21.1	6.4		57.7	45.9		45.9
HCM2kAvg:	15	15		15	10	10	10		16	13	2		3	19		19

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 1.021
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 35.6
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	1	0	0	2	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	166		6		800	0		0		0	0	2870		601		0	1809		1250	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	166		6		800	0		0		0	0	2870		601		0	1809		1250	
Added Vol:	0		0		0	0		0		0	0	44		0		0	29		21	
PasserByVol:	0		0		0	0		0		0	0	12		0		0	0		16	
Initial Fut:	166		6		800	0		0		0	0	2926		601		0	1838		1287	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00		0.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.00		0.90	0.90		0.00	
PHF Volume:	184		7		889	0		0		0	0	3251		0		0	2042		0	
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0		0	
Reduced Vol:	184		7		889	0		0		0	0	3251		0		0	2042		0	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00		0.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		0.00		1.00	1.00		0.00	
Final Vol.:	184		7		889	0		0		0	0	3251		0		0	2042		0	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.85	0.85		0.75		1.00	1.00		1.00		1.00	0.91		1.00		1.00	0.91		1.00	
Lanes:	0.97	0.03		2.00		0.00	0.00		0.00		0.00	3.00		1.00		0.00	3.00		1.00	
Final Sat.:	1559		56		2842	0		0		0	0	5187		1900		0	5187		1900	
Capacity Analysis Module:																				
Vol/Sat:	0.12	0.12		0.31		0.00	0.00		0.00		0.00	0.63		0.00		0.00	0.39		0.00	
Crit Moves:				****								****				****				
Green/Cycle:	0.31	0.31		0.31		0.00	0.00		0.00		0.00	0.61		0.00		0.00	0.61		0.00	
Volume/Cap:	0.39	0.39		1.02		0.00	0.00		0.00		0.00	1.02		0.00		0.00	0.64		0.00	
Delay/Veh:	27.8	27.8		70.7		0.0	0.0		0.0		0.0	40.9		0.0		0.0	12.8		0.0	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	27.8	27.8		70.7		0.0	0.0		0.0		0.0	40.9		0.0		0.0	12.8		0.0	
HCM2kAvg:	6		6		20	0		0		0	0	43		0		0	14		0	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.064
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 51.8
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	1	0	1	1	0	1	0	2	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	335		47		36	210		48		533	677	2312		213		105	2191		162	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	335		47		36	210		48		533	677	2312		213		105	2191		162	
Added Vol:	0		0		0	0		0		0	0	18		0		0	50		0	
PasserByVol:	0		0		0	0		0		0	0	12		0		0	16		0	
Initial Fut:	335		47		36	210		48		533	677	2342		213		105	2257		162	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	372		52		40	233		53		592	752	2602		237		117	2508		180	
Reduct Vol:	0		0		0	0		0		0	0	0		0		0	0		0	
Reduced Vol:	372		52		40	233		53		592	752	2602		237		117	2508		180	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	372		52		40	233		53		592	752	2602		237		117	2508		180	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.90	0.98		0.83		0.93	0.98		0.73		0.88	0.87		0.81		0.90	0.87		0.81	
Lanes:	2.00	1.00		1.00		1.00	1.00		2.00		2.00	3.00		1.00		1.00	3.00		1.00	
Final Sat.:	3432	1862		1583		1769	1862		2786		3334	4938		1537		1718	4938		1537	
Capacity Analysis Module:																				
Vol/Sat:	0.11	0.03		0.03		0.13	0.03		0.21		0.23	0.53		0.15		0.07	0.51		0.12	
Crit Moves:	****			****		****			****		****						****			
Green/Cycle:	0.12	0.03		0.03		0.12	0.03		0.24		0.21	0.61		0.61		0.08	0.48		0.48	
Volume/Cap:	0.91	1.06		0.96		1.06	0.91		0.87		1.06	0.86		0.25		0.86	1.06		0.25	
Delay/Veh:	67.8	196		171.4		122.4	134		48.3		91.4	18.8		9.1		85.2	64.3		15.6	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	67.8	196		171.4		122.4	134		48.3		91.4	18.8		9.1		85.2	64.3		15.6	
HCM2kAvg:	9		4		3	13		4		12	20	25		3		6	37		3	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.889
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 41.8
Optimal Cycle: 112 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	3	0	2	0	1	1	0	2	0	1	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	758	540		65		202	438		219		367	1313		416		155	1215		95	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	758	540		65		202	438		219		367	1313		416		155	1215		95	
Added Vol:	50	36		13		0	32		0		0	0		18		12	0		0	
PasserByVol:	29	0		15		0	0		0		0	-15		27		13	-13		0	
Initial Fut:	837	576		93		202	470		219		367	1298		461		180	1202		95	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	930	640		103		224	522		243		408	1442		512		200	1336		106	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	930	640		103		224	522		243		408	1442		512		200	1336		106	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	930	640		103		224	522		243		408	1442		512		200	1336		106	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.88	0.90		0.81		0.90	0.90		0.81		0.88	0.87		0.81		0.90	0.87		0.81	
Lanes:	3.00	2.00		1.00		1.00	2.00		1.00		2.00	3.00		1.00		1.00	3.00		1.00	
Final Sat.:	5000	3437		1537		1718	3437		1537		3334	4938		1537		1718	4938		1537	
Capacity Analysis Module:																				
Vol/Sat:	0.19	0.19		0.07		0.13	0.15		0.16		0.12	0.29		0.33		0.12	0.27		0.07	
Crit Moves:	****						****				****					****				
Green/Cycle:	0.21	0.22		0.22		0.16	0.17		0.31		0.14	0.33		0.54		0.13	0.32		0.47	
Volume/Cap:	0.89	0.83		0.30		0.83	0.89		0.50		0.85	0.89		0.62		0.89	0.85		0.15	
Delay/Veh:	47.9	44.8		32.8		60.3	55.9		28.8		55.8	38.3		17.4		74.7	36.8		15.0	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	47.9	44.8		32.8		60.3	55.9		28.8		55.8	38.3		17.4		74.7	36.8		15.0	
HCM2kAvg:	13	12		3		10	11		6		9	18		11		9	16		2	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 Plus Prj PM Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 1.040
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 52.3
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Ovl					Ovl					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	1	0	1	0	1	1	0	0	2	2	0	2	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	409	199		76		329	95		608		602	1713		276		104	1231		213	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	409	199		76		329	95		608		602	1713		276		104	1231		213	
Added Vol:	0	4		0		17	4		24		21	0		0		0	0		15	
PasserByVol:	0	0		0		14	0		26		30	-15		0		0	-12		12	
Initial Fut:	409	203		76		360	99		658		653	1698		276		104	1219		240	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	454	226		84		400	110		731		726	1887		307		116	1354		267	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	454	226		84		400	110		731		726	1887		307		116	1354		267	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	454	226		84		400	110		731		726	1887		307		116	1354		267	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.91	0.91		0.91		0.96	0.96		0.75		0.92	0.95		0.85		0.95	0.91		0.85	
Lanes:	1.78	0.89		0.33		1.57	0.43		2.00		2.00	2.00		1.00		1.00	3.00		1.00	
Final Sat.:	3076	1527		572		2867	788		2842		3502	3610		1615		1805	5187		1615	
Capacity Analysis Module:																				
Vol/Sat:	0.15	0.15		0.15		0.14	0.14		0.26		0.21	0.52		0.19		0.06	0.26		0.17	
Crit Moves:		****				****						****				****				
Green/Cycle:	0.14	0.14		0.14		0.13	0.13		0.38		0.25	0.50		0.64		0.06	0.31		0.31	
Volume/Cap:	1.04	1.04		1.04		1.04	1.04		0.67		0.83	1.04		0.29		1.04	0.83		0.53	
Delay/Veh:	87.0	87.0		87.0		94.8	94.8		27.2		42.3	57.4		8.0		143.6	35.6		29.2	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	87.0	87.0		87.0		94.8	94.8		27.2		42.3	57.4		8.0		143.6	35.6		29.2	
HCM2kAvg:	14	14		14		14	14		10		14	40		4		8	15		7	

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
Mitigated 2018 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 E. 20th Street / Whitman Road

Cycle (sec): 100 Critical Vol./Cap. (X): 1.053
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 54.5
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Ovl					Include					Ovl					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	1	0	1	0	2	1	0	0	1	0	1	0	2	0	1	2	0	1	1	0
Volume Module:																				
Base Vol:	267	21	692	120	30	57	52	1358	332	752	1166	127								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	267	21	692	120	30	57	52	1358	332	752	1166	127								
Added Vol:	0	0	1	6	0	0	0	23	0	1	27	8								
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	267	21	693	126	30	57	52	1381	332	753	1193	135								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	297	23	770	140	33	63	58	1534	369	837	1326	150								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	297	23	770	140	33	63	58	1534	369	837	1326	150								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	297	23	770	140	33	63	58	1534	369	837	1326	150								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	1.00	0.75	0.95	0.90	0.90	0.95	0.95	0.85	0.92	0.94	0.94								
Lanes:	1.00	1.00	2.00	1.00	0.34	0.66	1.00	2.00	1.00	2.00	1.80	0.20								
Final Sat.:	1805	1900	2842	1805	591	1123	1805	3610	1615	3502	3194	361								
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.01	0.27	0.08	0.06	0.06	0.03	0.43	0.23	0.24	0.41	0.41								
Crit Moves:	****			****				****		****										
Green/Cycle:	0.16	0.06	0.29	0.15	0.05	0.05	0.05	0.40	0.56	0.23	0.59	0.59								
Volume/Cap:	1.05	0.20	0.94	0.52	1.05	1.05	0.71	1.05	0.41	1.05	0.71	0.71								
Delay/Veh:	110.5	45.5	53.3	41.2	156	156.5	72.1	68.8	12.9	85.5	15.9	15.9								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	110.5	45.5	53.3	41.2	156	156.5	72.1	68.8	12.9	85.5	15.9	15.9								
HCM2kAvg:	16	1	16	5	6	6	3	34	7	21	17	17								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 E. 20th Street / NB SR-99 Ramps

Cycle (sec): 100 Critical Vol./Cap. (X): 0.928
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 22.0
Optimal Cycle: 118 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Ovl					Include					Ignore					Ignore				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	0	1	0	0	2	0	0	0	0	0	0	0	3	0	1	0	0	3	0	1
Volume Module:																				
Base Vol:	106	0	677	0	0	0	0	2687	498	0	1892	1058								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	106	0	677	0	0	0	0	2687	498	0	1892	1058								
Added Vol:	0	0	0	0	0	0	0	48	0	0	36	23								
PasserByVol:	0	0	0	0	0	0	0	15	0	0	0	17								
Initial Fut:	106	0	677	0	0	0	0	2750	498	0	1928	1098								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.00								
PHF Volume:	118	0	752	0	0	0	0	3056	0	0	2142	0								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	118	0	752	0	0	0	0	3056	0	0	2142	0								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00								
Final Vol.:	118	0	752	0	0	0	0	3056	0	0	2142	0								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.95	1.00	0.75	1.00	1.00	1.00	1.00	0.91	1.00	1.00	0.91	1.00								
Lanes:	1.00	0.00	2.00	0.00	0.00	0.00	0.00	3.00	1.00	0.00	3.00	1.00								
Final Sat.:	1809	0	2842	0	0	0	0	5187	1900	0	5187	1900								
Capacity Analysis Module:																				
Vol/Sat:	0.07	0.00	0.26	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.41	0.00								
Crit Moves:			****					****		****										
Green/Cycle:	0.29	0.00	0.29	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.63	0.00								
Volume/Cap:	0.23	0.00	0.93	0.00	0.00	0.00	0.00	0.93	0.00	0.00	0.65	0.00								
Delay/Veh:	27.6	0.0	51.4	0.0	0.0	0.0	0.0	21.6	0.0	0.0	11.8	0.0								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	27.6	0.0	51.4	0.0	0.0	0.0	0.0	21.6	0.0	0.0	11.8	0.0								
HCM2kAvg:	3	0	15	0	0	0	0	33	0	0	14	0								

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Mitigated 2018 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #5 E. 20th Street / Chico Mall Access

Cycle (sec): 100 Critical Vol./Cap. (X): 1.051
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 51.0
Optimal Cycle: 180 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Include					Include				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	1	0	1	1	0	1	0	2	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	348	79	51	222	67	549	652	1994	166	129	2053	230								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	348	79	51	222	67	549	652	1994	166	129	2053	230								
Added Vol:	0	0	0	0	0	0	0	26	0	0	60	0								
PasserByVol:	0	0	0	0	0	0	0	15	0	0	17	0								
Initial Fut:	348	79	51	222	67	549	652	2035	166	129	2130	230								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	387	88	57	247	74	610	724	2261	184	143	2367	256								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	387	88	57	247	74	610	724	2261	184	143	2367	256								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	387	88	57	247	74	610	724	2261	184	143	2367	256								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.90	0.98	0.83	0.93	0.98	0.73	0.88	0.87	0.81	0.90	0.87	0.81								
Lanes:	2.00	1.00	1.00	1.00	1.00	2.00	2.00	3.00	1.00	1.00	3.00	1.00								
Final Sat.:	3432	1862	1583	1769	1862	2786	3334	4938	1537	1718	4938	1537								
Capacity Analysis Module:																				
Vol/Sat:	0.11	0.05	0.04	0.14	0.04	0.22	0.22	0.46	0.12	0.08	0.48	0.17								
Crit Moves:		****		****			****				****									
Green/Cycle:	0.13	0.04	0.04	0.13	0.05	0.25	0.21	0.56	0.56	0.10	0.46	0.46								
Volume/Cap:	0.86	1.05	0.80	1.05	0.86	0.86	1.05	0.82	0.21	0.82	1.05	0.36								
Delay/Veh:	57.9	161	92.7	116.3	101	46.6	88.2	19.8	11.1	68.9	61.4	18.1								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	57.9	161	92.7	116.3	101	46.6	88.2	19.8	11.1	68.9	61.4	18.1								
HCM2kAvg:	9	6	3	14	4	12	19	21	3	7	35	5								

Chico Wal-Mart South TIS, 25-5130-10, Comp. #782
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 E. 20th Street / Forest Avenue

Cycle (sec): 100 Critical Vol./Cap. (X): 0.944
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 44.4
Optimal Cycle: 137 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Protected					Protected					Protected				
Rights:	Include					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	3	0	2	0	1	1	0	2	0	1	2	0	3	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	813	468	87	147	433	310	339	1227	351	145	1466	152								
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Initial Bse:	813	468	87	147	433	310	339	1227	351	145	1466	152								
Added Vol:	60	45	20	0	37	0	0	0	26	18	0	0								
PasserByVol:	36	0	14	0	0	0	0	-15	30	18	-18	0								
Initial Fut:	909	513	121	147	470	310	339	1212	407	181	1448	152								
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	1010	570	134	163	522	344	377	1347	452	201	1609	169								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Reduced Vol:	1010	570	134	163	522	344	377	1347	452	201	1609	169								
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
Final Vol.:	1010	570	134	163	522	344	377	1347	452	201	1609	169								
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900								
Adjustment:	0.88	0.90	0.81	0.90	0.90	0.81	0.88	0.87	0.81	0.90	0.87	0.81								
Lanes:	3.00	2.00	1.00	1.00	2.00	1.00	2.00	3.00	1.00	1.00	3.00	1.00								
Final Sat.:	5000	3437	1537	1718	3437	1537	3334	4938	1537	1718	4938	1537								
Capacity Analysis Module:																				
Vol/Sat:	0.20	0.17	0.09	0.10	0.15	0.22	0.11	0.27	0.29	0.12	0.33	0.11								
Crit Moves:	****				****		****				****									
Green/Cycle:	0.21	0.24	0.24	0.14	0.16	0.28	0.12	0.33	0.54	0.14	0.35	0.48								
Volume/Cap:	0.94	0.70	0.37	0.70	0.94	0.80	0.94	0.84	0.55	0.84	0.94	0.23								
Delay/Veh:	54.5	37.4	32.4	50.0	66.5	43.4	74.6	35.4	15.8	64.0	43.0	15.2								
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00								
AdjDel/Veh:	54.5	37.4	32.4	50.0	66.5	43.4	74.6	35.4	15.8	64.0	43.0	15.2								
HCM2kAvg:	15	9	4	6	12	12	10	15	9	9	21	3								

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Mitigated 2018 Plus Prj SAT Peak Hour Conditions

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #19 Skyway / Notre Dame Boulevard

Cycle (sec): 100 Critical Vol./Cap. (X): 0.984
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 46.8
Optimal Cycle: 164 Level Of Service: D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Split Phase					Split Phase					Protected					Protected				
Rights:	Include					Ovl					Ovl					Include				
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	0	0	0		0
Lanes:	1	1	0	1	0	1	1	0	0	2	2	0	2	0	1	1	0	3	0	1
Volume Module:																				
Base Vol:	450	374		60		235	116		597		649	973		167		65	919		393	
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Initial Bse:	450	374		60		235	116		597		649	973		167		65	919		393	
Added Vol:	0	6		0		22	7		28		23	0		0		0	0		18	
PasserByVol:	0	0		0		14	0		34		32	-14		0		0	-18		18	
Initial Fut:	450	380		60		271	123		659		704	959		167		65	901		429	
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
PHF Adj:	0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90		0.90	0.90		0.90	
PHF Volume:	500	422		67		301	137		732		782	1066		186		72	1001		477	
Reduct Vol:	0	0		0		0	0		0		0	0		0		0	0		0	
Reduced Vol:	500	422		67		301	137		732		782	1066		186		72	1001		477	
PCE Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
MLF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
Final Vol.:	500	422		67		301	137		732		782	1066		186		72	1001		477	
Saturation Flow Module:																				
Sat/Lane:	1900	1900		1900		1900	1900		1900		1900	1900		1900		1900	1900		1900	
Adjustment:	0.92	0.92		0.92		0.97	0.97		0.75		0.92	0.95		0.85		0.95	0.91		0.85	
Lanes:	1.52	1.28		0.20		1.38	0.62		2.00		2.00	2.00		1.00		1.00	3.00		1.00	
Final Sat.:	2643	2232		352		2527	1147		2842		3502	3610		1615		1805	5187		1615	
Capacity Analysis Module:																				
Vol/Sat:	0.19	0.19		0.19		0.12	0.12		0.26		0.22	0.30		0.11		0.04	0.19		0.30	
Crit Moves:				****			****				****								****	
Green/Cycle:	0.19	0.19		0.19		0.12	0.12		0.35		0.23	0.46		0.66		0.06	0.30		0.30	
Volume/Cap:	0.98	0.98		0.98		0.98	0.98		0.74		0.98	0.64		0.18		0.64	0.64		0.98	
Delay/Veh:	64.8	64.8		64.8		82.3	82.3		31.7		66.4	21.2		6.8		57.1	31.3		71.5	
User DelAdj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00		1.00	1.00		1.00	
AdjDel/Veh:	64.8	64.8		64.8		82.3	82.3		31.7		66.4	21.2		6.8		57.1	31.3		71.5	
HCM2kAvg:	16	16		16		11	11		11		18	13		2		3	10		20	

SR 99
Mainline Analysis

Existing AM

Existing PM

Existing SAT

Short Term No Project AM

Short Term No Project PM

Short Term No Project SAT

Short Term Plus Project AM

Short Term Plus Project PM

Short Term Plus Project SAT

Cumulative No Project AM

Cumulative No Project PM

Cumulative No Project SAT

Cumulative Plus Project AM

Cumulative Plus Project PM

Cumulative Plus Project SAT

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2375	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	660	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1385	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1385	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.3	pc/mi/ln

Level of service, LOS C

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

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Phone: Fax:
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3362	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	934	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1961	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1961	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.1	mi/h
Number of lanes, N	2	
Density, D	31.6	pc/mi/ln

Level of service, LOS D

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2393	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	665	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1396	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1396	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

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Phone: Fax:
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2551	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	709	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1488	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1488	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2264	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	629	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1321	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1321	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	1564	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	434	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	912	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	912	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	14.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	1912	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	531	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1115	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1115	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2606	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	724	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1520	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1520	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	23.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	1886	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	524	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1100	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1100	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.9	pc/mi/ln

Level of service, LOS B

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2391	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	664	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1395	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1395	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.5	pc/mi/ln

Level of service, LOS C

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2057	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	571	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1200	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1200	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.5	pc/mi/ln

Level of service, LOS C

Overall results are not computed when free-flow speed is less than 55 mph.

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	1425	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	396	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	831	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	831	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	12.8	pc/mi/ln

Level of service, LOS B

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2673	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	743	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1040	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1040	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.0	pc/mi/ln

Level of service, LOS B

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3927	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1091	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1527	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1527	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	23.5	pc/mi/ln

Level of service, LOS C

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2889	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	803	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1124	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1124	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2988	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	830	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1162	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1162	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2780	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	772	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1081	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1081	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2019	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	561	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	785	pc/h/ln

Speed Inputs and Adjustments

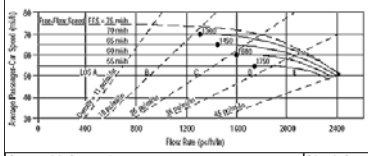
Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	785	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	12.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 NB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	AM Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs			
Volume, V	2256 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

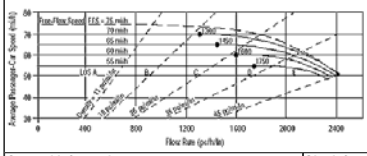
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	2		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1316	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	65.0	mi/h	S
D = v_p / S	20.2	pc/mi/ln	D = v_p / S
LOS	C		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 NB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	PM Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs			
Volume, V	3263 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

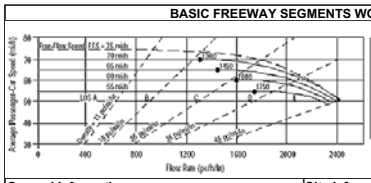
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	2		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1903	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	62.9	mi/h	S
D = v_p / S	30.3	pc/mi/ln	D = v_p / S
LOS	D		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 NB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	SAT Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs			
Volume, V	2455 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

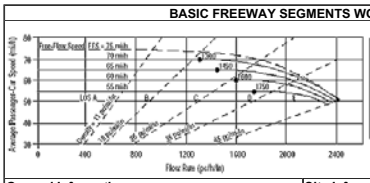
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	2		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1432	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	65.0	mi/h	S
D = v_p / S	22.0	pc/mi/ln	D = v_p / S
LOS	C		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 SB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	AM Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs			
Volume, V	2897 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

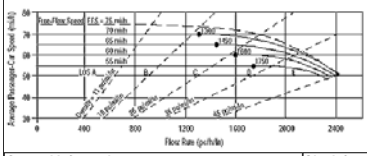
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	2		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1690	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	64.6	mi/h	S
D = v_p / S	26.2	pc/mi/ln	D = v_p / S
LOS	D		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 SB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	PM Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs				
Volume, V	2613 veh/h		Peak-Hour Factor, PHF	0.90
AADT	veh/day		%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K			%RVs, P_R	0
Peak-Hr Direction Prop, D			General Terrain:	Level
DDHV = AADT x K x D	veh/h		Grade % Length	mi
Driver type adjustment	1.00		Up/Down %	

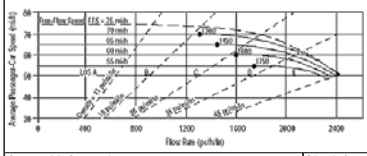
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	2		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
$v_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$	1524	pc/h/ln	Design LOS $v_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$
S	65.0	mi/h	S
$D = v_p / S$	23.5	pc/mi/ln	$D = v_p / S$
LOS	C		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 SB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	SAT Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs				
Volume, V	1926 veh/h		Peak-Hour Factor, PHF	0.90
AADT	veh/day		%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K			%RVs, P_R	0
Peak-Hr Direction Prop, D			General Terrain:	Level
DDHV = AADT x K x D	veh/h		Grade % Length	mi
Driver type adjustment	1.00		Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	2		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
$v_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$	1124	pc/h/ln	Design LOS $v_p = (V \text{ or DDHV}) / (PHF \times N \times f_{HV} \times f_p)$
S	65.0	mi/h	S
$D = v_p / S$	17.3	pc/mi/ln	$D = v_p / S$
LOS	B		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex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_________________________Operational Analysis_____________________________

Analyst:                KV
Agency or Company:      Omni-Means
Date Performed:
Analysis Time Period:   AM Peak Hour Period
Freeway/Direction:      99 NB
From/To:                North of 20th Street I/C
Jurisdiction:           Butte County
Analysis Year:          2010 Plus Project
Description:  Chico WalMart

_________________________Flow Inputs and Adjustments_____________________

Volume, V                               2705            veh/h
Peak-hour factor, PHF                   0.90
Peak 15-min volume, v15                 751             v
Trucks and buses                        10              %
Recreational vehicles                   0               %
Terrain type:                           Level
    Grade                               0.00            %
    Segment length                      0.00            mi
Trucks and buses PCE, ET                1.5
Recreational vehicle PCE, ER            1.2
Heavy vehicle adjustment, fHV           0.952
Driver population factor, fp            1.00
Flow rate, vp                           1052            pc/h/ln

_________________________Speed Inputs and Adjustments____________________

Lane width                              12.0            ft
Right-shoulder lateral clearance        6.0             ft
Interchange density                     0.50            interchange/mi
Number of lanes, N                      3
Free-flow speed:                        Measured
     FFS or BFFS                        65.0            mi/h
Lane width adjustment, fLW              0.0             mi/h
Lateral clearance adjustment, fLC       0.0             mi/h
Interchange density adjustment, fID     0.0             mi/h
Number of lanes adjustment, fN          3.0             mi/h
Free-flow speed, FFS                    65.0            mi/h
                                        Urban Freeway

_________________________LOS and Performance Measures____________________

Flow rate, vp                           1052            pc/h/ln
Free-flow speed, FFS                    65.0            mi/h
Average passenger-car speed, S          65.0            mi/h
Number of lanes, N                      3
Density, D                              16.2            pc/mi/ln
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Level of service, LOS                       B

  Overall results are not computed when free-flow speed is less than 55 mph.
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3964	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1101	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1542	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1542	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2929	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	814	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1139	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1139	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Analyst:	KV
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Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3018	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	838	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1174	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1174	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Analyst:	KV
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Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2831	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	786	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1101	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1101	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2084	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	579	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	810	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	810	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	12.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Analyst:	KV
Agency or Company:	Omni-Means
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Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2256	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	627	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1316	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1316	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3263	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	906	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1903	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1903	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	2	
Density, D	30.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
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Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2455	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	682	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1432	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1432	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2897	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	805	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1690	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1690	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.6	mi/h
Number of lanes, N	2	
Density, D	26.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2613	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	726	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1524	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1524	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	23.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Engineering Services

Phone: Fax:
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	1926	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	535	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1124	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1124	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.3	pc/mi/ln

Level of service, LOS B

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3254	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	904	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1265	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1265	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	19.5	pc/mi/ln

Level of service, LOS C

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	4877	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1355	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1897	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1897	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	3	
Density, D	30.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3645	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1013	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1418	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1418	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3733	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1037	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1452	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1452	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3535	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	982	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1375	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1375	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2621	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	728	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1019	pc/h/ln

Speed Inputs and Adjustments

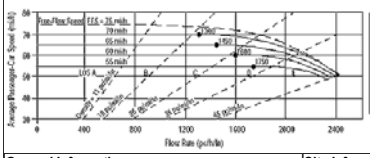
Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1019	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	15.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 NB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	AM Peak Hour Period	Analysis Year	2018 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs			
Volume, V	2860 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

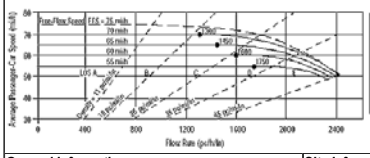
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	3		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1112	pc/h/ln	Design LOS
S	65.0	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	17.1	pc/mi/ln	S
LOS	B		D = v_p / S
			Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 NB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	PM Peak Hour Period	Analysis Year	2018 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs			
Volume, V	4287 veh/h	Peak-Hour Factor, PHF	0.90
AADT	veh/day	%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K		%RVs, P_R	0
Peak-Hr Direction Prop, D		General Terrain:	Level
DDHV = AADT x K x D	veh/h	Grade % Length	mi
Driver type adjustment	1.00	Up/Down %	

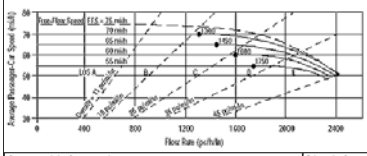
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	3		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1667	pc/h/ln	Design LOS
S	64.7	mi/h	v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
D = v_p / S	25.8	pc/mi/ln	S
LOS	C		D = v_p / S
			Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 NB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	SAT Peak Hour Period	Analysis Year	2018 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs				
Volume, V	3273 veh/h		Peak-Hour Factor, PHF	0.90
AADT	veh/day		%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K			%RVs, P_R	0
Peak-Hr Direction Prop, D			General Terrain:	Level
DDHV = AADT x K x D	veh/h		Grade % Length	mi
Driver type adjustment	1.00		Up/Down %	

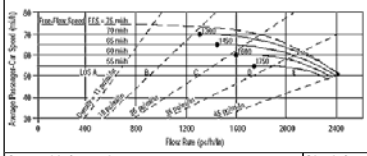
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	3		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1273	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	65.0	mi/h	S
D = v_p / S	19.6	pc/mi/ln	D = v_p / S
LOS	C		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 SB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	AM Peak Hour Period	Analysis Year	2018 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs				
Volume, V	3766 veh/h		Peak-Hour Factor, PHF	0.90
AADT	veh/day		%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K			%RVs, P_R	0
Peak-Hr Direction Prop, D			General Terrain:	Level
DDHV = AADT x K x D	veh/h		Grade % Length	mi
Driver type adjustment	1.00		Up/Down %	

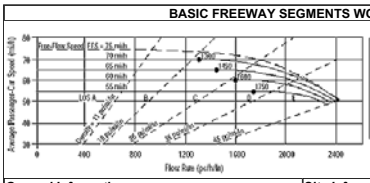
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	3		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1465	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	65.0	mi/h	S
D = v_p / S	22.5	pc/mi/ln	D = v_p / S
LOS	C		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 SB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	PM Peak Hour Period	Analysis Year	2018 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs				
Volume, V	3458 veh/h		Peak-Hour Factor, PHF	0.90
AADT	veh/day		%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K			%RVs, P_R	0
Peak-Hr Direction Prop, D			General Terrain:	Level
DDHV = AADT x K x D	veh/h		Grade % Length	mi
Driver type adjustment	1.00		Up/Down %	

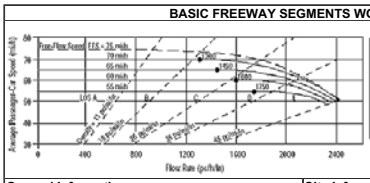
Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	3		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1345	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	65.0	mi/h	S
D = v_p / S	20.7	pc/mi/ln	D = v_p / S
LOS	C		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

BASIC FREEWAY SEGMENTS WORKSHEET



Application	Input
Operational (LOS)	FFS, N, v_p
Design (N)	FFS, LOS, v_p
Design (v_p)	FFS, LOS, N
Planning (LOS)	FFS, N, AADT
Planning (N)	FFS, LOS, AADT
Planning (v_p)	FFS, LOS, N

General Information		Site Information	
Analyst	KV	Highway/Direction of Travel	99 SB
Agency or Company	Omni-Means	From/To	North of Skyway In
Date Performed		Jurisdiction	Butte County
Analysis Time Period	SAT Peak Hour Period	Analysis Year	2018 No Project

Project Description Chico WalMart

☑ Oper.(LOS) ☐ Des.(N) ☐ Planning Dat

Flow Inputs				
Volume, V	2606 veh/h		Peak-Hour Factor, PHF	0.90
AADT	veh/day		%Trucks and Buses, P_T	10
Peak-Hr Prop. of AADT, K			%RVs, P_R	0
Peak-Hr Direction Prop, D			General Terrain:	Level
DDHV = AADT x K x D	veh/h		Grade % Length	mi
Driver type adjustment	1.00		Up/Down %	

Calculate Flow Adjustments			
f_p	1.00	E_R	1.2
E_T	1.5	$f_{HV} = 1/[1+P_T(E_T - 1) + P_R(E_R - 1)]$	0.952

Speed Inputs			Calc Speed Adj and FFS	
Lane Width	12.0	ft	f_{LW}	
Rt-Shoulder Lat. Clearance	6.0	ft	f_{LC}	
Interchange Density	0.50	I/mi	f_{ID}	
Number of Lanes, N	3		f_N	
FFS (measured)	65.0	mi/h	FFS	65.0
Base free-flow Speed, BFFS		mi/h		

LOS and Performance Measures			Design (N)
Operational (LOS)			Design (N)
v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)	1013	pc/h/ln	Design LOS v_p = (V or DDHV) / (PHF x N x f_{HV} x f_p)
S	65.0	mi/h	S
D = v_p / S	15.6	pc/mi/ln	D = v_p / S
LOS	B		Required Number of Lanes, N

Glossary		Factor Location	
N - Number of lanes	S - Speed	E_R - Exhibits23-8, 23-10	f_{LW} - Ex

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Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3286	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	913	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1278	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1278	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	19.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	4914	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1365	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1911	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1911	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.8	mi/h
Number of lanes, N	3	
Density, D	30.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3695	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1026	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1437	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1437	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3763	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1045	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1463	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1463	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Design Services
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Phone: Fax:
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3565	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	990	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1386	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1386	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of 20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2651	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	736	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1031	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1031	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2838	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	788	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1104	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1104	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.0	pc/mi/ln

Level of service, LOS B

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	4259	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1183	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1656	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1656	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.7	mi/h
Number of lanes, N	3	
Density, D	25.6	pc/mi/ln

Level of service, LOS C

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 NB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3224	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	896	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1254	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1254	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	19.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Engineering Services

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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	AM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3766	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1046	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1465	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1465	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Phone: Fax:
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Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	PM Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	3458	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	961	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1345	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1345	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	20.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS2000: Basic Freeway Segments Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Operational Analysis

Analyst:	KV
Agency or Company:	Omni-Means
Date Performed:	
Analysis Time Period:	SAT Peak Hour Period
Freeway/Direction:	99 SB
From/To:	North of Skyway Interchange
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Flow Inputs and Adjustments

Volume, V	2606	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	724	v
Trucks and buses	10	%
Recreational vehicles	0	%
Terrain type:	Level	
Grade	0.00	%
Segment length	0.00	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	1.2	
Heavy vehicle adjustment, fHV	0.952	
Driver population factor, fp	1.00	
Flow rate, vp	1013	pc/h/ln

Speed Inputs and Adjustments

Lane width	12.0	ft
Right-shoulder lateral clearance	6.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	65.0	mi/h
	Urban Freeway	

LOS and Performance Measures

Flow rate, vp	1013	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	15.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

SR 99
Ramps Analysis

Existing AM

Existing PM

Existing SAT

Short Term No Project AM

Short Term No Project PM

Short Term No Project SAT

Short Term Plus Project AM

Short Term Plus Project PM

Short Term Plus Project SAT

Cumulative No Project AM

Cumulative No Project PM

Cumulative No Project SAT

Cumulative Plus Project AM

Cumulative Plus Project PM

Cumulative Plus Project SAT

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1912	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	146	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	965	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1912	146	965	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	531	41	268	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2231	170	1126	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2231 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2231	4700	No
v_{12}	2231	4400	No
$v_{FO} = v_F - v_R$	2061	4700	No
v_R	170	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S	= 0.443
Space mean speed in ramp influence area, S_R	= 54.8 mph
Space mean speed in outer lanes, S_O	= N/A mph
Space mean speed for all vehicles, S	= 54.8 mph

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Design Services
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Phone: Fax:
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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	389	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	877	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2606	389	877	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	724	108	244	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3040	454	1023	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3040 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3040	4700	No
v_{12}	3040	4400	No
$v_{FO} = v_F - v_R$	2586	4700	No
v_R	454	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.0- pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S	= 0.469
Space mean speed in ramp influence area, S_R	= 54.2 mph
Space mean speed in outer lanes, S_O	= N/A mph
Space mean speed for all vehicles, S	= 54.2 mph

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Phone: Fax:
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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1886	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	304	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	663	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1886	304	663	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	524	84	184	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2200	355	774	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2200 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2200	4700	No
v_{12}	2200	4400	No
$v_{FO} = v_F - v_R$	1845	4700	No
v_R	355	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.460
Space mean speed in ramp influence area,	S_R = 54.4 mph
Space mean speed in outer lanes,	S_O = N/A mph
Space mean speed for all vehicles,	S = 54.4 mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1776	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	590	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	558	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1776	590	558	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	493	164	155	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2072	688	651	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2072 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2760	4700	No
v_{R12}	2760	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.306
Space mean speed in ramp influence area,	S_R = 58.0 mph
Space mean speed in outer lanes,	S_O = N/A mph
Space mean speed for all vehicles,	S = 58.0 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2217	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1376	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	674	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2217	1376	674	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	616	382	187	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2587	1605	786	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2587 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4192	4700	No
v_{R12}	4192	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 30.5 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.502	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.5	mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1582	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1123	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	452	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1582	1123	452	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	439	312	126	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1846	1310	527	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1846 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3156	4700	No
v_{R12}	3156	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 22.6 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.336	
Space mean speed in ramp influence area,	S_R = 57.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.3	mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2551	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	740	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	495	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2551	740	495	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	709	206	138	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2976	863	578	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_{FO} - v_R) P_{FD}$ = 2976 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2976	4700	No
v_{12}	2976	4400	No
$v_R = v_{FO} - v_R$	2113	4700	No
v_R	863	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S	= 0.506
Space mean speed in ramp influence area, S_R	= 53.4 mph
Space mean speed in outer lanes, S_O	= N/A mph
Space mean speed for all vehicles, S	= 53.4 mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2264	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1561	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	725	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2264	1561	725	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	629	434	201	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2641	1821	846	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_{FO} - v_R) P_{FD}$ = 2641 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2641	4700	No
v_{12}	2641	4400	No
$v_R = v_{FO} - v_R$	820	4700	No
v_R	1821	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 24.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S	= 0.592
Space mean speed in ramp influence area, S_R	= 51.4 mph
Space mean speed in outer lanes, S_O	= N/A mph
Space mean speed for all vehicles, S	= 51.4 mph

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1564	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1280	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	465	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1564	1280	465	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	434	356	129	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1825	1493	543	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1825 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1825	4700	No
v_{12}	1825	4400	No
$v_{FO} = v_F - v_R$	332	4700	No
v_R	1493	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.562
Space mean speed in ramp influence area,	S_R = 52.1 mph
Space mean speed in outer lanes,	S_O = N/A mph
Space mean speed for all vehicles,	S = 52.1 mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1811	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	190	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1189	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1811	190	1189	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	503	53	330	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2113	222	1387	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2113 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2335	4700	No
v_{R12}	2335	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.284
Space mean speed in ramp influence area,	S_R = 58.5 mph
Space mean speed in outer lanes,	S_O = N/A mph
Space mean speed for all vehicles,	S = 58.5 mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	703	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	309	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1327	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	703	309	1327	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	195	86	369	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	820	361	1548	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 820 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1181	4700	No
v_{R12}	1181	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 7.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.257	
Space mean speed in ramp influence area,	S_R = 59.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.1	mph

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Design Services
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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	284	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	270	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	808	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	284	270	808	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	79	75	224	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	331	315	943	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 331 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	646	4700	No
v_{R12}	646	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 3.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.251	
Space mean speed in ramp influence area,	S_R = 59.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.2	mph

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2375	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	558	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	590	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2375	558	590	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	660	155	164	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2771	651	688	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2771 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2771	4700	No
v_{12}	2771	4400	No
$v_{FO} = v_F - v_R$	2120	4700	No
v_R	651	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 25.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S	= 0.487
Space mean speed in ramp influence area, S_R	= 53.8 mph
Space mean speed in outer lanes, S_O	= N/A mph
Space mean speed for all vehicles, S	= 53.8 mph

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Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3362	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	674	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1376	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3362	674	1376	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	934	187	382	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3922	786	1605	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3922 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3922	4700	No
v_{12}	3922	4400	No
$v_{FO} = v_F - v_R$	3136	4700	No
v_R	786	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 35.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S	= 0.499
Space mean speed in ramp influence area, S_R	= 53.5 mph
Space mean speed in outer lanes, S_O	= N/A mph
Space mean speed for all vehicles, S	= 53.5 mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2393	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	452	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1123	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2393	452	1123	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	665	126	312	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2792	527	1310	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2792 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2792	4700	No
v_{12}	2792	4400	No
$v_{FO} = v_F - v_R$	2265	4700	No
v_R	527	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 25.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.475
Space mean speed in ramp influence area,	S_R = 54.1 mph
Space mean speed in outer lanes,	S_O = N/A mph
Space mean speed for all vehicles,	S = 54.1 mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2289	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	740	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2289	495	740	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	636	138	206	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2671	578	863	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2671 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3249	4700	No
v_{R12}	3249	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 23.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.344
Space mean speed in ramp influence area,	S_R = 57.1 mph
Space mean speed in outer lanes,	S_O = N/A mph
Space mean speed for all vehicles,	S = 57.1 mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1773	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	725	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1561	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1773	725	1561	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	493	201	434	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2069	846	1821	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2069 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2915	4700	No
v_{R12}	2915	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.316	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1195	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	465	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1280	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1195	465	1280	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	332	129	356	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1394	543	1493	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1394 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1937	4700	No
v_{R12}	1937	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.271	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.8	mph

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst2	KV	Freeway/Dir of Travel	99 NB Direct On-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	AM Peak Hour Period	Analysis Year	2005

Project Description Chico Wal-Mart

Inputs

Upstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

L_{up} = ft

V_U = veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off

L_{down} = 1900 ft

V_D = 146 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	$v=V/PHF\ f_{HV}\ f_p$
Freeway	1177	0.90	Level	10	0	0.952	1.00	1373
Ramp	965	0.90	Level	10	0	0.952	1.00	1126
UpStream								
DownStream	146	0.90	Level	10	0	0.952	1.00	170

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= 1.000 using Equation 0

V_{12}= 1373 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	2499	See Exhibit 25-7	No
V_{R12}	2499	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 17.6 (pc/ m/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.291 (Exibit 25-19)

S_R= 58.3 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S= 58.3 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI}=V_F$		See Exhibit 25-14	
V_{12}		4400:All	
$V_{FO} = V_F - V_R$		See Exhibit 25-14	
V_R		See Exhibit 25-3	

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/ m/ln)

LOS= (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst2	KV	Freeway/Dir of Travel	99 NB Direct On-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	PM Peak Hour Period	Analysis Year	2005

Project Description Chico Wal-Mart

Inputs

Upstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

L_{up} = ft

V_U = veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off

L_{down} = 1900 ft

V_D = 389 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	$v=V/PHF\ f_{HV}\ f_p$
Freeway	1660	0.90	Level	10	0	0.952	1.00	1937
Ramp	877	0.90	Level	10	0	0.952	1.00	1023
UpStream								
DownStream	389	0.90	Level	10	0	0.952	1.00	454

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= 1.000 using Equation 0

V_{12}= 1937 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	2960	See Exhibit 25-7	No
V_{R12}	2960	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 21.2 (pc/ m/ln)

LOS = C (Exhibit 25-4)

Speed Estimation

M_S = 0.319 (Exibit 25-19)

S_R= 57.7 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S= 57.7 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI}=V_F$		See Exhibit 25-14	
V_{12}		4400:All	
$V_{FO} = V_F - V_R$		See Exhibit 25-14	
V_R		See Exhibit 25-3	

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/ m/ln)

LOS= (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst2	KV	Freeway/Dir of Travel	99 NB Direct On-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	Saturday Peak Hour Period	Analysis Year	2005

Project Description Chico Wal-Mart

Inputs

Upstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

L_{up} = ft

V_U = veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off

L_{down} = 1900 ft

V_D = 304 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	$v=V/PHF\ f_{HV}\ f_p$
Freeway	1098	0.90	Level	10	0	0.952	1.00	1281
Ramp	663	0.90	Level	10	0	0.952	1.00	774
UpStream								
DownStream	304	0.90	Level	10	0	0.952	1.00	355

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= 1.000 using Equation 0

V_{12}= 1281 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	2055	See Exhibit 25-7	No
V_{R12}	2055	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 14.3 (pc/ m/ln)

LOS = B (Exhibit 25-4)

Speed Estimation

M_S = 0.274 (Exibit 25-19)

S_R= 58.7 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S= 58.7 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI}=V_F$		See Exhibit 25-14	
V_{12}		4400:All	
$V_{FO} = V_F - V_R$		See Exhibit 25-14	
V_R		See Exhibit 25-3	

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/ m/ln)

LOS= (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst2	KV	Freeway/Dir of Travel	99 NB Loop On-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	AM Peak Hour Period	Analysis Year	2005

Project Description Chico Wal-Mart

Inputs

Upstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

L_{up} = ft

V_U = veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D,V_R,V_f)

Downstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off

L_{down} = 750 ft

V_D = 965 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	$v=V/PHF\ f_{HV}\ f_p$
Freeway	803	0.90	Level	10	0	0.952	1.00	937
Ramp	274	0.90	Level	10	0	0.952	1.00	320
UpStream								
DownStream	965	0.90	Level	10	0	0.952	1.00	1126

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= 1.000 using Equation 0

V_{12}= 937 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	1257	See Exhibit 25-7	No
V_{R12}	1257	4600:All	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 8.2 (pc/ m/ln)

LOS = A (Exhibit 25-4)

Speed Estimation

M_S = 0.258 (Exibit 25-19)

S_R= 59.1 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S= 59.1 mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI}=V_F$		See Exhibit 25-14	
V_{12}		4400:All	
$V_{FO} = V_F - V_R$		See Exhibit 25-14	
V_R		See Exhibit 25-3	

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/ m/ln)

LOS= (Exhibit 25-4)

Speed Estimation

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst2	KV	Freeway/Dir of Travel	99 NB Loop On-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	PM Peak Hour Period	Analysis Year	2005

Project Description Chico Wal-Mart

Inputs

Upstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

L_{up} = ft

V_U = veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off

L_{down} = 750 ft

V_D = 877 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	$v=V/PHF\ f_{HV}\ f_p$
Freeway	1219	0.90	Level	10	0	0.952	1.00	1422
Ramp	441	0.90	Level	10	0	0.952	1.00	515
UpStream								
DownStream	877	0.90	Level	10	0	0.952	1.00	1023

Merge Areas | Diverge Areas

Estimation of v_{12}

Merge Areas:

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 using Equation 0

V_{12} = 1422 pc/h

Diverge Areas:

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	1937	See Exhibit 25-7	No
V_{R12}	1937	4600:All	No

	Actual	Maximum	LOS F?
$V_{Fi}=V_F$		See Exhibit 25-14	
V_{12}		4400:All	
$V_{FO} = V_F - V_R$		See Exhibit 25-14	
V_R		See Exhibit 25-3	

Level of Service Determination (if not F)

Merge Areas:

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 13.4 (pc/ m/ln)

LOS = B (Exhibit 25-4)

Diverge Areas:

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/ m/ln)

LOS= (Exhibit 25-4)

Speed Estimation

Merge Areas:

M_S = 0.271 (Exibit 25-19)

S_R= 58.8 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S= 58.8 mph (Exhibit 25-14)

Diverge Areas:

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information / Site Information

Analyst2	KV	Freeway/Dir of Travel	99 NB Loop On-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	Sat Peak Hour Period	Analysis Year	2005

Project Description Chico Wal-Mart

Inputs

Upstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

L_{up} = ft

V_U = veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off

L_{down} = 750 ft

V_D = 663 veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	$v=V/PHF\ f_{HV}\ f_p$
Freeway	859	0.90	Level	10	0	0.952	1.00	1002
Ramp	239	0.90	Level	10	0	0.952	1.00	279
UpStream								
DownStream	663	0.90	Level	10	0	0.952	1.00	774

Merge Areas | Diverge Areas

Estimation of v_{12}

Merge Areas:

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 using Equation 0

V_{12} = 1002 pc/h

Diverge Areas:

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = using Equation

V_{12} = pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}	1281	See Exhibit 25-7	No
V_{R12}	1281	4600:All	No

	Actual	Maximum	LOS F?
$V_{Fi}=V_F$		See Exhibit 25-14	
V_{12}		4400:All	
$V_{FO} = V_F - V_R$		See Exhibit 25-14	
V_R		See Exhibit 25-3	

Level of Service Determination (if not F)

Merge Areas:

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = 8.4 (pc/ m/ln)

LOS = A (Exhibit 25-4)

Diverge Areas:

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = (pc/ m/ln)

LOS= (Exhibit 25-4)

Speed Estimation

Merge Areas:

M_S = 0.258 (Exibit 25-19)

S_R= 59.1 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S= 59.1 mph (Exhibit 25-14)

Diverge Areas:

D_s = (Exhibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S = mph (Exhibit 25-15)


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                    HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services


Phone:                                  Fax:
E-mail:

_________________________________Diverge Analysis_________________________________

Analyst:                KV
Agency/Co.:             Omni-Means
Date performed:         11/21/20005
Analysis time period:   AM Peak Hour Period
Freeway/Dir of Travel:  SB 99 Direct Off-Ramp
Junction:               Skyway I/C
Jurisdiction:           Butte County
Analysis Year:          2005
Description:  Chico WalMart

_________________________________Freeway Data_________________________________

Type of analysis                          Diverge
Number of lanes in freeway                2
Free-flow speed on freeway                65.0          mph
Volume on freeway                         2391          vph

                                 Off Ramp Data

Side of freeway                           Right
Number of lanes in ramp                   1
Free-Flow speed on ramp                   35.0          mph
Volume on ramp                            1189          vph
Length of first accel/decel lane          270           ft
Length of second accel/decel lane                       ft

___________________________Adjacent Ramp Data (if one exists)___________________

Does adjacent ramp exist?                 Yes
Volume on adjacent ramp                   190           vph
Position of adjacent ramp                 Upstream
Type of adjacent ramp                     On
Distance to adjacent ramp                 1900          ft

                    Conversion to pc/h Under Base Conditions

Junction Components                       Freeway       Ramp          Adjacent
                                                                      Ramp
Volume, V (vph)                           2391          1189          190       vph
Peak-hour factor, PHF                     0.90          0.90          0.90
Peak 15-min volume, v15                   664           330           53        v
Trucks and buses                          10            10            10        %
Recreational vehicles                     0             0             0         %
Terrain type:                             Level         Level         Level
     Grade                                0.00    %     0.00    %     0.00    %
     Length                               0.00    mi    0.00    mi    0.00    mi
Trucks and buses PCE, ET                  1.5           1.5           1.5
Recreational vehicle PCE, ER              1.2           1.2           1.2
Heavy vehicle adjustment, fHV             0.952         0.952         0.952
Driver population factor, fP              1.00          1.00          1.00
Flow rate, vp                             2790          1387          222       pcph

_________________________Estimation of V12 Diverge Areas_________________________

                L  =            (Equation 25-8 or 25-9)
                 EQ
                P  =    1.000   Using Equation  0
                 FD
                v  = v  + (v - v ) P  =  2790   pc/h
                 12   R     F   R   FD

_________________________________Capacity Checks_________________________________

                          Actual        Maximum         LOS F?
     v  = v               2790          4700            No
      Fi   F
     v                    2790          4400            No
      12
     v  = v - v           1403          4700            No
      FO   F   R
     v                    1387          2000            No
      R

_________________Level of Service Determination (if not F)_____________________

Density,                D = 4.252 + 0.0086 v  - 0.009  L   =    25.8    pc/mi/ln
                         R                  12          D
Level of service for ramp-freeway junction areas of influence C

_____________________________Speed Estimation___________________________________

Intermediate speed variable,                D  = 0.553
                                             S
Space mean speed in ramp influence area,    S  = 52.3    mph
                                             R
Space mean speed in outer lanes,            S  =  N/A    mph
                                             0
Space mean speed for all vehicles,          S  = 52.3    mph
_____________________________________________________________________________
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HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Direct Off-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2057	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1327	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	309	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2057	1327	309	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	571	369	86	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2400	1548	361	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2400 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2400	4700	No
v_{12}	2400	4400	No
$v_{FO} = v_F - v_R$	852	4700	No
v_R	1548	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 22.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S	= 0.567
Space mean speed in ramp influence area, S_R	= 52.0 mph
Space mean speed in outer lanes, S_O	= N/A mph
Space mean speed for all vehicles, S	= 52.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	SB 99 Direct Off-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2005
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1425	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	808	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	270	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1425	808	270	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	396	224	75	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1663	943	315	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1663 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	1663	4700	No
v_{12}	1663	4400	No
$v_{FO} = v_F - v_R$	720	4700	No
v_R	943	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 16.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S	= 0.513
Space mean speed in ramp influence area, S_R	= 53.2 mph
Space mean speed in outer lanes, S_O	= N/A mph
Space mean speed for all vehicles, S	= 53.2 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1960	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	694	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	597	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1960	694	597	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	544	193	166	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2287	810	697	pcph

Estimation of V12 Merge Areas

L_{EQ} = 3066.43 (Equation 25-2 or 25-3)

P_{FM} = 0.619 Using Equation 3

$v_{12F} = v_{12}(P_{FM})$ = 1416 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3097	7050	No
v_{R12}	2226	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 15.6 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.280	
Space mean speed in ramp influence area,	S_R = 58.6	mph
Space mean speed in outer lanes,	S_O = 63.7	mph
Space mean speed for all vehicles,	S = 59.9	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2620	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1542	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	736	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2620	1542	736	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	728	428	204	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3057	1799	859	pcph

Estimation of V12 Merge Areas

L_{EQ} = 3779.15 (Equation 25-2 or 25-3)

P_{FM} = 0.636 Using Equation 3

$v_{12F} = v_{12}(P_{FM})$ = 1943 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4856	7050	No
v_{R12}	3742	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 26.9 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.409	
Space mean speed in ramp influence area,	S_R = 55.6	mph
Space mean speed in outer lanes,	S_O = 62.8	mph
Space mean speed for all vehicles,	S = 57.1	mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description: Chico Wal-Mart	

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1933	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1275	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	517	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1933	1275	517	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	537	354	144	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2255	1488	603	pcph

Estimation of V12 Merge Areas

L_{EQ} = 2652.88 (Equation 25-2 or 25-3)

P_{FM} = 0.610 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1375 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3743	7050	No
v_{R12}	2863	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.312

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_0 = 63.6 mph

Space mean speed for all vehicles, S = 59.1 mph

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information		Site Information	
Analyst	KV	Freeway/Dir of Travel	NB 99 Off-Ramp
Agency or Company	Omni-Means	Junction	20th Street I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	AM Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

Inputs

Upstream Adj Ramp: ☑ Yes ☑ On ☐ No ☐ Off

L_{up} = 1900 ft

Vu = 995 veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

L_{down} = ft

VD = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	v=V/PHF f_{HV} f_p
Freeway	2256	0.90	Level	10	0	0.952	1.00	2632
Ramp	296	0.90	Level	10	0	0.952	1.00	345
UpStream	995	0.90	Level	10	0	0.952	1.00	1161
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= using Equation

V_{12}= pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}		See Exhibit 25-7	
V_{R12}		4600:All	

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/ mi /ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S= mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} =1.000 using Equation 0

V_{12} = 2632 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{Fi}=V_F$	2632	4700	No
V_{12}	2632	4400:All	No
$V_{FO} = V_F - V_R$	2287	4700	No
V_R	345	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 24.5 (pc/ mi /ln)

LOS= C (Exhibit 25-4)

Speed Estimation

D_s = 0.459 (Exhibit 25-19)

S_R= 54.4 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 54.4 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information		Site Information	
Analyst	KV	Freeway/Dir of Travel	NB 99 Off-Ramp
Agency or Company	Omni-Means	Junction	20th Street I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	PM Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

Inputs

Upstream Adj Ramp: ☑ Yes ☑ On; ☐ No ☐ Off

L_{up} = 1900 ft

Vu = 932 veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp: ☐ Yes ☐ On; ☑ No ☐ Off

L_{down} = ft

VD = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	v=V/PHF f_{HV} f_p
Freeway	3263	0.90	Level	10	0	0.952	1.00	3807
Ramp	643	0.90	Level	10	0	0.952	1.00	750
UpStream	932	0.90	Level	10	0	0.952	1.00	1087
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= using Equation

V_{12}= pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}		See Exhibit 25-7	
V_{R12}		4600:All	

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/ mi /ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S= mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} =1.000 using Equation 0

V_{12} = 3807 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{Fi}=V_F	3807	4700	No
V_{12}	3807	4400:All	No
$V_{FO} = V_F - V_R$	3057	4700	No
V_R	750	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 34.6 (pc/ mi /ln)

LOS= D (Exhibit 25-4)

Speed Estimation

D_s = 0.495 (Exhibit 25-19)

S_R= 53.6 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 53.6 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information		Site Information	
Analyst	KV	Freeway/Dir of Travel	NB 99 Off-Ramp
Agency or Company	Omni-Means	Junction	20th Street I/C
Date Performed	11/21/2005	Jurisdiction	Butte County
Analysis Time Period	SAT Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

Inputs

Upstream Adj Ramp: ☑ Yes ☑ On; ☐ No ☐ Off

L_{up} = 1900 ft

Vu = 707 veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp: ☐ Yes ☐ On; ☑ No ☐ Off

L_{down} = ft

VD = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	v=V/PHF f_{HV} f_p
Freeway	2455	0.90	Level	10	0	0.952	1.00	2864
Ramp	523	0.90	Level	10	0	0.952	1.00	610
UpStream	707	0.90	Level	10	0	0.952	1.00	825
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= using Equation

V_{12}= pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}		See Exhibit 25-7	
V_{R12}		4600:All	

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, V_{12} - 0.00627\, L_A$

D_R = (pc/ mi /ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S= mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} =1.000 using Equation 0

V_{12} = 2864 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{Fi}=V_F	2864	4700	No
V_{12}	2864	4400:All	No
$V_{FO} = V_F - V_R$	2254	4700	No
V_R	610	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, V_{12} - 0.009\, L_D$

D_R = 26.5 (pc/ mi /ln)

LOS= C (Exhibit 25-4)

Speed Estimation

D_s = 0.483 (Exhibit 25-19)

S_R= 53.9 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 53.9 mph (Exhibit 25-15)

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Design Services
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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2125	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	373	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1232	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2125	373	1232	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	590	104	342	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2479	435	1437	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 2479 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2914	4700	No
v_{R12}	2914	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 21.1 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.316	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

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Design Services
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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1000	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	543	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1376	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1000	543	1376	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	278	151	382	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1167	634	1605	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 1167 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1801	4700	No
v_{R12}	1801	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 12.3 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.268	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.8	mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	614	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	459	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	910	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	614	459	910	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	171	128	253	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	716	536	1062	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 716 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1252	4700	No
v_{R12}	1252	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A =$ 8.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.258	
Space mean speed in ramp influence area,	S_R = 59.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.1	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2988	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	863	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	543	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2988	863	543	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	830	240	151	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3486	1007	634	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2784.24 (Equation 25-8 or 25-9)

P_{FD} = 0.728 Using Equation 6

$v_{12} = v_R + (v - v_R) P_{FD} =$ 2813 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3486	7050	No
v_{12}	2813	4400	No
$v_{FO} = v - v_{FR}$	2479	7050	No
v_R	1007	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, v_R - 0.009\, L_D =$ 26.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.519	
Space mean speed in ramp influence area,	S_R = 53.1	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S = 55.8	mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
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Phone: Fax:
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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2780	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1780	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	784	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2780	1780	784	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	772	494	218	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3243	2077	915	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 3015.41 (Equation 25-8 or 25-9)

P_{FD} = 0.803 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3013 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3243	7050	No
v_{12}	3013	4400	No
$v_{FO} = v_F - v_R$	1166	7050	No
v_R	2077	2000	Yes

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.615	
Space mean speed in ramp influence area,	S_R = 50.9	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S = 51.9	mph

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Phone: Fax:
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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2019	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1441	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	526	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2019	1441	526	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	561	400	146	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2356	1681	614	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2427.41 (Equation 25-8 or 25-9)

P_{FD} = 0.624 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2102 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2356	7050	No
v_{12}	2102	4400	No
$v_{FO} = v_F - v_R$	675	7050	No
v_R	1681	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.579	
Space mean speed in ramp influence area,	S_R = 51.7	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S = 53.3	mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2673	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	597	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	521	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2673	597	521	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	743	166	145	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3119	697	608	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 3106.65 (Equation 25-8 or 25-9)

P_{FD} = 0.737 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2481 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3119	7050	No
v_{12}	2481	4400	No
$v_{FO} = v_F - v_R$	2422	7050	No
v_R	697	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 23.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.491	
Space mean speed in ramp influence area,	S_R = 53.7	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S = 56.6	mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3927	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	736	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1055	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3927	736	1055	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1091	204	293	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4582	859	1231	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 5093.72 (Equation 25-8 or 25-9)

P_{FD} = 0.824 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3928 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4582	7050	No
v_{12}	3928	4400	No
$v_{FO} = v_F - v_R$	3723	7050	No
v_R	859	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 35.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.505	
Space mean speed in ramp influence area,	S_R = 53.4	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S = 55.4	mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2889	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	517	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	892	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2889	517	892	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	803	144	248	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3371	603	1041	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 5356.01 (Equation 25-8 or 25-9)

P_{FD} = 0.827 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2893 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3371	7050	No
v_{12}	2893	4400	No
$v_{FO} = v_F - v_R$	2768	7050	No
v_R	603	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.482
Space mean speed in ramp influence area,	S_R = 53.9 mph
Space mean speed in outer lanes,	S_O = 71.3 mph
Space mean speed for all vehicles,	S = 55.8 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2682	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	544	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	863	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2682	544	863	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	745	151	240	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3129	635	1007	pcph

Estimation of V12 Merge Areas

L_{EQ} = 4430.27 (Equation 25-2 or 25-3)

P_{FM} = 0.650 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2035 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3764	7050	No
v_{R12}	2670	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.300
Space mean speed in ramp influence area,	S_R = 58.1 mph
Space mean speed in outer lanes,	S_O = 62.9 mph
Space mean speed for all vehicles,	S = 59.4 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2235	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	784	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1801	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2235	784	1801	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	621	218	500	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2608	915	2101	pcph

Estimation of V12 Merge Areas

L_{EQ} = 9243.29 (Equation 25-2 or 25-3)

P_{FM} = 0.761 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1985 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3523	7050	No
v_{R12}	2900	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.315	
Space mean speed in ramp influence area,	S_R = 57.8	mph
Space mean speed in outer lanes,	S_O = 64.6	mph
Space mean speed for all vehicles,	S = 58.9	mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1591	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	526	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1473	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1591	526	1473	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	442	146	409	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1856	614	1719	pcph

Estimation of V12 Merge Areas

L_{EQ} = 7562.69 (Equation 25-2 or 25-3)

P_{FM} = 0.722 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1341 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2470	7050	No
v_{R12}	1955	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.272	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_O = 64.9	mph
Space mean speed for all vehicles,	S = 59.9	mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB Direct On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1496	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	995	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	279	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1496	995	279	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	416	276	78	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1745	1161	326	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1745 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2906	4700	No
v_{R12}	2906	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.315	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB Direct On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2261	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	932	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	643	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2261	932	643	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	628	259	179	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2638	1087	750	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2638 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3725	4700	No
v_{R12}	3725	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 27.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.406	
Space mean speed in ramp influence area,	S_R = 55.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.7	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB Direct On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1620	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	707	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	523	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1620	707	523	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	450	196	145	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1890	825	610	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1890 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2715	4700	No
v_{R12}	2715	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 19.4 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.303	
Space mean speed in ramp influence area,	S_R = 58.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.0	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1216	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	279	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	995	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1216	279	995	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	338	78	276	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1419	326	1161	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1419 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1745	4700	No
v_{R12}	1745	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A = 12.0 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.266	
Space mean speed in ramp influence area,	S_R = 58.9	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.9	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1811	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	450	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	932	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1811	450	932	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	503	125	259	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2113	525	1087	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2113 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2638	4700	No
v_{R12}	2638	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.1	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1376	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	707	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1376	245	707	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	382	68	196	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1605	286	825	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1605 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1891	4700	No
v_{R12}	1891	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.270	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.8	mph

RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information		Site Information	
Analyst	KV	Freeway/Dir of Travel	SB 99 Direct Off-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/20005	Jurisdiction	Butte County
Analysis Time Period	AM Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

Inputs

Upstream Adj Ramp: ☑ Yes ☑ On ☐ No ☐ Off; L_{up} = 1900 ft; Vu = 47 veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off; L_{down} = ft; VD = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	v=V/PHF f_{HV} f_p
Freeway	2897	0.90	Level	10	0	0.952	1.00	3380
Ramp	1232	0.90	Level	10	0	0.952	1.00	1437
UpStream	47	0.90	Level	10	0	0.952	1.00	55
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= using Equation

V_{12}= pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}		See Exhibit 25-7	
V_{R12}		4600:All	

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = (pc/ mi /ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S= mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 using Equation 0

V_{12} = 3380 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI}=V_F$	3380	4700	No
V_{12}	3380	4400:All	No
$V_{FO} = V_F - V_R$	1943	4700	No
V_R	1437	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = 30.9 (pc/ mi /ln)

LOS= D (Exhibit 25-4)

Speed Estimation

D_s = 0.557 (Exhibit 25-19)

S_R= 52.2 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 52.2 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information		Site Information	
Analyst	KV	Freeway/Dir of Travel	SB 99 Direct Off-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/20005	Jurisdiction	Butte County
Analysis Time Period	PM Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

Inputs

Upstream Adj Ramp: ☑ Yes ☑ On ☐ No ☐ Off; L_{up} = 1900 ft; Vu = 130 veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off; L_{down} = ft; VD = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	v=V/PHF f_{HV} f_p
Freeway	2613	0.90	Level	10	0	0.952	1.00	3049
Ramp	1376	0.90	Level	10	0	0.952	1.00	1605
UpStream	130	0.90	Level	10	0	0.952	1.00	152
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= using Equation

V_{12}= pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}		See Exhibit 25-7	
V_{R12}		4600:All	

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = (pc/ mi /ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S= mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 using Equation 0

V_{12} = 3049 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI}=V_F$	3049	4700	No
V_{12}	3049	4400:All	No
$V_{FO} = V_F - V_R$	1444	4700	No
V_R	1605	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = 28.0 (pc/ mi /ln)

LOS= D (Exhibit 25-4)

Speed Estimation

D_s = 0.572 (Exhibit 25-19)

S_R= 51.8 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 51.8 mph (Exhibit 25-15)

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RAMPS AND RAMP JUNCTIONS WORKSHEET

General Information		Site Information	
Analyst	KV	Freeway/Dir of Travel	SB 99 Direct Off-Ramp
Agency or Company	Omni-Means	Junction	Skyway I/C
Date Performed	11/21/20005	Jurisdiction	Butte County
Analysis Time Period	SAT Peak Hour Period	Analysis Year	2010 No Project

Project Description Chico WalMart

Inputs

Upstream Adj Ramp: ☑ Yes ☑ On ☐ No ☐ Off; L_{up} = 1900 ft; Vu = 121 veh/h

Terrain Level

S_{FF} = 65.0 mph S_{FR} = 35.0 mph

Sketch (show lanes, L_A, L_D, V_R, V_f)

Downstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off; L_{down} = ft; VD = veh/h

Conversion to pc/h Under Base Conditions

(pc/h)	V (Veh/hr)	PHF	Terrain	Truck	%Rv	f_{HV}	f_p	v=V/PHF f_{HV} f_p
Freeway	1926	0.90	Level	10	0	0.952	1.00	2247
Ramp	910	0.90	Level	10	0	0.952	1.00	1062
UpStream	121	0.90	Level	10	0	0.952	1.00	141
DownStream								

Merge Areas

Estimation of v_{12}

$V_{12} = V_F (P_{FM})$

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM}= using Equation

V_{12}= pc/h

Capacity Checks

	Actual	Maximum	LOS F?
V_{FO}		See Exhibit 25-7	
V_{R12}		4600:All	

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

D_R = (pc/ mi /ln)

LOS = (Exhibit 25-4)

Speed Estimation

M_S = (Exibit 25-19)

S_R= mph (Exhibit 25-19)

S_0= mph (Exhibit 25-19)

S= mph (Exhibit 25-14)

Diverge Areas

Estimation of v_{12}

$V_{12} = V_R + (V_F - V_R)P_{FD}$

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 using Equation 0

V_{12} = 2247 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$V_{FI}=V_F$	2247	4700	No
V_{12}	2247	4400:All	No
$V_{FO} = V_F - V_R$	1185	4700	No
V_R	1062	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

D_R = 21.1 (pc/ mi /ln)

LOS= C (Exhibit 25-4)

Speed Estimation

D_s = 0.524 (Exhibit 25-19)

S_R= 53.0 mph (Exhibit 25-19)

S_0= N/A mph (Exhibit 25-19)

S = 53.0 mph (Exhibit 25-15)

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst: KV
Agency/Co.: Omni-Means
Date performed: 11/21/2005
Analysis time period: AM Peak Hour Period
Freeway/Dir of Travel: 99 NB On-Ramp
Junction: 20th StreetI/C
Jurisdiction: Butte County
Analysis Year: 2010 Plus Project
Description: Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1960	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	726	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	600	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1960	726	600	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	544	202	167	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2287	847	700 pcph

Estimation of V12 Merge Areas

L_{EQ} = 3079.63 (Equation 25-2 or 25-3)

P_{FM} = 0.619 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 1417 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3134	7050	No
v_{R12}	2264	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 15.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.282

Space mean speed in ramp influence area, S_R = 58.5 mph

Space mean speed in outer lanes, S_O = 63.7 mph

Space mean speed for all vehicles, S = 59.9 mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2620	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1579	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	739	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2620	1579	739	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	728	439	205	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3057	1842	862 pcph

Estimation of V12 Merge Areas

L_{EQ} = 3792.34 (Equation 25-2 or 25-3)

P_{FM} = 0.636 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 1944 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4899	7050	No
v_{R12}	3786	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 27.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.416

Space mean speed in ramp influence area, S_R = 55.4 mph

Space mean speed in outer lanes, S_O = 62.8 mph

Space mean speed for all vehicles, S = 57.0 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1933	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1315	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	520	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1933	1315	520	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	537	365	144	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2255	1534	607	pcph

Estimation of V12 Merge Areas

L_{EQ} = 2670.48 (Equation 25-2 or 25-3)

P_{FM} = 0.610 Using Equation 3

$v_{12} = v_{F} (P_{FM}) =$ 1376 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3789	7050	No
v_{R12}	2910	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.316	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_O = 63.6	mph
Space mean speed for all vehicles,	S = 59.0	mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2256	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	296	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	995	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2256		296		995		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	627		82		276		v
Trucks and buses	10		10		10		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2632	345	1161	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_{R} + (v_{F} - v_{R}) P_{FD} =$ 2632 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_{F}$	2632	4700	No
v_{12}	2632	4400	No
$v_{FO} = v_{F} - v_{R}$	2287	4700	No
v_{R}	345	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 24.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.459	
Space mean speed in ramp influence area,	S_R = 54.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.4	mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3263	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	643	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	932	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3263		643		932		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	906		179		259		v
Trucks and buses	10		10		10		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3807	750	1087	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3807 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3807	4700	No
v_{12}	3807	4400	No
$v_{FO} = v_{12} - v_R$	3057	4700	No
v_R	750	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 34.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.495	
Space mean speed in ramp influence area,	S_R = 53.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.6	mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2455	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	523	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	707	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2455		523		707	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	682		145		196	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2864	610	825	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2864 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2864	4700	No
v_{12}	2864	4400	No
$v_{FO} = v_{12} - v_R$	2254	4700	No
v_R	610	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.483	
Space mean speed in ramp influence area,	S_R = 53.9	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.9	mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Proiect

Description: Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2125	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	373	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1232	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2125		373		1232	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	590		104		342	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2479	435	1437 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 2479 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2914	4700	No
v_{R12}	2914	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.316

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1013	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	543	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1376	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1013	543	1376	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	281	151	382	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	1182	634	1605 pcph

Estimation of V12 Merge Areas

L_{EQ} = 7061.15 (Equation 25-2 or 25-3)

P_{FM} = 0.711 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 840 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1816	7050	No
v_{R12}	1474	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 9.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, M_S = 0.261

Space mean speed in ramp influence area, S_R = 59.0 mph

Space mean speed in outer lanes, S_O = 65.0 mph

Space mean speed for all vehicles, S = 60.0 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	646	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	459	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	910	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	646	459	910	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	179	128	253	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	754	536	1062 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 754 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1290	4700	No
v_{R12}	1290	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 8.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable, M_S = 0.258

Space mean speed in ramp influence area, S_R = 59.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 59.1 mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3018	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	893	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	545	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3018		893		545	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	838		248		151	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3521	1042	636 pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2751.16 (Equation 25-8 or 25-9)

P_{FD} = 0.727 Using Equation 6

$v_{12} = v_R + (v_F - v_R)\, P_{FD}$ = 2845 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3521	7050	No
v_{12}	2845	4400	No
$v_{FO} = v_F - v_R$	2479	7050	No
v_R	1042	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.522

Space mean speed in ramp influence area, S_R = 53.0 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S = 55.7 mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2831	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1818	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	787	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2831		1818		787	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	786		505		219	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3303	2121	918	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2978.92 (Equation 25-8 or 25-9)

P_{FD} = 0.801 Using Equation 6

$v_{12R} = v_F + (v - v_F) P_{FD}$ = 3068 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3303	7050	No
v_{12}	3068	4400	No
$v_{FO} = v_{12} - v_R$	1182	7050	No
v_R	2121	2000	Yes

Level of Service Determination (if not F)

Density, D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D = 28.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.619	
Space mean speed in ramp influence area,	S_R = 50.8	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S_O = 51.8	mph

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Design Services
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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2084	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1438	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	528	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2084		1438		528	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	579		399		147	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2431	1678	616	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2420.99 (Equation 25-8 or 25-9)

P_{FD} = 0.622 Using Equation 5

$v_{12R} = v_F + (v - v_F) P_{FD}$ = 2146 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2431	7050	No
v_{12}	2146	4400	No
$v_{FO} = v_{12} - v_R$	753	7050	No
v_R	1678	2000	No

Level of Service Determination (if not F)

Density, D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D = 20.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.579	
Space mean speed in ramp influence area,	S_R = 51.7	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S_O = 53.4	mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2705	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	597	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	553	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2705		597		553	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	751		166		154	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3156	697	645	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 3281.44 (Equation 25-8 or 25-9)

P_{FD} = 0.744 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2526 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3156	7050	No
v_{12}	2526	4400	No
$v_{FO} = v_{12} - v_R$	2459	7050	No
v_R	697	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 23.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.491

Space mean speed in ramp influence area, S_R = 53.7 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S = 56.5 mph

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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3964	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	736	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1092	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3964		736		1092	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	1101		204		303	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4625	859	1274	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 5250.17 (Equation 25-8 or 25-9)

P_{FD} = 0.833 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3995 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4625	7050	No
v_{12}	3995	4400	No
$v_{FO} = v_{12} - v_R$	3766	7050	No
v_R	859	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 36.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.505

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S = 55.3 mph

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2929	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	517	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	932	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2929		517		932	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	814		144		259	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3417	603	1087	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 5562.41 (Equation 25-8 or 25-9)

P_{FD} = 0.836 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2956 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3417	7050	No
v_{12}	2956	4400	No
$v_{FO} = v_{12} - v_R$	2814	7050	No
v_R	603	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.482

Space mean speed in ramp influence area, S_R = 53.9 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S_O = 55.7 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2712	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	545	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	893	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2712	545	893	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	753	151	248	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3164	636	1042	pcph

Estimation of V12 Merge Areas

L_{EQ} = 4584.25 (Equation 25-2 or 25-3)

P_{FM} = 0.654 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2069 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3800	7050	No
v_{R12}	2705	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.302

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_O = 62.9 mph

Space mean speed for all vehicles, S_O = 59.4 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2265	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	787	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1831	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2265	787	1831	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	629	219	509	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2643	918	2136	pcph

Estimation of V12 Merge Areas

L_{EQ} = 9397.27 (Equation 25-2 or 25-3)

P_{FM} = 0.765 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 2021 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3561	7050	No
v_{R12}	2939	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.318

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = 64.6 mph

Space mean speed for all vehicles, S = 58.8 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1624	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	528	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1506	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1624	528	1506	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	451	147	418	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1895	616	1757	pcph

Estimation of V12 Merge Areas

L_{EQ} = 7729.87 (Equation 25-2 or 25-3)

P_{FM} = 0.726 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 1376 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2511	7050	No
v_{R12}	1992	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.273

Space mean speed in ramp influence area, S_R = 58.7 mph

Space mean speed in outer lanes, S_O = 64.9 mph

Space mean speed for all vehicles, S = 59.9 mph

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Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB Direct On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1496	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	995	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	296	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1496	995	296	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	416	276	82	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1745	1161	345	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 1745 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2906	4700	No
v_{R12}	2906	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.315

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB Direct On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2261	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	932	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	643	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2261	932	643	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	628	259	179	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2638	1087	750	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 2638 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3725	4700	No
v_{R12}	3725	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 27.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.406

Space mean speed in ramp influence area, S_R = 55.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.7 mph

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Design Services
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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB Direct On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1620	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	707	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	523	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1620	707	523	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	450	196	145	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	1890	825	610 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 1890 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2715	4700	No
v_{R12}	2715	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.303

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1216	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	279	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	995	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1216	279	995	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	338	78	276	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	1419	326	1161 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 1419 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1745	4700	No
v_{R12}	1745	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 12.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.266

Space mean speed in ramp influence area, S_R = 58.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.9 mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1811	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	450	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	932	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1811	450	932	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	503	125	259	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2113	525	1087	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 2113 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2638	4700	No
v_{R12}	2638	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.1	mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1376	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	707	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1376		245		707		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	382		68		196		v
Trucks and buses	10		10		10		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade		%		%		%	
Length		mi		mi		mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1605	286	825	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 1605 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1891	4700	No
v_{R12}	1891	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.270	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.8	mph

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Design Services
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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/20005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Direct Off-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2897	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1232	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	47	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2897		1232		47		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	805		342		13		v
Trucks and buses	10		10		10		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3380	1437	55	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3380 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3380	4700	No
v_{12}	3380	4400	No
$v_{FO} = v_{12} - v_R$	1943	4700	No
v_R	1437	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.557

Space mean speed in ramp influence area, S_R = 52.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 52.2 mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/20005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Direct Off-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2613	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1376	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	130	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2613		1376		130	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	726		382		36	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3049	1605	152	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3049 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3049	4700	No
v_{12}	3049	4400	No
$v_{FO} = v_{12} - v_R$	1444	4700	No
v_R	1605	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.0+ pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.572

Space mean speed in ramp influence area, S_R = 51.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.8 mph

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Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/20005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	SB 99 Direct Off-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2010 Plus Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1926	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	910	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	121	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1900	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1926		910		121	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	535		253		34	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2247	1062	141	pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2247 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2247	4700	No
v_{12}	2247	4400	No
$v_{FO} = v_F - v_R$	1185	4700	No
v_R	1062	2000	No

Level of Service Determination (if not F)

Density, D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.524	
Space mean speed in ramp influence area,	S_R = 53.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S_S = 53.0	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project

Description: Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2609	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	624	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	694	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2609	624	694	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	725	173	193	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3044	728	810	pcph

Estimation of V12 Merge Areas

L_{EQ} = 3563.57 (Equation 25-2 or 25-3)

P_{FM} = 0.631 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1919 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3772	7050	No
v_{R12}	2647	4600	No

Level of Service Determination (if not F)

Density, D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 18.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_O = 62.8	mph
Space mean speed for all vehicles,	S_S = 59.4	mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project

Description: Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3916	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1221	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	889	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3916	1221	889	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1088	339	247	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	4569	1425	1037 pcph

Estimation of V12 Merge Areas

L_{EQ} = 4562.25 (Equation 25-2 or 25-3)

P_{FM} = 0.654 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 2986 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5994	7050	No
v_{R12}	4411	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 32.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.565

Space mean speed in ramp influence area, S_R = 52.0 mph

Space mean speed in outer lanes, S_O = 61.1 mph

Space mean speed for all vehicles, S = 54.1 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2988	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1016	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	635	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2988	1016	635	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	830	282	176	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3486	1185	741 pcph

Estimation of V12 Merge Areas

L_{EQ} = 3260.01 (Equation 25-2 or 25-3)

P_{FM} = 0.624 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 2174 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4671	7050	No
v_{R12}	3359	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 24.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.356

Space mean speed in ramp influence area, S_R = 56.8 mph

Space mean speed in outer lanes, S_O = 62.1 mph

Space mean speed for all vehicles, S = 58.2 mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2384	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	225	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	624	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2384	225	624	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	662	63	173	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2781	263	728 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{12}(P_{FM})$ = 1692 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3044	7050	No
v_{R12}	1955	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 13.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.272

Space mean speed in ramp influence area, S_R = 58.8 mph

Space mean speed in outer lanes, S_O = 62.9 mph

Space mean speed for all vehicles, S = 60.2 mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3315	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	601	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1221	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3315	601	1221	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	921	167	339	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3868	701	1425 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{12}(P_{FM})$ = 2353 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4569	7050	No
v_{R12}	3054	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.327

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_O = 61.3 mph

Space mean speed for all vehicles, S = 58.7 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	Sat Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2490	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	498	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1016	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2490	498	1016	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	692	138	282	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2905	581	1185 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{12}(P_{FM})$ = 1767 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3486	7050	No
v_{R12}	2348	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.285

Space mean speed in ramp influence area, S_R = 58.4 mph

Space mean speed in outer lanes, S_O = 62.7 mph

Space mean speed for all vehicles, S = 59.8 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2704	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	561	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	54	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2704	561	54	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	751	156	15	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3155	655	63 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{12}(P_{FM})$ = 1919 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3810	7050	No
v_{R12}	2574	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.295

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = 62.4 mph

Space mean speed for all vehicles, S = 59.5 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1420	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	684	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	149	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1420	684	149	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	394	190	41	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	1657	798	174 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{F}(P_{FM})$ = 1008 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2455	7050	No
v_{R12}	1806	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 12.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.268	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_O = 64.5	mph
Space mean speed for all vehicles,	S = 60.2	mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	920	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	546	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	139	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	920	546	139	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	256	152	39	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	1073	637	162 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{F}(P_{FM})$ = 653 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1710	7050	No
v_{R12}	1290	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 8.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.258	
Space mean speed in ramp influence area,	S_R = 59.1	mph
Space mean speed in outer lanes,	S_O = 65.0	mph
Space mean speed for all vehicles,	S = 60.4	mph

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3733	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1029	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	652	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3733	1029	652	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1037	286	181	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4355	1201	761	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2899.70 (Equation 25-8 or 25-9)

P_{FD} = 0.724 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3484 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4355	7050	No
v_{12}	3484	4400	No
$v_{FO} = v_{12} - v_R$	3154	7050	No
v_R	1201	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.536	
Space mean speed in ramp influence area,	S_R = 52.7	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S = 55.6	mph

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3535	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2155	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	924	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3535		2155		924	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	982		599		257	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4124	2514	1078	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 3020.32 (Equation 25-8 or 25-9)

P_{FD} = 0.807 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3813 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4124	7050	No
v_{12}	3813	4400	No
$v_{FO} = v_{12} - v_R$	1610	7050	No
v_R	2514	2000	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 34.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.654	
Space mean speed in ramp influence area,	S_R = 50.0	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S = 51.1	mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2621	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1701	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	639	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2621		1701		639	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	728		473		178	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3058	1985	746	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2553.10 (Equation 25-8 or 25-9)

P_{FD} = 0.592 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2620 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3058	7050	No
v_{12}	2620	4400	No
$v_{FO} = v_{12} - v_R$	1073	7050	No
v_R	1985	2000	Yes

Level of Service Determination (if not F)

Density, D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D = 24.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.607	
Space mean speed in ramp influence area,	S_R = 51.0	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S_O = 53.2	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3254	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	694	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	624	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3254		694		624	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	904		193		173	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3796	810	728	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 3311.08 (Equation 25-8 or 25-9)

P_{FD} = 0.738 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3014 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3796	7050	No
v_{12}	3014	4400	No
$v_{FO} = v_{12} - v_R$	2986	7050	No
v_R	810	2000	No

Level of Service Determination (if not F)

Density, D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D = 27.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.501	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S_O = 56.4	mph

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Design Services
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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4877	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	889	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1221	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	700	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4877		889		1221	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	1355		247		339	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5690	1037	1425	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 5076.92 (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5690 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5690	7050	No
v_{12}	5690	4400	Yes
$v_{FO} = v_{12} - v_R$	4653	7050	No
v_R	1037	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 50.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.521

Space mean speed in ramp influence area, S_R = 53.0 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S = 53.0 mph

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Design Services
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Phone: Fax:
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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3645	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	635	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1016	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3645		635		1016	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	1013		176		282	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4253	741	1185	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 5263.51 (Equation 25-8 or 25-9)

P_{FD} = 0.826 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3643 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4253	7050	No
v_{12}	3643	4400	No
$v_{FO} = v_{12} - v_R$	3512	7050	No
v_R	741	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 33.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.495

Space mean speed in ramp influence area, S_R = 53.6 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S = 55.6 mph

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Design Services
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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project

Description: Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3338	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	652	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1029	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3338		652		1029	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	927		181		286	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade		%		%		%
Length		mi		mi		mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3894	761	1201 pcph

Estimation of V12 Merge Areas

L_{EQ} = 5283.77 (Equation 25-2 or 25-3)

P_{FM} = 0.670 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 2609 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4655	7050	No
v_{R12}	3370	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A = 24.5 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.357	
Space mean speed in ramp influence area,	S_R = 56.8	mph
Space mean speed in outer lanes,	S_O = 62.2	mph
Space mean speed for all vehicles,	S = 58.2	mph

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Design Services
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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2900	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	924	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	2155	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	700	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2900	924	2155	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	806	257	599	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3383	1078	2514 pcph

Estimation of V12 Merge Areas

L_{EQ} = 11060.27 Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 3383 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4461	7050	No
v_{R12}	4461	4600	No

Level of Service Determination (if not F)

$$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A = 32.9 \text{ pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.582	
Space mean speed in ramp influence area,	S_R = 51.6	mph
Space mean speed in outer lanes,	S_O = 65.0	mph
Space mean speed for all vehicles,	S = 51.6	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2092	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	639	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1747	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2092	639	1747	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	581	178	485	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2441	746	2038 pcph

Estimation of V12 Merge Areas

L_{EQ} = 8966.12 (Equation 25-2 or 25-3)

P_{FM} = 0.755 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 1842 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3187	7050	No
v_{R12}	2588	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.296

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = 64.6 mph

Space mean speed for all vehicles, S = 59.3 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1676	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	315	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1132	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1676	315	1132	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	466	88	314	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	1955	368	1321 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 1955 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2323	4700	No
v_{R12}	2323	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 16.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.284

Space mean speed in ramp influence area, S_R = 58.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.5 mph

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Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2610	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	507	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1089	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2610	507	1089	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	725	141	303	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3045	592	1271 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 3045 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3637	4700	No
v_{R12}	3637	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.392

Space mean speed in ramp influence area, S_R = 56.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.0 mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2026	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	276	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	805	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2026	276	805	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	563	77	224	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2364	322	939 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 2364 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2686	4700	No
v_{R12}	2686	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.301

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2587	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	657	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	694	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2587	657	694	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	719	183	193	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3018	767	810 pcph

Estimation of V12 Merge Areas

L_{EQ} = 3563.57 (Equation 25-2 or 25-3)

P_{FM} = 0.631 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 1903 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3785	7050	No
v_{R12}	2670	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.300

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_O = 62.8 mph

Space mean speed for all vehicles, S = 59.4 mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3888	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1258	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	889	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3888	1258	889	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1080	349	247	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	4536	1468	1037 pcph

Estimation of V12 Merge Areas

L_{EQ} = 4562.25 (Equation 25-2 or 25-3)

P_{FM} = 0.654 Using Equation 3

$v_{12} = v_{12}(P_{FM})$ = 2964 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6004	7050	No
v_{R12}	4432	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 32.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.572

Space mean speed in ramp influence area, S_R = 51.8 mph

Space mean speed in outer lanes, S_O = 61.1 mph

Space mean speed for all vehicles, S = 54.0 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2939	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	1056	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	635	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2939	1056	635	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	816	293	176	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3429	1232	741	pcph

Estimation of V12 Merge Areas

L_{EQ} = 3260.01 (Equation 25-2 or 25-3)

P_{FM} = 0.624 Using Equation 3

$v_{12} = v_{F} (P_{FM}) =$ 2138 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4661	7050	No
v_{R12}	3370	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 24.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.357

Space mean speed in ramp influence area, S_R = 56.8 mph

Space mean speed in outer lanes, S_O = 62.2 mph

Space mean speed for all vehicles, S = 58.2 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2362	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	225	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	657	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2362	225	657	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	656	63	183	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2756	263	767	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{F} (P_{FM}) =$ 1676 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3019	7050	No
v_{R12}	1939	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 13.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.271

Space mean speed in ramp influence area, S_R = 58.8 mph

Space mean speed in outer lanes, S_O = 62.9 mph

Space mean speed for all vehicles, S = 60.2 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3287	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	601	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1258	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3287	601	1258	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	913	167	349	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3835	701	1468 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{F}(P_{FM})$ = 2333 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4536	7050	No
v_{R12}	3034	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 21.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.325

Space mean speed in ramp influence area, S_R = 57.5 mph

Space mean speed in outer lanes, S_O = 61.4 mph

Space mean speed for all vehicles, S = 58.7 mph

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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2441	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	498	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1056	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2441	498	1056	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	678	138	293	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2848	581	1232 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{F}(P_{FM})$ = 1732 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3429	7050	No
v_{R12}	2313	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 16.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.283

Space mean speed in ramp influence area, S_R = 58.5 mph

Space mean speed in outer lanes, S_O = 62.8 mph

Space mean speed for all vehicles, S = 59.8 mph

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Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2704	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	561	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	54	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2704	561	54	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	751	156	15	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3155	655	63	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{F}(P_{FM})$ = 1919 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3810	7050	No
v_{R12}	2574	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 18.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.295

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = 62.4 mph

Space mean speed for all vehicles, S = 59.5 mph

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Phone: Fax:
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Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1420	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	684	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	149	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1420	684	149	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	394	190	41	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1657	798	174	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_{F}(P_{FM})$ = 1008 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2455	7050	No
v_{R12}	1806	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 12.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.268

Space mean speed in ramp influence area, S_R = 58.8 mph

Space mean speed in outer lanes, S_O = 64.5 mph

Space mean speed for all vehicles, S = 60.2 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	20th StreetI/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	920	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	546	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	139	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	920	546	139	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	256	152	39	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1073	637	162	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 0.608 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 653 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1710	7050	No
v_{R12}	1290	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{FO} + 0.0078\, v_{R12} - 0.00627\, L_A$ = 8.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence A

Speed Estimation

Intermediate speed variable,	M_S = 0.258
Space mean speed in ramp influence area,	S_R = 59.1 mph
Space mean speed in outer lanes,	S_O = 65.0 mph
Space mean speed for all vehicles,	S = 60.4 mph

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3763	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1059	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	654	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3763		1059		654		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1045		294		182		v
Trucks and buses	10		10		10		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4390	1236	763	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2869.44 (Equation 25-8 or 25-9)

P_{FD} = 0.723 Using Equation 6

$v_{12} = v_R + (v_F - v_R)\, P_{FD}$ = 3516 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4390	7050	No
v_{12}	3516	4400	No
$v_{FO} = v_{12} - v_R$	3154	7050	No
v_R	1236	2000	No

Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.539
Space mean speed in ramp influence area,	S_R = 52.6 mph
Space mean speed in outer lanes,	S_O = 71.3 mph
Space mean speed for all vehicles,	S = 55.5 mph

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Phone: Fax:
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Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project
Description:	Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3565	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	2185	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	927	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3565		2185		927		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	990		607		258		v
Trucks and buses	10		10		10		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4159	2549	1082	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 3002.38 (Equation 25-8 or 25-9)

P_{FD} = 0.806 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3847 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4159	7050	No
v_{12}	3847	4400	No
$v_{FO} = v_{12} - v_R$	1610	7050	No
v_R	2549	2000	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 34.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.657

Space mean speed in ramp influence area, S_R = 49.9 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S = 51.0 mph

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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	SB 99 Off-Ramp
Junction:	20th Street I/C
Jurisdiction:	Butte County
Analysis Year:	2018 No Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2651	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	1734	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	641	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2651		1734		641		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	736		482		178		v
Trucks and buses	10		10		10		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3093	2023	748	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 2527.99 (Equation 25-8 or 25-9)

P_{FD} = 0.590 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2654 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3093	7050	No
v_{12}	2654	4400	No
$v_{FO} = v_{12} - v_R$	1070	7050	No
v_R	2023	2000	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 24.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.610

Space mean speed in ramp influence area, S_R = 51.0 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S = 53.1 mph

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Design Services
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Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3286	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	694	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	657	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3286		694		657		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	913		193		183		v
Trucks and buses	10		10		10		%
Recreational vehicles	0		0		0		%
Terrain type:	Level		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	1.5		1.5		1.5		
Recreational vehicle PCE, ER	1.2		1.2		1.2		

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3834	810	767	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 3474.64 (Equation 25-8 or 25-9)

P_{FD} = 0.746 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3065 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3834	7050	No
v_{12}	3065	4400	No
$v_{FO} = v_{12} - v_R$	3024	7050	No
v_R	810	2000	No

Level of Service Determination (if not F)

Density, D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D = 28.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.501	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S_S = 56.3	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4914	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	889	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1258	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	700	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4914		889		1258	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	1365		247		349	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5733	1037	1468	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 5211.75 (Equation 25-8 or 25-9)

P_{FD} = 1.000 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5733 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5733	7050	No
v_{12}	5733	4400	Yes
$v_{FO} = v_{12} - v_R$	4696	7050	No
v_R	1037	2000	No

Level of Service Determination (if not F)

Density, D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D = 51.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.521	
Space mean speed in ramp influence area,	S_R = 53.0	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S_S = 53.0	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Diverge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	NB 99 Off-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project

Description: Chico WalMart

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3695	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	635	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	1056	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3695		635		1056	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	1026		176		293	v
Trucks and buses	10		10		10	%
Recreational vehicles	0		0		0	%
Terrain type:	Level		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	1.5		1.5		1.5	
Recreational vehicle PCE, ER	1.2		1.2		1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4311	741	1232	pcph

Estimation of V12 Diverge Areas

L_{EQ} = 5440.04 (Equation 25-8 or 25-9)

P_{FD} = 0.835 Using Equation 6

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3722 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4311	7050	No
v_{12}	3722	4400	No
$v_{FO} = v_{12} - v_R$	3570	7050	No
v_R	741	2000	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 33.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.495	
Space mean speed in ramp influence area,	S_R = 53.6	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S_S = 55.5	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3366	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	654	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1059	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3366	654	1059	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	935	182	294	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3927	763	1236	pcph

Estimation of V12 Merge Areas

L_{EQ} = 5437.75 (Equation 25-2 or 25-3)

P_{FM} = 0.674 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 2645 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4690	7050	No
v_{R12}	3408	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.362	
Space mean speed in ramp influence area,	S_R = 56.7	mph
Space mean speed in outer lanes,	S_O = 62.2	mph
Space mean speed for all vehicles,	S_S = 58.1	mph

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Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2927	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	927	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	2185	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	700	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2927	927	2185	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	813	258	607	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3415	1082	2549 pcph

Estimation of V12 Merge Areas

L_{EQ} = 878.96 (Equation 25-2 or 25-3)

P_{FM} = 0.597 Using Equation 2

$v_{12} = v_F (P_{FM})$ = 2039 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4497	7050	No
v_{R12}	3121	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_A - 0.00627\, L_A$ = 22.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.332

Space mean speed in ramp influence area, S_R = 57.4 mph

Space mean speed in outer lanes, S_O = 61.8 mph

Space mean speed for all vehicles, S = 58.7 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 SB On-Ramp
Junction:	Route 32 I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2123	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	641	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1734	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2600	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2123	641	1734	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	590	178	482	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	2477	748	2023 pcph

Estimation of V12 Merge Areas

L_{EQ} = 8900.13 (Equation 25-2 or 25-3)

P_{FM} = 0.753 Using Equation 3

$v_{12} = v_F (P_{FM})$ = 1866 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3225	7050	No
v_{R12}	2614	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_A - 0.00627\, L_A$ = 18.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.297

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = 64.6 mph

Space mean speed for all vehicles, S = 59.3 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	AM Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1676	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	315	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1132	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1676	315	1132	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	466	88	314	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	1955	368	1321 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 1955 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2323	4700	No
v_{R12}	2323	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 16.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.284
Space mean speed in ramp influence area,	S_R = 58.5 mph
Space mean speed in outer lanes,	S_O = N/A mph
Space mean speed for all vehicles,	S = 58.5 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	PM Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2610	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	507	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	1089	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2610	507	1089	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	725	141	303	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952
Driver population factor, fP	1.00	1.00	1.00
Flow rate, vp	3045	592	1271 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_{12}(P_{FM})$ = 3045 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3637	4700	No
v_{R12}	3637	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_{R12} + 0.0078\, v_{FO} - 0.00627\, L_A$ = 26.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.392
Space mean speed in ramp influence area,	S_R = 56.0 mph
Space mean speed in outer lanes,	S_O = N/A mph
Space mean speed for all vehicles,	S = 56.0 mph

HCS2000: Ramps and Ramp Junctions Release 4.1d

Design Services
Engineering Services

Phone: Fax:
E-mail:

Merge Analysis

Analyst:	KV
Agency/Co.:	Omni-Means
Date performed:	11/21/2005
Analysis time period:	SAT Peak Hour Period
Freeway/Dir of Travel:	99 NB Loop On-Ramp
Junction:	Skyway I/C
Jurisdiction:	Butte County
Analysis Year:	2018 Plus Project
Description:	Chico Wal-Mart

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2026	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	276	vph
Length of first accel/decel lane	1100	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	805	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	750	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2026	276	805	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	563	77	224	v
Trucks and buses	10	10	10	%
Recreational vehicles	0	0	0	%
Terrain type:	Level	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	

Heavy vehicle adjustment, fHV	0.952	0.952	0.952	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2364	322	939	pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 25-2 or 25-3)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2364 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2686	4700	No
v_{R12}	2686	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 19.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.301

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

Traffic Signal Warrant Worksheets

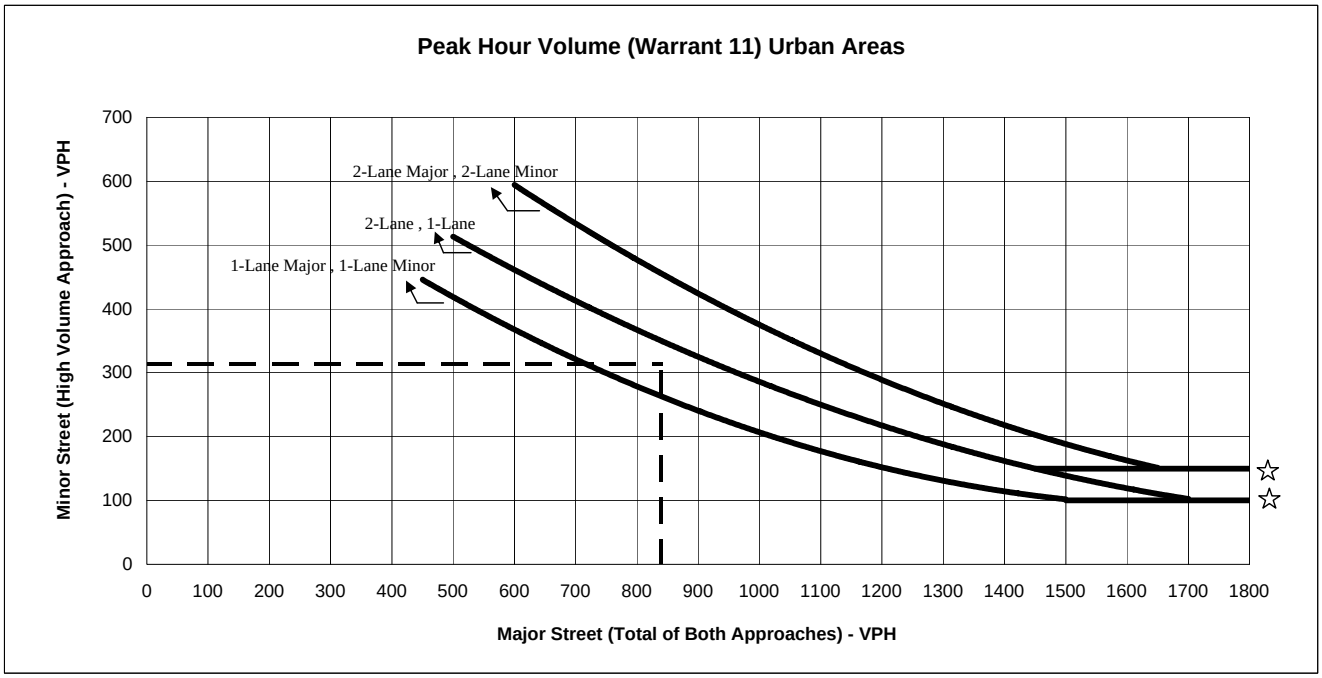
Business Lane/Baney Lane

Baney Lane/Walmart Eastern Driveway

Forest Avenue/Talbert-Whittmeier Drive

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

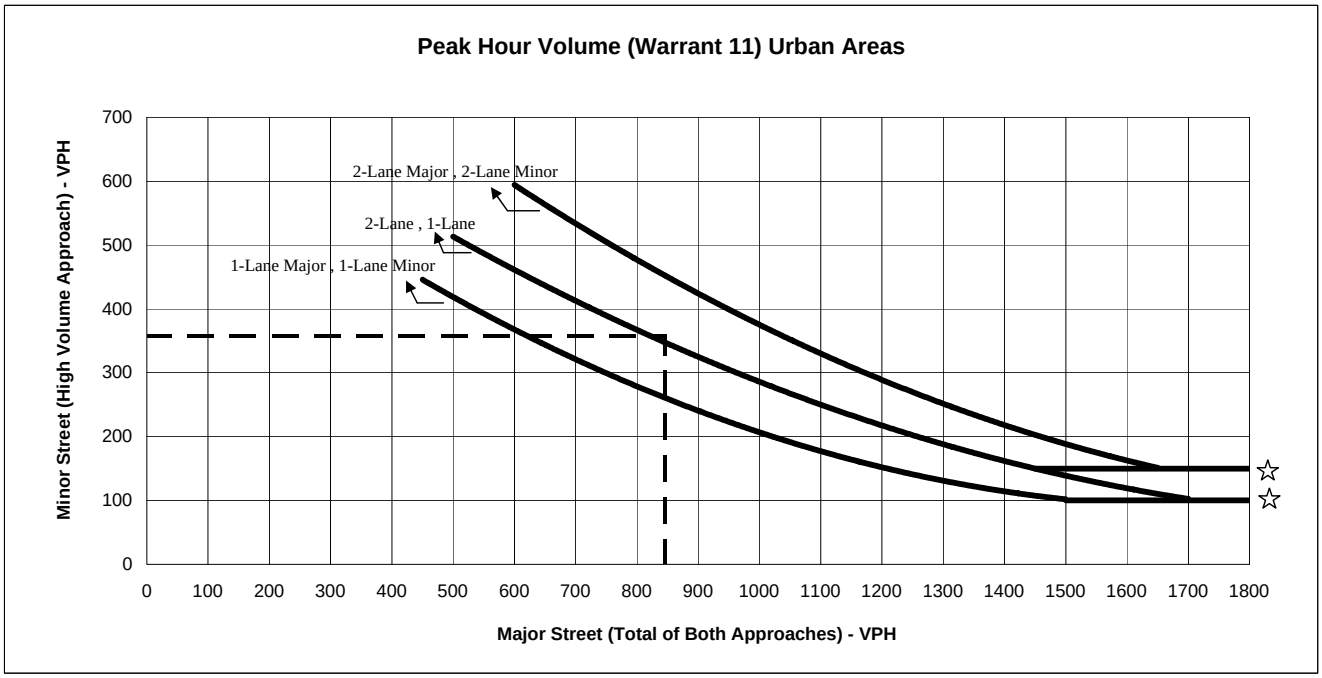


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Business Lane/Baney Lane
Scenario:	2018 No Project SAT Peak Hour Conditions
Minor St. Volume:	314
Major St. Volume:	839
Warrant Met?:	YES

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

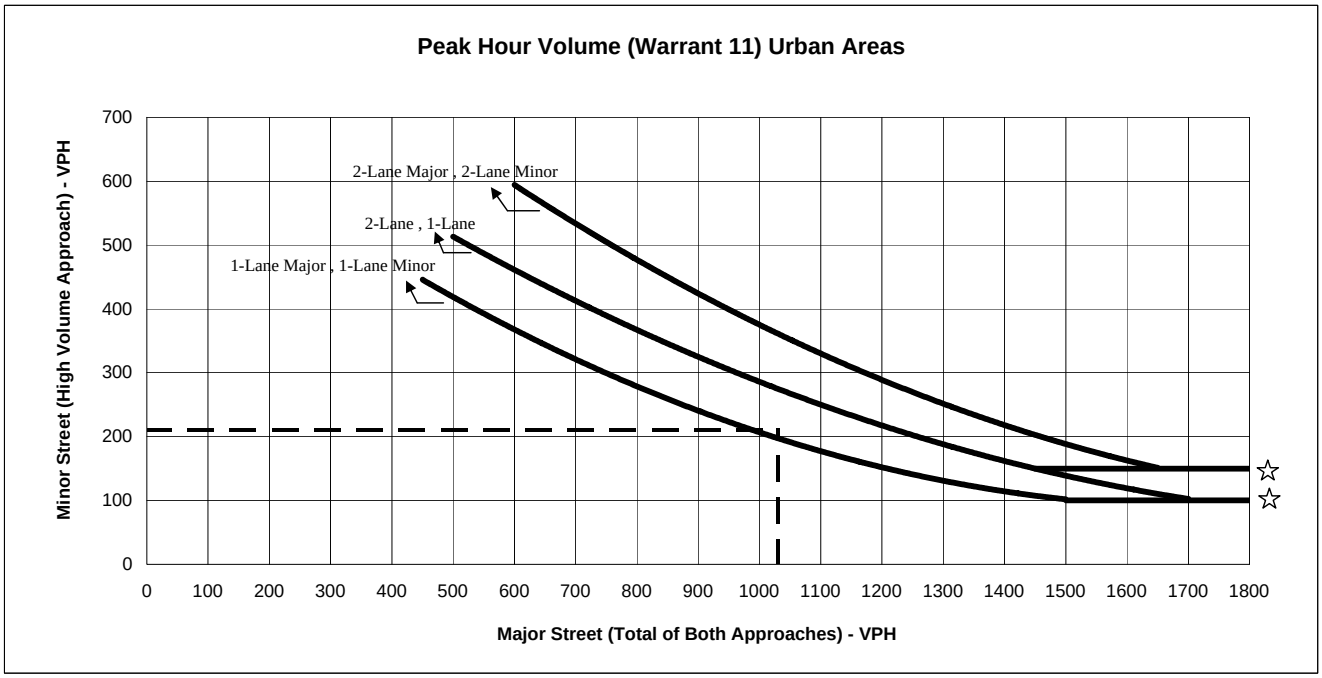


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Business Lane/Baney Lane
Scenario:	2018 Plus project SAT peak hour conditions
Minor St. Volume:	358
Major St. Volume:	845
Warrant Met?:	YES

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

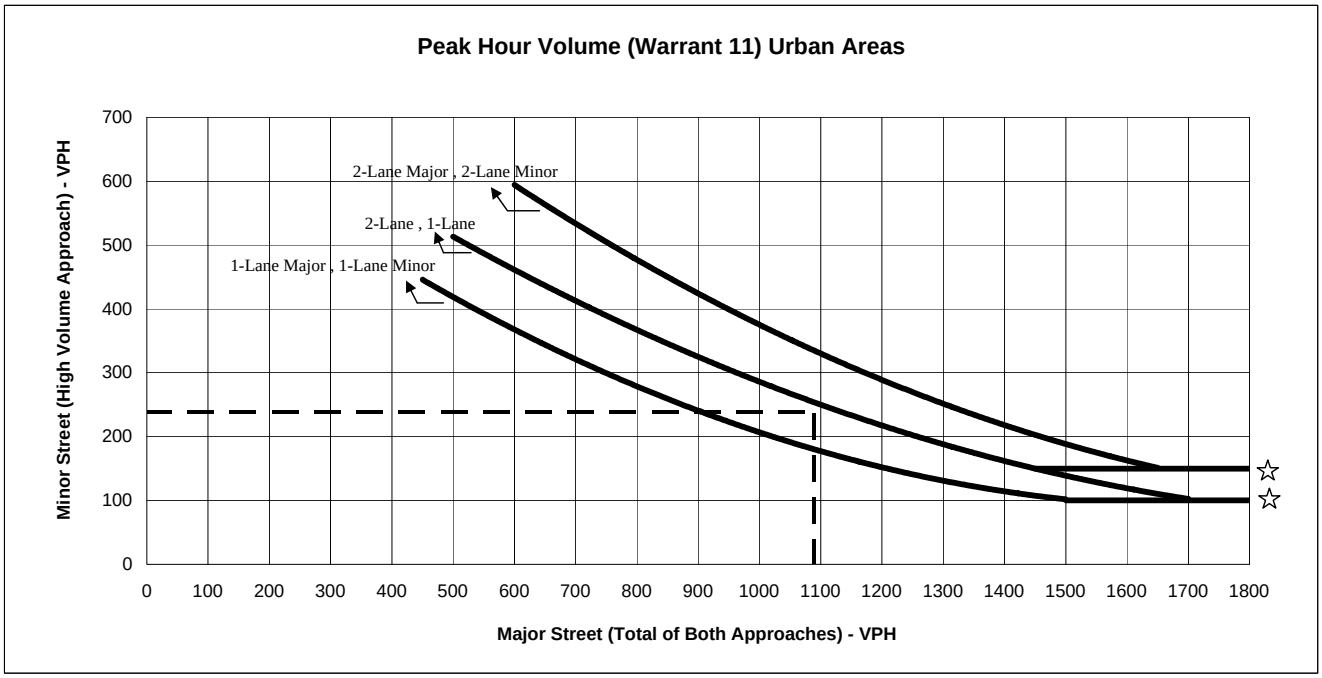


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Baney Lane/Walmart Eastern Driveway
Scenario:	2018 No Project SAT Peak Hour Conditions
Minor St. Volume:	211
Major St. Volume:	1030
Warrant Met?:	YES

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

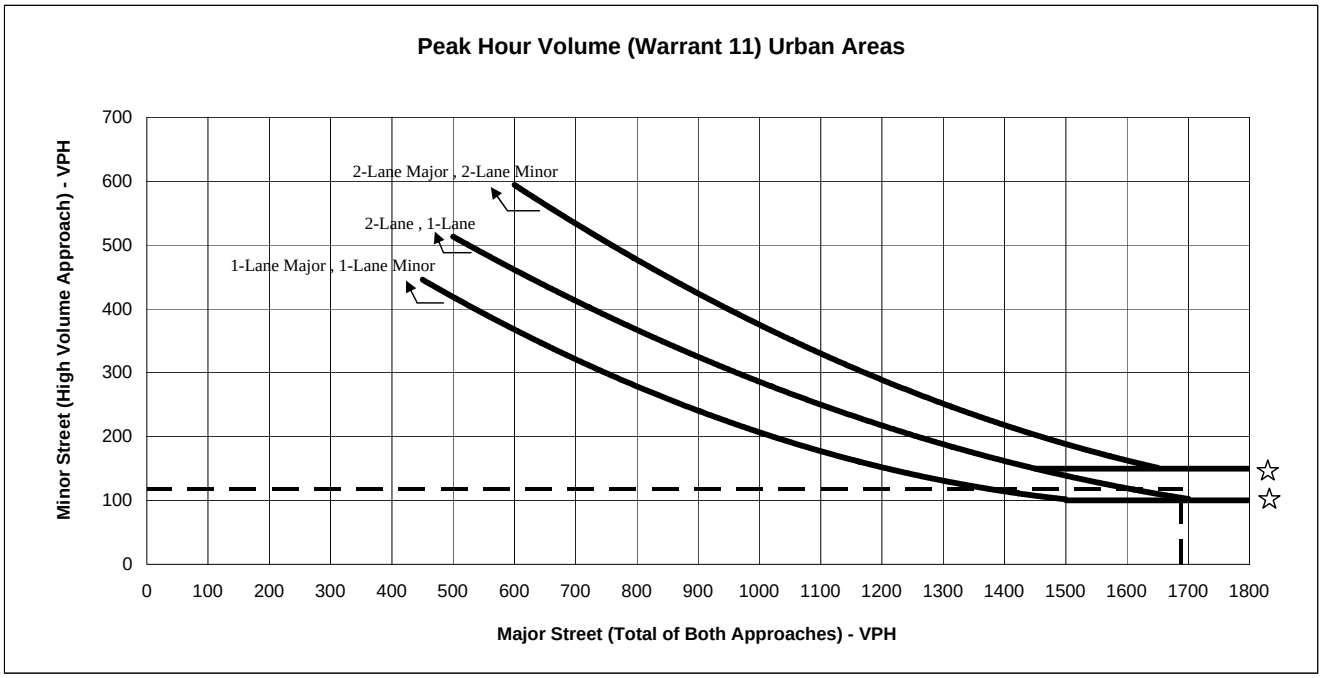


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Baney Lane/Walmart Eastern Driveway
Scenario:	2018 Plus project SAT peak hour conditions
Minor St. Volume:	238
Major St. Volume:	1089
Warrant Met?:	YES

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*

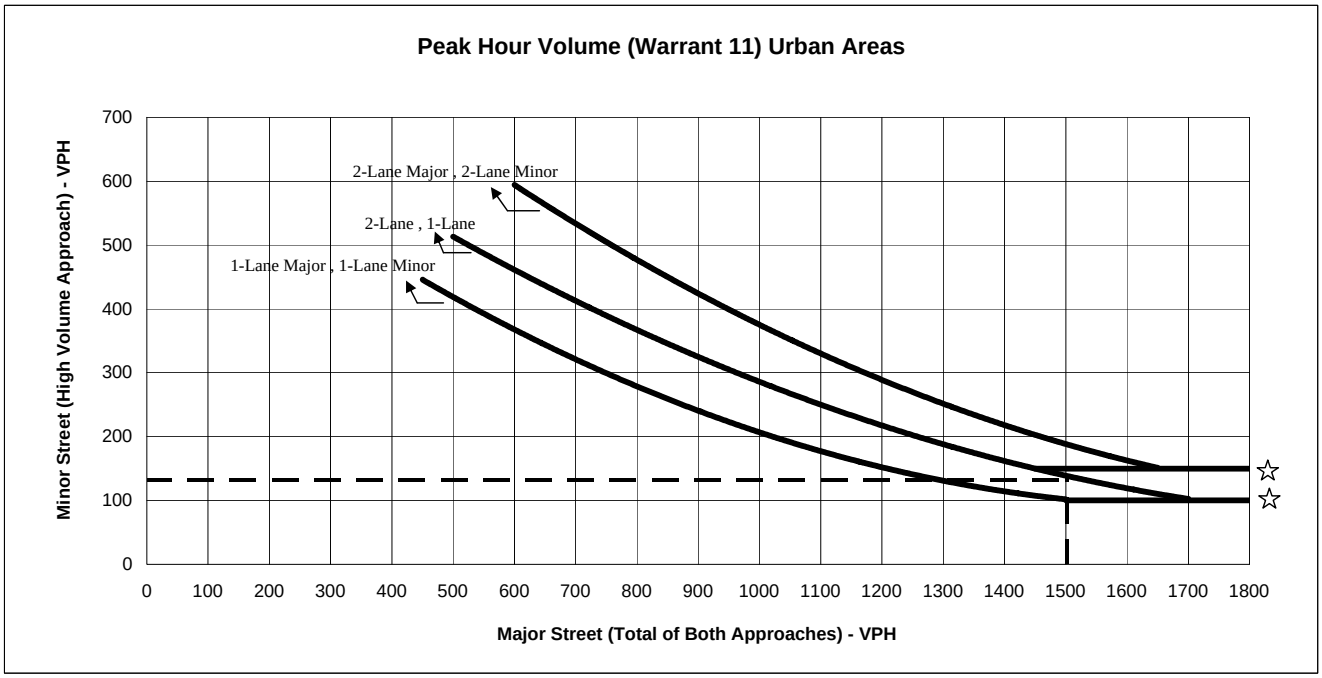


☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Forest Avenue/Talbert_Whittmeier Drive
Scenario:	2018 No Project PM Peak Hour Conditions
Minor St. Volume:	118
Major St. Volume:	1688
Warrant Met?:	YES

Both 1 Lane Approaches		2 or more Lane and One Lane Approaches		Both 2 or more Lane Approaches	
Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach	Major Street Total of Both Approaches	Minor Street High Volume Approach
500	420	500	505	500	N/A
600	360	600	460	600	590
700	325	700	420	700	540
800	285	800	360	800	475
900	245	900	325	900	425
1000	200	1000	285	1000	370
1100	175	1100	250	1100	340
1200	150	1200	220	1200	285
1300	130	1300	190	1300	250
1400	120	1400	155	1400	220
1500	100	1500	145	1500	180
1600	100	1600	120	1600	170
1700	100	1700	100	1650	150
1800	100	1800	100	1800	150

** Note: Values in Table are approximate, actual curves based upon 2nd order polynomial equation*



☆ NOTE:
150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Intersection:	Forest Avenue/Talbert_Whittmeier Drive
Scenario:	2018 No Project SAT Peak Hour Conditions
Minor St. Volume:	133
Major St. Volume:	1503
Warrant Met?:	YES

APPENDIX B2 - MEMORANDUM – WAL-MART SOUTH - DETERMINATION OF BANEY DRIVEWAY LOCATION

memorandum

Whitlock & Weinberger Transportation, Inc.

490 Mendocino Avenue
Suite 201
Santa Rosa, CA 95401

voice (707) 542-9500
fax (707) 542-9590

web www.w-trans.com

Date: September 28, 2006

To: **Mr. Fritz McKinley**
City of Chico

From: Steve Weinberger,PE

Project: CHI023

Subject: WalMart South - Determination of Baney Driveway Location

As requested, we have determined the required location of the driveway access for Wal-Mart based on an evaluation of the 2018 traffic volumes on Baney Lane and at Baney Lane/Forest Avenue which have been developed by Omni Means as part of the EIR traffic analysis.

Existing Conditions – There is approximately 290 feet separating the western crosswalk limit line at Forest Avenue to the eastern edge of the eastern Walmart driveway.

Forest/Baney Signal Requirements – Examination of 2018 plus Project(s) conditions and assuming an eastbound double left turn lane on Baney (to northbound Forest), the double left-turn lane will require storage for two (2) 175-foot left-turn lanes. These calculations are attached.

Walmart Eastern Driveway – Using an ITE methodology for determining queue lengths at unsignalized intersections, it was determined that the westbound left-turn on Baney (to southbound Walmart driveway) will require storage of 125 feet. These calculations are attached.

Total Separation between Forest Avenue (western crosswalk limit line) and Eastern Walmart Driveway (eastern edge) – The total separation should include 175 feet for eastbound left-turn, 90 feet of transition and 125 feet of westbound left-turn storage = 395 feet (diagram attached). These recommendations assume that the Galleria driveway near the Shell station is right-turn in/right-turn out only and the Walmart Eastern Driveway has channelization which prohibits left-turn movements out. Since the current plans include the existing 290 feet of separation, it is recommended that the project be conditioned to move the driveway west so that there is 395 feet of separation.

PM Peak Hour - 2018 Buildout Conditions
Nexus Traffic Study
City of Chico

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #35 Baney Ln/Forest Ave

Cycle (sec): 100 Critical Vol./Cap.(X): 0.605
Loss Time (sec): 16 (Y+R=0.0 sec) Average Delay (sec/veh): 28.6
Optimal Cycle: 58 Level Of Service: C

Street Name:	Forest Ave						Baney Ln					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 1	1 0		1 0 2	0 1		2 0 0	1 0		1 0 0	1 0	
Volume Module:												
Base Vol:	138	816	51	55	710	288	525	17	218	16	19	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	138	816	51	55	710	288	525	17	218	16	19	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	153	907	57	61	789	320	583	19	242	18	21	44
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	153	907	57	61	789	320	583	19	242	18	21	44
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	153	907	57	61	789	320	583	19	242	18	21	44
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.94	0.94	0.95	0.95	0.85	0.92	0.86	0.86	0.95	0.90	0.90
Lanes:	1.00	1.88	0.12	1.00	2.00	1.00	2.00	0.07	0.93	1.00	0.32	0.68
Final Sat.:	1805	3367	210	1805	3610	1615	3502	118	1518	1805	549	1157
Capacity Analysis Module:												
Vol/Sat:	0.08	0.27	0.27	0.03	0.22	0.20	0.17	0.16	0.16	0.01	0.04	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.14	0.45	0.45	0.06	0.36	0.36	0.28	0.32	0.32	0.02	0.06	0.06
Volume/Cap:	0.61	0.60	0.60	0.60	0.61	0.55	0.60	0.50	0.50	0.50	0.60	0.60
Delay/Veh:	44.5	21.7	21.7	56.1	27.0	26.6	32.6	28.3	28.3	59.2	55.0	55.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	44.5	21.7	21.7	56.1	27.0	26.6	32.6	28.3	28.3	59.2	55.0	55.0
LOS by Move:	D	C	C	E	C	C	C	C	C	E	D	D
HCM2k90thQ:	9	20	20	5	18	14	14	12	12	2	5	5

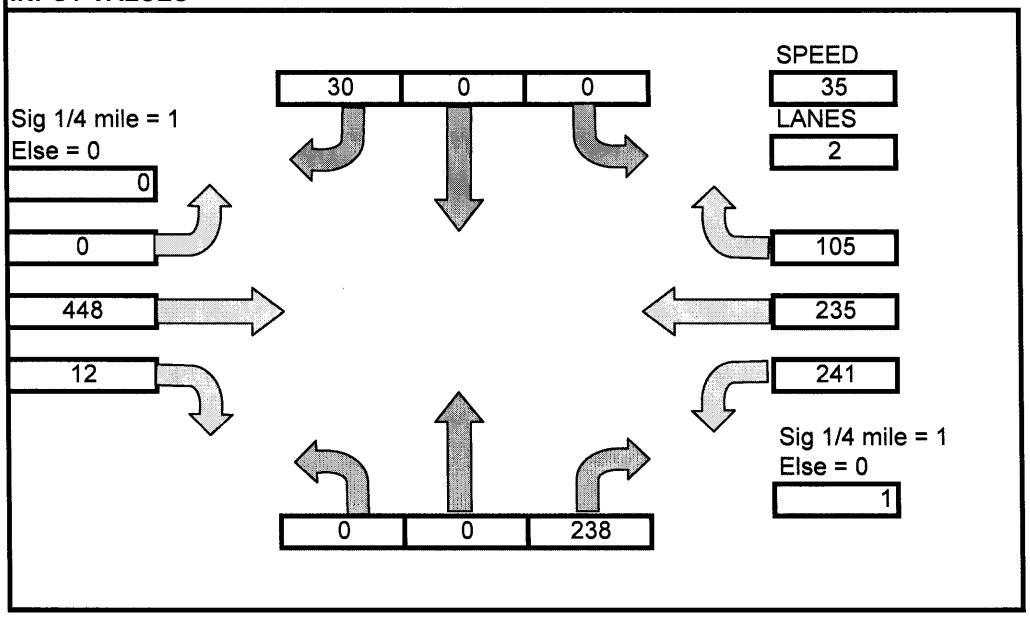
Note: Queue reported is the number of cars per lane.

Queue = 14 ÷ 2 lanes = 7 veh/lane
= 7 x 25 ft/veh = 175'

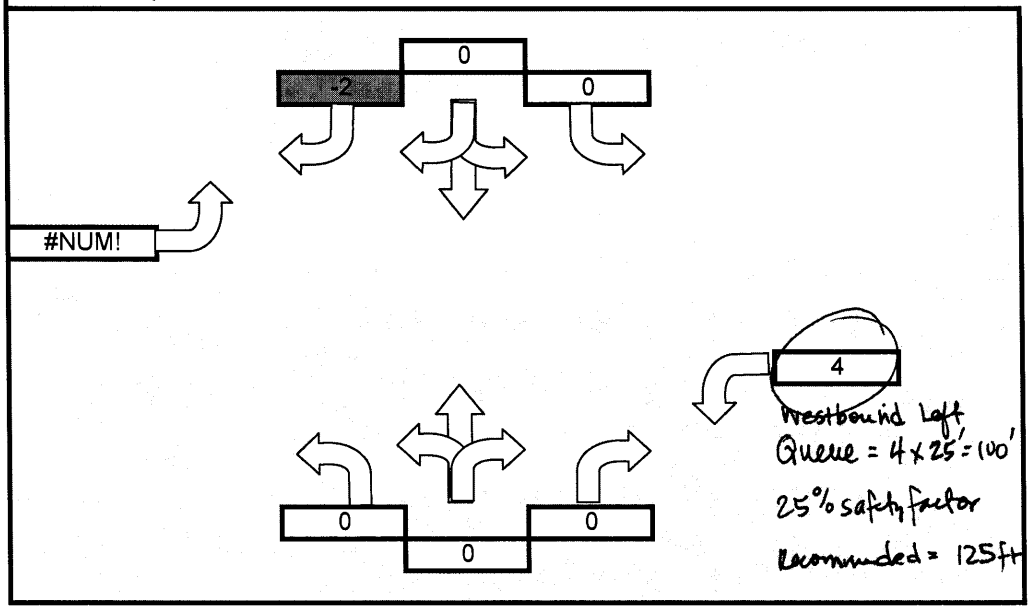
Maximum Queue Length
Unsignalized Intersections

LOCATION		CONDITION
Major Street	*Baney Lane*	Future Sat + Project
Minor Street	*WalMart Driveway East*	

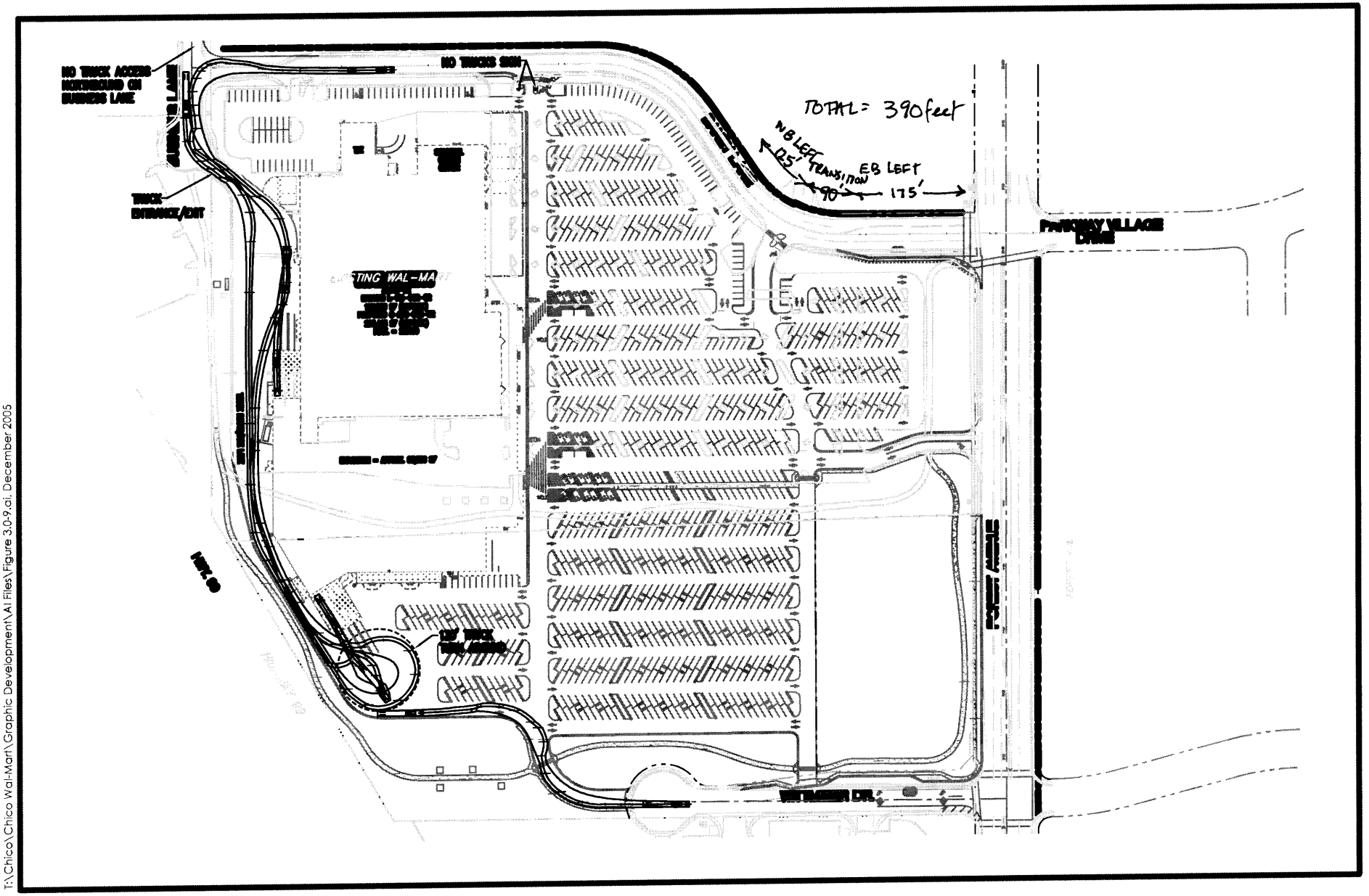
INPUT VALUES



MAXIMUM QUEUED VEHICLES



Source: John T. Gard, ITE Journal, November 2001
"Estimating Maximum Queue Length at Unsignalized Intersections"



T:\Chico\Chico Wal-Mart\Graphic Development\AI Files\Figure 3.0-9.ai, December 2005

FIGURE 3.0-9
FLOORPLAN

PMC

APPENDIX C - DRAFT AIR QUALITY ANALYSIS OF THE WAL-MART STORE EXPANSION PROJECT IN CHICO, CALIFORNIA

Draft Air Quality Analysis of the Wal-Mart Store Expansion Project in Chico, California

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Introduction

This report presents the results of an air quality analysis performed by Jones & Stokes for the proposed Chico Wal-Mart Store Expansion project in the City of Chico. The proposed project, as used in this report, refers to the proposed Chico Wal-Mart Store Expansion project. This technical report discusses the existing regional air quality conditions in the Northern Sacramento Valley, and evaluates the potential air quality impacts associated with the implementation of the proposed project. This report is provided to support the air quality analysis in accordance with the Butte County Air Quality Management District's Indirect Source Review Guidelines and the California Environmental Quality Act (CEQA) Statues and Guidelines.

Project Location and Description

The project site is located at 2044 Forest Avenue in the southern portion of the City of Chico, east of State Route 99, within Butte County. More specifically, the 27-acre project site is bounded by State Route 99 to the west, Baney Lane to the north, Forest Avenue to the east, and Talbert Drive to the south. The project applicant is proposing to expand the existing 125,889 sq. ft. Wal-Mart shopping center and adjacent parking containing 629 parking spaces.

The proposed project would provide for construction of an additional 97,124 sq. ft. to the south side of the existing 125,889 sq. ft. Wal-Mart store to create a 223,013 sq. ft. Wal-Mart Supercenter, that would include general consumer merchandise of household and soft goods, automotive, electronics, pharmacy, food, grocery, beverage, clothing, kitchen, hardware, sporting goods and other merchandise of all kinds. The parking lot would be expanded to the south of the existing lot adding 505 parking spaces, which would bring the total of 1,134 parking spaces on the project site. In addition, the site has a 2.42-acre parcel that will be developed in the future as a 5,000 sq. ft. fast food restaurant with a drive-through and gasoline/service station with 12 fueling stations. This air quality report includes the impact analysis of the proposed Wal-Mart store expansion, the fast food restaurant, and the gasoline/service station.

Setting

Environmental Setting

Climate and Meteorological Conditions

The project is located in Chico, in Butte County, in the Northern Sacramento Valley Air Basin (NSVAB). Chico lies in the middle of the Sacramento Valley, 100 miles northeast of Sacramento and 230 feet above sea level. The area has a moderate year-round climate where the average daily temperature remains above freezing and winds have a mean

hourly speed of 10 miles per hour. The average annual temperature is around 62ºF, and the annual precipitation averages about 26 inches (WRCC 2006).

The NSVAB may be described as a bowl, bound on the north and west by the Coastal Mountain Ranges and on the east by the southern portion of the Cascade Range and the northern portion of the Sierra Nevada. These mountain ranges reach heights in excess of 6,000 feet above sea level. During summer, the wide, flat expanse of the Sacramento Valley provides an ideal environment for the formation of photochemical smog. In addition, the prevailing winds in the Sacramento Valley blow from south to north, driven by the marine air traveling through the Carquinez Strait. These winds can transport pollutants from the broader Sacramento area and from the San Francisco Bay Area to the NSVAB. The mountain ranges that surround the NSVAB provide a physical barrier to continued movement of the air mass, thereby significantly hindering the dispersal of pollutants.

Federal and State Ambient Air Quality Standards

The federal and state governments have established ambient air quality standards for seven pollutants called "criteria" pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns in diameter (PM10), particulate matter less than 2.5 microns in diameter (PM2.5), and lead (see Table 1). The State of California has also established ambient standards for lead, hydrogen sulfide (H_2S), vinyl chloride, and sulfates. Ozone and NO_2 are considered to be regional pollutants because they or their precursors affect air quality on a regional scale: NO_2 reacts photochemically with reactive organic gases (ROG) to form ozone, and this reaction occurs at some distance downwind of the source of pollutants. Pollutants such as CO, PM10, and PM2.5 are considered to be local pollutants because they tend to disperse rapidly with distance from the source. The health effects of the pollutants of concern are discussed below. Table 1 shows the state and federal standards for a variety of pollutants.

Existing Air Quality Conditions in Chico

Air quality monitoring data for the Chico area are summarized in Table 2. These data are the most recent available, from the 2003-2005 monitoring period. Chico experienced occasional violations of the state ozone standard during the 3-year monitoring period. The federal and state CO standards were not violated. The state 24-hour PM10 standard was exceeded five times in 2004 and 2005; the state annual PM10 standard of 20 micrograms per cubic meter ($\mu g/m^3$) was also exceeded. The federal 24-hour PM2.5 standard was never exceeded at any time during the monitoring period.

If a pollutant concentration is lower than the state or federal standard, the area is classified as being in *attainment* for that pollutant. If a pollutant violates the standard, the area is considered a *nonattainment* area. If data are insufficient to determine whether a pollutant is violating the standard, the area is designated *unclassified*. Butte County is classified as a nonattainment area for the state, federal 1-hour ozone standards, the federal 8-hour standards, and the state PM10 standard. The county is in attainment for state and federal CO standards.

Table 1. Ambient Air Quality Standards in California and Attainment Status of Butte County

Pollutant	Average Time	Standard (parts per million)		Standard (micrograms per cubic meter)		Violation Criteria		Attainment Status of Butte County	
		Cal.	U.S.	Cal.	U.S.	Cal.	U.S.	Cal.	U.S.
Ozone (O_3)	1 hour	0.09	0.12	180	235	If exceeded	If exceeded on more than 3 days in 3 years	Non-attainment	Non-attainment
	8 hours	0.07	0.08	NA	157	NA	If exceeds 4th highest 8-hour concentration in a year, averaged over 3 years	Designation to be Determined	Non-attainment
Carbon monoxide (CO)	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded on more than 1 day/year	Attainment	Unclassified/Attainment
	1 hour	20	35	23,000	40,000	If exceeded	If exceeded on more than 1 day/year	Attainment	Unclassified/Attainment
Nitrogen dioxide (NO_2)	Annual average	NA	0.053	NA	100	NA	If exceeded	No state standard	Unclassified/Attainment
	1 hour	0.25	NA	470	NA	If exceeded	If exceeded	Attainment	No federal standard
Sulfur dioxide (SO_2)	Annual average	NA	0.03	NA	80	NA	If exceeded	No state standard	Attainment
	24 hours	0.04	0.14	105	365	If exceeded	If exceeded on more than 1 day/ year	Attainment	Attainment
	1 hour	0.25	NA	655	NA	NA	NA	Attainment	No federal standard
Hydrogen sulfide (H_2S)	1 hour	0.03	NA	42	NA	If equaled or exceeded	NA	Unclassified	No federal standard
Vinyl chloride (C_2H_3Cl)	24 hours	0.010	NA	26	NA	If equaled or exceeded	NA	No designation	No federal standard
Inhalable particulate matter (PM10)	Annual mean	NA	NA	20	50	If exceeded	If exceeded	Non-attainment	Non-attainment
	24 hours	NA	NA	50	150	If exceeded	If average 1% over 3 years is exceeded	Non-attainment	Non-attainment
Inhalable particulate matter (PM2.5)	Annual mean	NA	NA	12	15	If exceeded	If exceeded	Non-attainment	Designation to be Determined
	24 hours	NA	NA	NA	65	NA	If average 2% over 3 years is exceeded	Non-attainment	Designation to be Determined
Sulfate particles (SO_4)	24 hours	NA	NA	25	NA	If equaled or exceeded	NA	Attainment	No federal standard
Lead particles (Pb)	Calendar quarter	NA	NA	NA	1.5	NA	If exceeded no more than 1 day/year	No state standard	No designation
	30 days	NA	NA	1.5	NA	If equaled or exceeded	NA	Attainment	No federal standard

Notes:
All standards are based on measurements at 25ºC and 1 atmosphere pressure.
National standards shown are the primary (health effects) standards.
NA = not applicable.

Source: ARB, "Area Designations for State and National Ambient Air Quality Standards."

Table 2. Ambient Air Quality Monitoring Data from Chico – Manzanita Avenue Monitoring Station

Pollutant Standards	2003	2004	2005
Ozone			
Maximum 1-hour concentration (ppm)	0.092	0.088	0.083
Maximum 8-hour concentration (ppm)	0.076	0.073	0.077
Number of Days Standard Exceeded			
NAAQS 1-hour (>0.12 ppm)	0	0	0
CAAQS 1-hour (>0.09 ppm)	0	0	0
NAAQS 8-hour (>0.08 ppm)	0	0	0
Nitrogen Dioxide (NO_2)			
Maximum 1-hour concentration (ppm)	0.057	0.056	0.048
CAAQS 1-hour (>0.25 ppm)	0	0	0
Annual average concentration (ppm)	0.011	0.011	0.009
Carbon Monoxide (CO)			
Maximum 1-hour concentration (ppm)	NA	NA	NA
Maximum 8-hour concentration (ppm)	2.54	2.86	2.74
Number of Days Standard Exceeded			
NAAQS 8-hour (≥9.0 ppm)	0	0	0
CAAQS 8-hour (>9.0 ppm)	0	0	0
Particulate Matter (PM10)[a]			
Maximum 24-hour concentration ($\mu g/m^3$)	54.0	115.0	76.0
National[b] annual average concentration ($\mu g/m^3$)	12.2	28.1	23.4
State[c] annual average concentration ($\mu g/m^3$)	21.7	28.8	23.9
Number of Days Standard Exceeded			
NAAQS 24-hour (>150 $\mu g/m^3$)	0	0	0
CAAQS 24-hour (>50 $\mu g/m^3$)	1	5	5
Particulate Matter (PM2.5)			
Maximum 24-hour concentration ($\mu g/m^3$)	56.1	76.3	82.7
National [b] annual average concentration ($\mu g/m^3$)	10.5	15.1	12.3
State[c] annual average concentration ($\mu g/m^3$)	15.9	16.5	13.8
Number of Days Standard Exceeded			
NAAQS 24-hour (>65 $\mu g/m^3$)	0	0	1

Notes:

CAAQS = California Ambient Air Quality Standards.
NAAQS = National Ambient Air Quality Standards.
NA = Insufficient data available to determine the value.
[a] Measurements usually collected every six days.
[b] National annual average based on arithmetic mean.
[c] State annual average based on geometric mean.
[d] There was no monitoring for SO_2 in 2003, 2004, or 2005.

Sources: California Air Resources Board Internet site: http://www.arb.ca.gov/adam/cgi-bin/db2www/adamtop4b.d2w/start; EPA Internet site: http://www.epa.gov/air/data/geosel.html.

Once an area is designated as non-attainment for the federal 1-hour ozone standard, an air quality statistic termed the "design value" helps determine the magnitude of the non-attainment problem. Section 181(a) of the Federal Clean Air Act indicates the following non-attainment classification Design Value (ppm) for ozone:

- Marginal (0.121 up to 0.138),
- Moderate (0.138 up to 0.160),
- Serious (0.160 up to 0.180),
- Severe (0.180 up to 0.280), and
- Extreme (0.280 and above).

The State of California has designated Butte County as being a non-attainment area for both ozone and PM10. The EPA has designated Butte County as being a "Transitional" non-attainment area for 1-hour ozone, a "Basic" non-attainment area for 8-hour ozone and a non-attainment area for PM10. The Butte County is in attainment for the state and federal CO, NO_2, and SO_2 standards.

Ozone

Ozone is a respiratory irritant that increases susceptibility to respiratory infections. It is also an oxidant that can cause substantial damage to vegetation and other materials.

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, called reactive organic gases (ROG), and oxides of nitrogen (NO_x) react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem.

Ozone is a regional pollutant. Because photochemical reactions take time to occur, high ozone levels often occur downwind of the emission source. Because the predominant wind direction in the Sacramento Valley is from the south, Butte County is a receptor of regional pollutants, such as ozone, from the Sacramento area. Ozone conditions in Butte County therefore result from a combination of locally generated emissions and transported emissions.

State and federal standards for ozone have been set for a 1-hour averaging time. The state 1-hour ozone standard is 0.09 parts per million (ppm), not to be exceeded. The federal 1-hour ozone standard is 0.12 ppm, not to be exceeded more than three times in any 3-year period. EPA recently replaced the 1-hour ozone standard with an 8-hour standard of 0.08 ppm. EPA issued a final rule that will invoke the 1-hour standard on June 15, 2005. On April 28, 2005, the California Air Resources Board approved a new 8-hour ozone standard of 0.070 ppm, which took effect in 2006.

Carbon Monoxide

CO is a public health concern because it combines readily with hemoglobin and reduces the amount of oxygen transported in the bloodstream. CO can cause health problems such as fatigue, headache, confusion, dizziness, and even death.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground-level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emission rates at low air temperatures.

State and federal CO standards have been set for 1-hour and 8-hour averaging times. The state 1-hour standard is 20 ppm by volume, whereas the federal 1-hour standard is 35 ppm. Both state and federal standards for the 8-hour averaging period are 9 ppm.

Inhalable Particulate Matter

Particulates can damage human health and retard plant growth. Health concerns associated with suspended particulate matter focus on those particles small enough to reach the lungs when inhaled. Particulates also reduce visibility and corrode materials.

PM10 sources comprise both rural and urban sources, including agricultural burning, discing of agricultural fields, industrial emissions, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

The federal and state ambient air quality standard for particulate matter applies to two classes of particulates: particulate matter 2.5 microns or less in diameter (PM2.5) and PM10.

The state PM10 standards are 50 micrograms per cubic meter (μ/m^3) as a 24-hour average and 20 μ/m^3 as an annual geometric mean. The federal PM10 standards are 150 µ/m3 as a 24-hour average and 50 μ/m^3 as an annual arithmetic mean. The federal PM2.5 standards are 15 μ/m^3 for the annual average and 65 μ/m^3 for the 24-hour average. On June 20, 2002, the CARB adopted a new annual PM2.5 standard of 12 μ/m^3.

Toxic Air Contaminants

Although ambient air quality standards exist for criteria pollutants, no standards exist for TACs. TACs are a category of air pollutants that have been shown to have an impact on human health but are not classified as criteria pollutants. Many pollutants are identified as TACs because of their potential to increase the risk of developing cancer or because of their acute or chronic health risks. For TACs that are known or suspected carcinogens, the ARB has consistently found there are no levels or thresholds below which exposure is risk-free. Individual TACs vary greatly in the risk they present. At a given level of exposure, one TAC may pose a hazard that is many times greater than another. For certain TACs, a unit risk factor can be developed to evaluate cancer risk. For acute and chronic health risks, a similar factor called a Hazard Index is used to evaluate risk. In the early 1980s, the ARB established a statewide comprehensive air toxics program to reduce exposure to air toxics. Air toxics are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, and combustion sources; mobile sources, such as diesel trucks, ships and trains; and area sources, such as farms, landfills, and construction sites. Adverse health effects of TACs can be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, and long-term (chronic) noncarcinogenic.

Sensitive Land Uses

For the purposes of air quality analysis, sensitive land uses are defined as locations where people reside or where the presence of pollutant emissions could adversely affect the use of the land. There are residences located immediately east of the project site. The residential land is set back approximately 500 ft from the east of Forest Avenue.

Regulatory Setting

Federal

The federal Clean Air Act, enacted in 1970 and amended twice thereafter (including the 1990 amendment), establishes the framework for modern air pollution control. The act directs the U.S. Environmental Protection Agency (EPA) to establish ambient air standards for six pollutants: ozone, CO, lead, nitrogen dioxide, particulate matter, and sulfur dioxide. The standards are divided into primary and secondary standards; the former are set to protect human health within an adequate margin of safety and the latter to protect environmental values, such as plant and animal life.

The Clean Air Act requires states to submit a state implementation plan (SIP) for areas in nonattainment for federal air quality standards. The SIP, which is reviewed and approved by EPA, must demonstrate how the federal standards will be achieved. Failing to submit a plan or secure approval could lead to denial of federal funding and permits. In cases where the SIP is submitted by the state but fails to demonstrate achievement of the standards, EPA is directed to prepare a federal implementation plan.

State

Responsibility for achieving California's ambient air quality standards (CAAQS), which are more stringent than federal standards, is placed on the CARB and local air pollution control districts. State standards are to be achieved through district-level air quality management plans, called "clean air plans." These clean air plans are to be updated every 3 years, and they are the state's strategy for attaining the CAAQS.

The California Clean Air Act requires local and regional air pollution control districts that are not attaining one or more of the state ambient air quality standards for ozone, CO, SO_2, or NO_2 to expeditiously adopt plans specifically designed to attain these standards. Each plan must be designed to achieve an annual 5% reduction in district-wide emissions of each non-attainment pollutant or its precursors. CARB is responsible for developing plans and projects that achieve compliance with the state PM10 standards.

Although there are state ambient standards for lead, sulfates, vinyl chloride, and H_2S, the California Clean Air Act does not require that a plan be developed for them because these pollutants are not a problem in the state.

The CARB oversees the activities of the local air districts but does not issue permits for stationary sources of air pollutants, which is the responsibility of the districts. The CARB has the authority for setting vehicle emissions standards for on-road vehicles and for some off-road vehicles. In addition, the CARB identifies and sets control measures for toxic air contaminants.

California Toxic Air Contaminants

California regulates TACs primarily through the Tanner Air Toxics Act (AB1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588).

The Tanner Act sets forth a formal procedure for ARB to designate substances as TACs. This includes research, public participation, and scientific peer review before ARB designates a substance as a TAC. To date, ARB has identified 21 TACs, and has also adopted EPA's list of HAPs as TACs. Since August 1998, DPM was added to the ARB list of TACs (ARB 1998).

The Hot Spots Act requires that existing facilities that emit toxic substances above specified levels: (1) prepare a toxic emission inventory; (2) prepare a risk assessment if emissions are significant (i.e. 10 tons per year or on District's HRA list); (3) notify the public of significant risk levels; and (4) prepare and implement risk reduction measures.

In September 2000, the ARB approved the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Diesel Risk Reduction Plan) (ARB 2000). The Diesel Risk Reduction Plan outlines a comprehensive and ambitious program that includes the development of numerous new control measures over the next several years aimed at substantially reducing emissions from new and existing on-road vehicles (e.g., heavy-duty trucks and buses), off-road equipment (e.g., graders, tractors, forklifts, sweepers, and boats), portable equipment (e.g., pumps), and stationary engines (e.g., stand-by power generators). According to the Plan, ARB will work with the heavy-duty truck companies and operators to develop an emission reduction program for trucks.

Local

At the local level, responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of environmental documents required by CEQA. Air quality is managed through land use and development planning practices. These practices are implemented in Butte County through the general planning process primarily of the municipalities and Butte County. The Butte County AQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws but does not have any land use or development planning authority.

The air quality management agencies of direct importance in Butte County include EPA, ARB, and the Butte County AQMD. EPA has established federal ambient air quality standards for which ARB and the Butte County AQMD have primary implementation responsibility. ARB and the Butte County AQMD are also responsible for ensuring that state ambient air quality standards are met. The Butte County Association of Governments is coordinating with the Butte County AQMD to implement strategies for air quality improvement, through implementation of the Regional Transportation Plan.

Because of the regional nature of the ozone and PM10 conditions in the Sacramento Valley, the Butte County AQMD is also coordinating efforts with the Sacramento Valley Air Basin Control Council’s Technical Advisory Committee, the Sacramento Area Council of Governments, and the Sacramento Metropolitan AQMD.

Impact Analysis

This section describes the CEQA impact analysis relating to air quality for the proposed project. It describes the methods used to determine the project's impacts and lists the thresholds used to conclude whether an impact would be significant. Measures to mitigate (avoid, minimize, rectify, reduce, eliminate, or compensate for) significant impacts accompany each impact discussion.

Methods

The proposed project would generate construction-related emissions and operational emissions. The methods used to evaluate construction and operational impacts are described below.

Construction Impact Assessment Methods

Construction of the proposed project would result in the temporary generation of emissions of ROG, NO_x, and PM10. Emissions would originate from construction equipment exhaust, employee vehicle exhaust, dust from clearing the land, exposed soil eroded by wind, and volatile organic compounds (VOCs) from asphalt paving. Construction-related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content.

Construction of the proposed project would result in the temporary generation of emissions of CO, ROG, NO_X, and PM10. Emissions would originate from mobile and stationary construction equipment exhaust, employee vehicle exhaust, dust from clearing the land, exposed soil eroded by wind, and VOCs from architectural coatings, and asphalt paving. Construction-related emissions would vary substantially depending on the level of activity, length of the construction period, specific construction operations, types of equipment, number of personnel, wind and precipitation conditions, and soil moisture content.

Construction-related emissions were estimated and analyzed using URBEMIS2002, which is a computer program used to estimate emissions from construction, vehicle trips, and fuel use resulting from land use development projects. To estimate construction emissions, URBEMIS2002 analyzes the type of construction equipment used and the duration of the construction period. A detailed inventory of construction equipment that would be used for the proposed project was not provided; therefore, this analysis is based on anticipated construction equipment calculated by URBEMIS2002 that would be used during construction activities.

Area Source and Vehicular Emissions from Project Operation

The primary operational emissions associated with the project are CO, PM10, and ozone precursors emitted as vehicle exhaust. The effects of CO emissions were evaluated through CO dispersion modeling, while emissions of PM10 and ozone precursors were evaluated using the URBEMIS2002 model. Both models are briefly described below.

URBEMIS Model

Traffic associated with the proposed project is the primary source of operation-related emissions of ROG, NOx, CO, and PM10. Emissions of criteria pollutants associated with development of new building space and increased vehicle trips were estimated using the URBEMIS 2002 model. Criteria pollutants associated with residential, commercial, and industrial development would be emitted from 1) natural gas combustion for water and space heating, 2) personal household product use, and 3) landscape maintenance equipment. In addition, criteria pollutants would be emitted in vehicle exhaust from increased passenger car trips. Emissions of ROG, NOx, CO, SOx and PM10 were estimated using the URBEMIS2002 model.

Carbon Monoxide Impacts at Congested Intersections

The CALINE4 Model

Localized increases in CO concentrations from vehicle congestion at intersections affected by development were modeled using the California Department of Transportation (Caltrans) CALINE4 line source dispersion model (Benson 1989). CO concentrations at intersections with level of service (LOS) D or worse near the vicinity of the project site were estimated using CALINE4. LOS is a measure of traffic delay, rated A-F, with F indicating the worst delay.

CO Modeling Procedures

Roadway and Traffic Conditions

Traffic volumes and operating conditions used in the modeling runs were obtained from the traffic analysis prepared by the project traffic engineers, Omni-Means, Ltd. CO modeling was conducted using PM and Saturday peak-hour traffic volumes for build-out year 2010.

Vehicle Emission Rates

Vehicle emission rates were determined using the ARB Board's EMFAC2002 (version 2.2) emission rate program. The free flow vehicle traveling speed for the analyses was selected to be 1 mile per hour (mph) for links at the intersections. A slow speed of 1 mph was selected because it is the highest CO value as compared to all other speeds, including idling, estimated by the EMFAC2002 model.

Receptor Locations

CO concentrations were estimated at four receptor locations near the intersections. Receptors were chosen based on the CO protocol developed for Caltrans by the Institute of Transportation Studies at the University of California, Davis (Garza et al. 1997), and were located 3 meters from the edge of the intersection in all directions to represent a worst-case scenario. Receptor heights were set at 5.9 feet.

Meteorological Conditions

Meteorological inputs to the CALINE4 model were determined using methodology recommended in the CO protocol (Garza et al. 1997). The meteorological conditions used in the modeling represent a calm winter period. The worst-case wind angles option was used to determine a worst-case concentration for each receptor. The meteorological inputs include: 1 meter per second wind speed, ground-level temperature inversion (atmospheric stability class G), wind direction standard deviation equal to five degrees, and a mixing height of 1,000 meters.

Background Concentrations and 8-Hour Values

A background concentration of 2.9 ppm was added to the modeled 2010 1-hour values to account for sources of CO not included in the modeling. Eight-hour modeled values were calculated from the 1-hour values using a persistence factor of 0.7. Background concentration of 4.3 ppm was added to the modeled 2010 8-hour values. All background concentration data were taken from the monitoring data provided by the ARB (California Air Resources Board 2006). Actual 1-hour and 8-hour background concentrations would likely be lower than those used in the CO modeling analysis because the average value for the previous three years was applied as background concentrations, and background levels of CO are anticipated to lower as older, more polluting vehicles are replaced with cleaner, less polluting vehicles.

Toxic Air Contaminant Emissions from Project Operation

Diesel Risk Characterization

Since diesel particulate matter has been identified as a toxic air contaminant, the CARB adopted an Airborne Toxic Control Measure (ATCM) for idling trucks and transport refrigeration units generator sets on refrigerated trucks. The proposed project would include the shopping center, the fast food restaurant, and the gasoline/service station where several diesel-powered delivery truck trips are expected to occur daily.

Transport Refrigeration Units (TRUs) are refrigeration systems powered by diesel internal combustion engines designed to refrigerate or heat perishable products that are transported in various containers, including semi-trailers, truck

vans, shipping containers, and rail cars. Although TRU engines are relatively small, ranging from 9 to 36 horsepower, significant numbers of these engines congregate at distribution docks, truck stops, and other facilities, resulting in the potential for health risks to those that live and work nearby.

Benzene Risk Characterization

Gasoline service station is also a source of TAC emission. Benzene is the main source of vapor emission from fueling stations, resulting in the potential for health risks to those that live and work nearby.

Criteria for Determining Significance

Based on the State CEQA Guidelines and professional standards, a project would result in a significant impact on air quality if it would

- conflict with or obstruct implementation of the applicable air quality management plan;
- violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors);
- expose sensitive receptors to substantial pollutant concentrations; or
- create objectionable odors affecting a substantial number of people.

Thresholds for Criteria Pollutant Impacts

In addition to the above significant criteria, emission thresholds are contained in the Indirect Source Review Guidelines produced by the Butte County AQMD (Butte County AQMD, 1997). The Butte County AQMD has three levels of emission thresholds, and depending on the emissions produced from the proposed project, different mitigation measures would be required at different levels. Emission thresholds are presented in Table 3.

Level A: Indirect sources which have the potential to emit less than 25 pounds per day of ROG or NOx, or less than 80 pounds per day of PM10, would be subject to the recommended list of standard mitigation measure unless exempted in writing by the applicable planning agency. Developers would be required to coordinate with the planning agencies to identify feasible mitigation measures.

Level B: Indirect sources which have the potential to emit 25 pounds per day of ROG or NOx, or 80 pounds per day of PM10, would select as many supplemental mitigation measures as are feasible, in addition to the recommended list of standard mitigation

measures. Developers would be required to coordinate with the planning agencies to identify feasible mitigation measures.

Level C: Indirect sources which have the potential to emit 137 pounds per day or greater of ROG, NOx, or PM10, would select as many supplemental mitigation measures as are feasible, in addition to the recommended list of standard mitigation measures. Developers would be required to coordinate with the planning agencies to identify feasible mitigation measures. Depending on factors specific to the project, an environmental impact report may also be necessary under the California Environment Quality Act (CEQA).

Table 3. Emission Action Level Thresholds

Impact Level	Daily Emissions in Pounds per Day			Action
	ROG	NOx	PM10	
Level A	< 25	< 25	< 80	Subject to standard mitigation measures
Level B	25 - 137	25 - 137	80 - 137	Subject to standard and supplemental mitigation measures
Level C	>137	>137	>137	Subject to standard and supplemental mitigation measures. Subject to Environmental Impact Report.

Local Micro-scale Concentration Standards

The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase one hour CO concentrations by 1.0 part per million (ppm) or more or eight hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for carbon monoxide.

- California State one-hour CO standard of 20.0 ppm
- California State eight-hour CO standard of 9.0 ppm

Thresholds for Odor Impacts

Assessing odor impacts depends upon such variables as wind speed, wind direction, and the sensitivity of receptors to different odors. The American Society of Testing Materials (ASTM, Standard Method D 1391) has devised a method that considers how many times an air sample must be diluted with "clean" air before the odor is no longer detectable to an average adult with average odor sensitivity. The number of dilutions needed to reach this threshold level is referred to as a "dilution to threshold" (D/T) factor. An odor with a D/T of 2 (2 parts of fresh air to one part of odorous air) becomes faintly detectable to

almost all receptors. At 5 D/T, people become consciously aware of the presence of an odor, and at 5 to 10 D/T, the odor is strong enough to evoke registered complaints. The standard to utilize in assessing off-site odor exposure is preferably below 5 D/T and acceptable below 10 D/T.

Thresholds for Toxic Air Contaminants

The Butte County AQMD regulates levels of air toxics through a permitting process that covers both construction and operation. The Butte County AQMD has adopted Rule 1000 for both new and modified sources that use materials classified as air toxics. The Butte County AQMD CEQA Guidelines for permit processing consider the following types of projects significant:

• Any project that could accidentally release an acutely hazardous material or routinely release a toxic air contaminant posing an acute health hazard; and

• Any project that could emit an air contaminant that is not currently regulated by AQMD rule, but that is on the federal or State air toxics list.

Impacts and Mitigation Measures

Impact AQ-1: Temporary Increase in Construction-Related Emissions during Grading and Construction Activities

Emissions of pollutants generated during construction include fugitive dust and equipment tailpipe emissions of NO_X, CO, and ROG that are generated during construction are generally highest near the construction site. Emissions from the construction activities of the project were estimated using the URBEMIS2002 model. It was estimated that the project construction would require a total of 12 months in 2007 to complete. To estimate fugitive dust emissions associated with site grading, it was assumed that a maximum of 1.2 acres (11% of the total acreage) would be disturbed on a single day.

Construction activities for the proposed project would result in short-term impacts on ambient air quality in the area. Temporary construction emissions would result directly from grading and site preparation activities, and indirectly from construction equipment emissions and construction worker commuting patterns. Pollutant emissions would vary from day to day, depending on the level of activity, the specific operations, and the prevailing weather. It is anticipated that construction activities would continue for approximately 12 months.

Construction generally is broken down into three phases: a demolition phase, a grading/site clearing phase and a building phase. Construction-building phase emissions would result from material handling and heavy equipment operations. Because of the use of heavy construction equipment (with associated dust-generating potential), it is anticipated that site-grading activities would result in the highest daily fugitive dust generation.

Construction heavy equipment requirements and associated emissions were estimated based on URBEMIS2002 default values for site grading, building construction, and paving activities. Non-mitigated ROG emissions from architectural coatings were estimated assuming the facility wide average coatings exhibit a ROG content of 250 grams per liter (that ROG content corresponds to use of solvent-based coatings). Emissions associated with worker travel to the construction site and construction truck deliveries were estimated based on default values in the URBEMIS2002 model.

The project construction would be subject to the requirements of Butte County AQMD Regulation II, Rule 205 - Fugitive Dust Emissions, which requires the implementation of all standard measures to control fugitive dust. The following list is representative of the control measures required under the Indirect Source Review Guidelines for construction and earthmoving activities, but is not intended to list every requirement.

I. PM10 Controls:

1. Use adequate dust control measures that are implemented in a timely and effective manner during all phases of project development and construction.

The following list provides an array of options, which can reduce fugitive dust emissions from construction activities.

a. Water all active construction sites at least twice daily. The frequency of watering should be based on the type of operation, soil, and wind exposure.
b. Use chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least 4 consecutive days).
c. Limit the speed of on-site vehicles to 15 mph on unpaved roads.
d. Suspend land clearing, grading, earth moving, or excavation activities when winds exceed 20 miles per hour.
e. Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut-and-fill operations, and hydroseed the area.
f. Plant vegetative ground cover in disturbed areas as soon as possible.
g. Cover inactive storage piles.
h. During initial grading, earth moving, or site preparation, construct a paved (or dust-palliative treated) apron, at least 100 feet long, onto the project site from the adjacent site.
i. Sweep or wash paved streets adjacent to the development site at the end of each day as necessary to remove excessive accumulations of silt and/or mud that may have accumulated as a result of activities on the development site.
j. Post a publicly visible sign with the telephone number and person to contact regarding dust complaints. This person will respond and take corrective action within 24 hours. The telephone number of the Butte County AQMD will also be

visible to ensure compliance with the Butte County AQMD Rules 200 & 205 (Nuisance and Fugitive Dust Emissions).

k. Before final occupancy, demonstrate that all ground surfaces are covered or treated sufficiently to minimize fugitive dust emissions.

II. Streets:

a. Temporary traffic control as appropriate during all phases of construction to improve traffic flow as deemed appropriate by the Department of Public Works and/or Caltrans.

b. Scheduled construction activities that direct traffic flow to off-peak hours as much as practicable.

For purposes of applying mitigation measures in the URBEMIS 2002 model, it was assumed that all of the above dust control measures would be implemented as part of the project. Table 4 provides a summary of the maximum daily construction emission estimates for the construction phase of the proposed project. URBEMIS2002 model outputs are provided in Appendix A.

Table 4. Estimated Construction Emissions

Construction Activity	**Year**	**Maximum Daily Emissions (pounds)**				
		ROG	**NO_X**	**CO**	**SO_X**	**PM10[a]**
Demolition	2007	4.2	32.2	31.4	0.00	1.6
Site Grading	2007	6.1	38.0	51.8	0.00	13.5
Building Construction	2007	34.3	102.4	141.3	0.00	3.9
2007 Maximum Value		**34.3**	**102.4**	**141.3**	**0.00**	**15.8**
Significance Criteria – Impact Level B		>25	>25	--	--	>80
Significant? –Impact Level B		***Yes***	***Yes***	N/A	N/A	*No*
Significance Criteria – Impact Level C		>137	>137	--	--	>137
Significant? – Impact Level C		*No*	*No*	N/A	N/A	*No*
[a] PM10 emission includes the required fugitive dust control under Butte County AQMD.						

Source: California Air Resources Board—URBEMIS2002 Model.

As shown in Table 4, emissions of PM10 are below the significance thresholds for construction. There are no thresholds for CO and SO_X. ROG and NO_X emissions would exceed the significance thresholds for construction. Thus, construction emissions exceed the Level B significance thresholds for ROG and NO_X criteria pollutants. This impact is considered significant. Implementation of Mitigation Measure AQ-1 is required by the Butte County AQMD as mitigation to reduce construction emissions.

Mitigation Measure AQ-1: Implement Construction Mitigation Measures to Reduce Construction Emissions

Contractors shall implement measures to reduce ROG and NO_X emissions from off-road construction equipment during construction activities. During construction, the following

measures shall be included in construction specifications, and implemented during construction.

- The contractor shall properly maintain equipment according to manufacturers' specifications.
- The contractor shall restrict the idling of construction equipment to no longer than 10 minutes.
- The contractor shall use only diesel equipment or diesel vehicles with engines built in 1996 or later.
- The contractor shall restrict off-road machinery to those pieces equipped with lean NOx engine settings where feasible.

It is recommended that the lead agency investigate the availability of off-road mobile sources equipped with cooled exhaust gas recirculation (EGR) and indicate the availability of these technologies. Currently, the availability of these technologies is relatively limited, so they may not be available for use by the project proponent. Based on the possibility that technologies to mitigate mobile source emissions may not be available, the lead agency needs to document their availability. Alternatively, a more conservation approach would be to turn off these mitigation measures and not take credit for control efficiencies associated with them.

Building Contractors shall implement measures to reduce ROG emissions from architectural coatings. Building contractors should be required to use water-based coatings for both exterior and interior walls on all building structures. The recommend average solvent content for architectural coatings is approximately 6 grams per liter. That ROG content corresponds to using water-based coatings for everything other than limited specialty uses.
Table 5 provides a summary of the mitigated emission estimates for the construction phase of the proposed project. URBEMIS2002 model outputs are provided in Appendix A.

Table 5. Mitigated Construction Emissions

Construction Activity	**Year**	**Maximum Daily Emissions (pounds)**				
		ROG	**NO_X**	**CO**	**SO_X**	**PM10[a]**
Demolition	2007	4.2	22.2	31.4	0.0	0.7
Site Grading	2007	6.1	26.2	51.8	0.0	0.8
Building Construction	2007	34.3	70.5	141.3	0.0	1.5
2007 Maximum Value		**34.3**	**70.5**	**141.3**	**0.0**	**1.6**
Significance Criteria – Impact Level B		>25	>25	--	--	>80
Significant? –Impact Level B		***Yes***	***Yes***	N/A	N/A	*No*
Significance Criteria – Impact Level C		>137	>137	--	--	>137
Significant? – Impact Level C		*No*	*No*	N/A	N/A	*No*
[a] PM10 emission includes the required fugitive dust control under Butte County AQMD.						

Source: California Air Resources Board—URBEMIS2002 Model.

As shown in Table 5, with implementation of the Mitigation Measure Air-1, mitigated construction emissions would lower the NOx emissions. However, the project construction emissions of ROG and NOx would still result in a *significant adverse impact* (Level B) on air quality that cannot be avoided.

Impact AQ-2: Potential TAC Emissions in Construction-Related Diesel Health Risk

Diesel particulate matter is considered a carcinogenic by California regulatory agencies, and it is recognized that sensitive receivers exposed to high concentrations of diesel particulate matter for many years of duration could experience a significant cancer risk. An example of such a significant cancer risk would be people living for many years next to a heavily used railroad yard. However, it is highly unlikely that off-site receptors downwind of temporary construction sites would experience any significant cancer risk directly associated with diesel emissions from the construction project.

The assessment of human health cancer risk is typically based on a 70-year exposure period. Construction activities are sporadic, transitory, and short-term in nature, and once construction activities have ceased, so too have emissions from construction activities. Because the duration of exposure to diesel exhaust during the temporary construction projects will be much shorter than the assumed 70-year exposure period used to estimate lifetime cancer risks, construction of the proposed project is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature construction-related diesel exposure. It is estimated that construction activities for the project would continue for approximately 12 months, and most of the diesel emissions would occur during site grading and building construction.

In addition, Table 4 indicates that PM10 emissions from diesel equipment are relatively low and well below the Butte County AQMD's daily threshold of 80 pounds per day. Consequently, the human health impact of diesel risks associated with construction activities is considered to be less than significant. No mitigation is required.

Impact AQ-3: Temporary Increase in Construction-Related Odor Emissions

The project would generate temporary, localized odors during the construction phases, similar to any other construction project in the city. Odors would be generated by tailpipe emissions from diesel powered construction equipment, and during paving and painting operations. Odor impacts would be temporary and limited to the area adjacent to the construction operation. Odors would not impact a substantial number of residences for an extended period of time. Therefore, odor impacts would be less than significant. No mitigation is required.

Impact AQ-4: Potential Increase in ROG and NO_x Emissions from Mobile and Area Sources during Project Operation

The main operational impacts associated with the proposed project would be mainly associated with project-related traffic. Minor air quality impacts would be associated with area sources, such as space heating and landscaping.

The proposed project would produce long term emissions from vehicle trips generated by the new and expanded retail land uses. Emissions associated with new vehicle trips were estimated based on the land uses of the proposed project, such as an addition of 97,124 sq. ft. to the south side of the existing Wal-Mart store, a 5,000 sq. ft. fast food restaurant with a drive-through and a gasoline/service station with 12 fueling stations. The trip generation rates for these proposed land uses were based on the default values in the URVEMIS2002 model.

To estimate emissions associated with proposed project operations, the URBEMIS2002 model was used. Operational emissions were modeled for maximum daily emissions at build-out condition year 2010. The URBEMIS2002 model outputs are presented in Appendix A. Emissions associated with landscaping and energy use were also included in the area source emission estimates. Table 6 presents the total operational emissions anticipated from the project.

Table 6. Estimated Operational Emissions (2010 Full Buildout Conditions)

	Maximum Daily Emissions (pounds per day)				
	ROG	**NO_X**	**CO**	**SO_X**	**PM10**
Summer Period					
Area Source Emissions	0.45	1.01	3.18	0.00	0.01
Vehicular Emissions	51.90	47.33	577.04	0.41	58.41
Total Emissions	**52.34**	**48.34**	**580.21**	**0.41**	**58.42**
Winter Period					
Area Source Emissions	0.07	1.00	0.84	0.00	0.00
Vehicular Emissions	59.21	76.33	579.28	0.34	58.41
Total Emissions	**59.29**	**77.32**	**598.11**	**0.34**	**58.41**
Significance Criteria – Level B	>25	>25	--	--	>150
Significant? – Level B	***Yes***	***Yes***	N/A	N/A	*No*
Significance Criteria – Level C	>137	>137	--	--	>137
Significant? – Level C	*No*	*No*	N/A	N/A	*No*

Sources: California Air Resources Board—EMFAC2002 and URBEMIS 2002 Models.

As shown in Table 6, emissions of PM10 are below the significance thresholds for the proposed project operations. There are no thresholds for CO and SO_X. ROG and NO_X emissions would exceed the significance thresholds for the proposed project operations. Thus, operational emissions exceed the Level B significance thresholds for ROG and NO_X criteria pollutants. This impact is considered significant. Implementation of Mitigation Measure AQ-2 is required by the Butte County AQMD as mitigation to lower the operational emissions.

Mitigation Measure AQ-4: Implement Mitigation Measures to Reduce ROG and NOx Emissions

The project proponent shall coordinate with the Planning Agencies to implement the following feasible mitigation measures:

I. Energy Conservation:

a. Use of energy-efficient lighting (includes controls) and process systems such as water heaters, furnaces, and boiler units.

b. Use of energy-efficient and automated controls for air conditioning.

c. Orientation of building structures to the north for natural cooling and the use of appropriate landscaping that maximizes the potential of passive solar design principles.

d. Fleet vehicles that use clean-burning fuels as may be practicable.

e. Use of solar water heater for at least 25 percent of the building floor area.

f. Improve the thermal efficiency of commercial and industrial structures as appropriate by: (1) reducing thermal load with automated and timed temperature controls or (2) occupancy load limits.

g. Incorporate shade trees, adequate in number and proportional to the project size, throughout the project site to reduce building heating and cooling requirements.

II. Ancillary Services:

a. On-site services such as cafeterias, food vending machines, automatic tellers, etc., as appropriate and in compliance with local development regulations.

III. Transit:

b. Transit-use incentives, as approved by applicable transportation planning agencies, such as subsidized transit passes and accommodation of unusual work schedules to encourage transit use.

c. On-site/off-site bus turnouts, passenger benches, or shelters where deemed appropriate by local transportation planning agencies.

d. Interior major streets to serve the main entrances to buildings.

Table 7 provides a summary of the mitigated emission estimates for the operational phase of the proposed project.

Table 7. Mitigated Operational Emissions (2010 Full Build out Conditions with Mitigation Measures)

	Maximum Daily Emissions (pounds per day)				
	ROG	**NO_X**	**CO**	**SO_X**	**PM10**
Summer Period					
Area Source Emissions	0.45	1.01	3.18	0.00	0.01
Vehicular Emissions	51.90	47.33	577.04	0.41	58.41
Total Emissions	**52.34**	**48.34**	**580.21**	**0.41**	**58.42**
Winter Period					
Area Source Emissions	0.07	1.00	0.84	0.00	0.00
Vehicular Emissions	59.21	76.33	579.28	0.34	58.41
Total Emissions	**59.29**	**77.32**	**598.11**	**0.34**	**58.41**
Significance Criteria – Level B	>25	>25	--	--	>150
Significant? – Level B	***Yes***	***Yes***	N/A	N/A	*No*
Significance Criteria – Level C	>137	>137	--	--	>137
Significant? – Level C	*No*	*No*	N/A	N/A	*No*

Sources: California Air Resources Board—EMFAC2002 and URBEMIS 2002 Models.

As shown in Table 7, with implementation of the Mitigation Measure AQ-2, mitigated operational emissions would lower the NOx emissions. However, the project operation emissions of ROG and NOx would still result in a *significant adverse impact* (Level B) on air quality that cannot be avoided.

Impact AQ-5: Potential for Local CO Concentrations at Nearby Intersections

Traffic Related CO Concentrations (CO Hot Spot Analysis)

Project-generated vehicle trips would increase traffic volumes at roadway intersections in the project site vicinity once the project became operational. During periods of near-calm winds, heavily congested intersections can produce elevated levels of CO that could potentially impact nearby sensitive receptors. Therefore, a CO hot spot analysis was conducted to determine whether the Proposed Project would contribute to a violation of the ambient air quality standards for CO at any local intersections.

The Transportation Project-Level Carbon Monoxide Protocol (Garza et al. 1997) was followed to determine whether a CO hot spot is likely to form due to project-generated traffic. In accordance with the Protocol, CO hot spots are typically evaluated when (a) the level of service (LOS) of an intersection decreases to a LOS E or worse; (b) signalization and/or channelization is added to an intersection; and (c) sensitive receptors such as residences, commercial developments, schools, hospitals, etc. are located in the vicinity of the affected intersection. In general, CO hot spots would be anticipated near affected intersections because operation of vehicles in the vicinity of congested intersections involves vehicle stopping and idling for extended periods.

Three intersections with LOS E or F and having high PM and Saturday peak hour volumes under 2010 with project conditions were modeled for CO impacts because they represent worst case conditions (Omni-Means, Ltd. 2006). For the purposes of providing

a worst-case analysis, CO concentrations have been modeled at sidewalk locations adjacent to these study intersections. The three selected intersections are listed below:

- East 20th Street and SR 99 Freeway Northbound Ramps
- East 20th Street and Forest Avenue
- Skyway and Notre Dame Boulevard

The analysis was conducted using the CALINE4 line source dispersion model. Input parameters required for the CALINE4 model include traffic volumes, CO emission factors, receptor locations, meteorological conditions, and background concentrations. The evening peak-hour traffic volumes that include the proposed and cumulative project-generated traffic were modeled. The EMFAC2002 emission rate program was used to estimate CO emission factors in year 2010. EMFAC2002 model outputs are presented in Appendix B.

Meteorological inputs to the CALINE4 model were determined using methodology recommended in the CO Protocol (Garza et al. 1997). The meteorological conditions used in the modeling represent a calm winter period. The worst-case wind angles option was used to determine a worst-case concentration for each receptor.

A background concentration of 4.3 ppm was added to the modeled 1-hour values to account for sources of CO not included in the modeling. Eight-hour modeled values were calculated from the 1-hour values using a persistence factor of 0.7. A background concentration of 2.9 ppm was added to the modeled 8-hour values. All background concentration data were taken from the highest of the three recent years of monitoring data provided by CARB (CARB 2006) and USEPA (USEPA 2006).

Table 8 presents maximum 1-hour and 8-hour CO concentrations predicted at locations 3 meters from the edge of the intersection in all directions. The CALINE4 model outputs are presented in Appendix C.

Table 8. CO Modeling Concentrations (ppm)

	1-hour	8-hour	1-hour	8-hour
Intersection	**PM**	**PM**	**Sat**	**Sat**
E. 20th Street / SR 99 NB Ramp	7.7	5.3	7.5	5.1
E. 20th Street / Forest Avenue	7.2	4.9	7.5	5.1
Skyway / Notre Dame Blvd	7.8	5.3	7.8	5.3
CAAQS Standard	20.0	9.0	20.0	9.0
Significant?	*No*	*No*	*No*	*No*

Note: Background concentrations of 4.3 ppm and 2.9 ppm were added to the modeling 1-hour and 8-hour results, respectively.

The results show that the State one- and eight- hour standards of 20 ppm and 9 ppm, respectively, would not be exceeded at any of the three intersections. Therefore, the Proposed Project is not anticipated to significantly contribute to CO ambient concentration impacts. No violations of either the 1-hour or the 8-hour state CO standard were found. Therefore, this impact is considered less than significant. No mitigation is required.

Impact AQ-6: Potential Increase in TAC Emissions from Stationary and Mobile Sources during Project Operation

Delivery Trucks and TRUs

The potential toxic air contaminants impacts associated with the proposed project would be associated with diesel-powered delivery trucks, TRUs, and the gas service station. Diesel emissions from delivery trucks traffic and TRUs at the proposed project may result in elevated diesel PM concentrations in neighborhoods surrounding the site. To address whether the proposed project would result in diesel PM concentrations that would contribute substantial health risks to sensitive receptors in the neighborhood, the emissions associated with project-generated delivery truck traffic and TRUs were compared to the CARB significance criteria.

CARB significance criteria takes into account (1) the amount of daily truck traffic, and (2) the proximity of circulation routes and loading dock areas to sensitive receptor locations. Based on CARB project siting recommendations in their "Air Quality and Land Use Handbook," the project proponent should:

- Avoid siting new sensitive land uses within 1,000 feet of a distribution center (that accommodates more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units (TRUs) per day, or where TRU unit operations exceed 300 hours per week); and

- Take into account the configuration of existing distribution centers and avoid locating residences and other new sensitive land uses near entry and exit points.

According to the ARB siting recommendation (i.e., sensitive receptors no closer than 1,000 feet from facility that accommodates more than 100 trucks per day). If no residences, schools, convalescent homes, etc. are located (or proposed to be located) within 1,000 feet of this facility, then potential health effects are likely to be less-than-significant based on the ARB advisory recommendation; and as such, no health risk assessment is needed.

According to the Traffic Impact Study (Omni-Means, Ltd. 2006), the proposed project will have an average of 85 delivery trucks per week. The traffic data indicated that the total number of 12 to 13 trucks per day is below the CARB's 100 trucks per day threshold. Assuming that all delivery trucks will have TRUs, the total number of 12 to 13 TRU trucks per day would be below the CARB's 40 TRUs per day threshold. Also, assuming that all 85 trucks with TRUs per week will complete their delivery stops within 2 hours at the project site, an estimated total number of TRUs operating onsite would be approximately 170 hours per week, which is below the CARB advisory threshold of 300 hours per week. The nearest sensitive receptors are located more than 1,000 feet of the proposed project site, primarily because Wal-Mart Supercenter is more than 1,000 feet from Forest Avenue. Consequently, diesel emissions associated with the project were estimated as part of the PM10 emissions analysis but a diesel exhaust health risk assessment is not warranted by this project because the project is not expected to generate a significant number of diesel

truck trips and TRUs. Therefore, this impact is considered less than significant. No mitigation is required.

Gas Service Station

The proposed project may include a three-island vehicle fueling facility. Each island is usually designed with two double-sided gasoline dispensers, for a total of 12 fueling pumps. Scenario 6B of the California Air Pollution Control Officers Association (CAPCOA) Air Toxics "Hot Spots" Program Gasoline Service Station Industry wide Risk Assessment Guidelines was used to estimate benzene emissions that will result from the proposed gasoline station.

Benzene is the main TAC emission resulting from fueling stations. Benzene emissions results from the following four processes:

- Loading – Loading emissions occur when a cargo tank truck unloads gasoline to the storage tanks at the gasoline station. Storage tanks vapors are emitted from the vent pipe during the initial fuel transfer period. These emissions are significantly reduced when the vent pipe includes a pressure/vacuum valve.

- Breathing – Gasoline vapors are emitted from the storage tank vent pipe due to temperature and pressure changes within the storage tank vapor space.

- Refueling – During the refueling process, gasoline vapors are emitted at the vehicle/nozzle interface.

- Spillage – Spillage emissions occur from the spills during vehicle fueling.

At this time, the throughput level of the proposed fueling station is unknown. Operation of the proposed gas service station is expected to generate potential TAC vapor emissions. The proposed gas station will be required to comply with the Butte County AQMD's Regulation and Rules on an on-going basis. Prior to construction, the gas station will be required to obtain a permit and, possibly, a Health Risk Assessment. Since an AQMD permit will be required, this impact is considered less than significant.

Mitigation Measure AQ-6: Implement Mitigation Measures to Reduce TAC Emissions from Gas Station

The following mitigation measures shall be implemented:

a. Prior to construction, the gasoline dispensing facility will require a permit from the AQMD.

b. Prior to construction, a Health Risk Assessment may be required by the AQMD.

Impact AQ-7: Potential Increase in Odor Emissions from Stationary and Mobile Sources during Project Operation

Objectionable Odors from Passenger Vehicles and Diesel-powered Trucks

The project would generate potential odors and gaseous fumes by evaporative emissions and tailpipe emissions from passenger vehicles and diesel powered delivery trucks during operations. Odor impacts would be limited to the circulation routes and loading dock areas. Operation of the proposed project may create nuisance when located in close proximity to sensitive receptors. However, these potential odors are not expected to impact a substantial number of sensitive receptor land uses for an extended period of time, primarily because all sensitive receptors are more than 1,000 feet from the odor sources. Therefore, odor impacts would be less than significant. No mitigation is required.

Objectionable Odors from Fast Food Restaurant

The proposed project will include a fast food restaurant, which may emit food odors that may be perceived surrounding residents. These odors will be intermittent and very faint, and, like the construction odors, will likely disperse before being received by adjacent residences. The on-site restaurants would be required to comply on an on-going basis with City Department of Building and Safety and the Butte County Department of Environmental Health Services regulations concerning odors. Therefore, the proposed project is not expected to create objectionable odors. No mitigation is required.

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Appendix A – URBEMIS 2002 Model Analysis

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Walmart Superstore Project.urb
Project Name: Walmart Superstore Expansion Chico
Project Location: DEFAULT
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	34.27	102.39	141.28	0.00	15.81	3.81	12.00
TOTALS (lbs/day, mitigated)	34.27	70.52	141.28	0.00	1.62	1.41	0.21

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	0.45	1.01	3.18	0.00	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	51.90	47.33	577.04	0.41	58.41
TOTALS (lbs/day, mitigated)	44.09	39.76	484.45	0.34	48.97

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	52.34	48.34	580.21	0.41	58.42

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Walmart Superstore Project.urb
Project Name: Walmart Superstore Expansion Chico
Project Location: DEFAULT
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	34.27	102.39	141.28	0.00	15.81	3.81	12.00
TOTALS (lbs/day, mitigated)	34.27	70.52	141.28	0.00	1.62	1.41	0.21

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	0.07	1.00	0.84	0.00	0.00

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	59.21	76.33	597.28	0.34	58.41
TOTALS (lbs/day, mitigated)	49.95	64.09	502.37	0.28	48.97

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	59.29	77.32	598.11	0.34	58.41

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Walmart Superstore Project.urb
Project Name: Walmart Superstore Expansion Chico
Project Location: DEFAULT
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

Construction Start Month and Year: January, 2007
Construction Duration: 12
Total Land Use Area to be Developed: 4.7 acres
Maximum Acreage Disturbed Per Day: 1.2 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 103124

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.16	-	0.16
Off-Road Diesel	4.15	31.68	30.72	-	1.41	1.41	0.00
On-Road Diesel	0.03	0.54	0.10	0.00	0.01	0.01	0.00
Worker Trips	0.02	0.06	0.55	0.00	0.00	0.00	0.00
Maximum lbs/day	4.20	32.28	31.37	0.00	1.58	1.42	0.16
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	12.00	-	12.00
Off-Road Diesel	6.01	37.82	50.38	-	1.45	1.45	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.07	0.13	1.42	0.00	0.00	0.00	0.00
Maximum lbs/day	6.08	37.95	51.80	0.00	13.45	1.45	12.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	9.29	57.78	78.24	-	2.18	2.18	0.00
Bldg Const Worker Trips	0.20	0.12	2.58	0.00	0.03	0.00	0.03
Arch Coatings Off-Gas	17.34	-	-	-	-	-	-
Arch Coatings Worker Trips	0.20	0.12	2.58	0.00	0.03	0.00	0.03
Asphalt Off-Gas	0.29	-	-	-	-	-	-
Asphalt Off-Road Diesel	6.87	43.26	57.28	-	1.61	1.61	0.00
Asphalt On-Road Diesel	0.06	1.09	0.20	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.03	0.02	0.39	0.00	0.00	0.00	0.00
Maximum lbs/day	34.27	102.39	141.28	0.00	3.88	3.81	0.07
Max lbs/day all phases	34.27	102.39	141.28	0.00	15.81	3.81	12.00

Phase 1 - Demolition Assumptions
Start Month/Year for Phase 1: Jan '07
Phase 1 Duration: 0.6 months
Building Volume Total (cubic feet): 2625
Building Volume Daily (cubic feet): 375
On-Road Truck Travel (VMT): 21
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Other Equipment	190	0.620	8.0

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '07
Phase 2 Duration: 1.2 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Feb '07
Phase 3 Duration: 10.2 months
Start Month/Year for SubPhase Building: Feb '07
SubPhase Building Duration: 10.2 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Cranes	190	0.430	8.0
2	Off Highway Trucks	417	0.490	8.0

1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '07
SubPhase Architectural Coatings Duration: 1 months
Start Month/Year for SubPhase Asphalt: Dec '07
SubPhase Asphalt Duration: 0.5 months
Acres to be Paved: 1.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.490	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.16	-	0.16
Off-Road Diesel	4.15	21.80	30.72	-	0.52	0.52	0.00
On-Road Diesel	0.03	0.37	0.10	0.00	0.00	0.00	0.00
Worker Trips	0.02	0.06	0.55	0.00	0.00	0.00	0.00
Maximum lbs/day	4.20	22.23	31.37	0.00	0.69	0.53	0.16
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.21	-	0.21
Off-Road Diesel	6.01	26.02	50.38	-	0.54	0.54	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.07	0.13	1.42	0.00	0.00	0.00	0.00
Maximum lbs/day	6.08	26.15	51.80	0.00	0.75	0.54	0.21
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	9.29	39.75	78.24	-	0.81	0.81	0.00
Bldg Const Worker Trips	0.20	0.12	2.58	0.00	0.03	0.00	0.03
Arch Coatings Off-Gas	17.34	-	-	-	-	-	-
Arch Coatings Worker Trips	0.20	0.12	2.58	0.00	0.03	0.00	0.03
Asphalt Off-Gas	0.29	-	-	-	-	-	-
Asphalt Off-Road Diesel	6.87	29.76	57.28	-	0.60	0.60	0.00
Asphalt On-Road Diesel	0.06	0.75	0.20	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.03	0.02	0.39	0.00	0.00	0.00	0.00
Maximum lbs/day	34.27	70.52	141.28	0.00	1.48	1.41	0.07
Max lbs/day all phases	34.27	70.52	141.28	0.00	1.62	1.41	0.21

Construction-Related Mitigation Measures

Phase 1: Off-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 1: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1: On-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 1: On-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)
Phase 2: Off-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 2: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 2: On-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 2: On-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 2: Unpaved Roads: Pave all haul roads
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 92.5%)
Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
Phase 3: Off-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 3: Off-Road Diesel Exhaust: Use lean-NOx catalyst

Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 3: Off-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 3: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 3: On-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 3: On-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1 - Demolition Assumptions
Start Month/Year for Phase 1: Jan '07
Phase 1 Duration: 0.6 months
Building Volume Total (cubic feet): 2625
Building Volume Daily (cubic feet): 375
On-Road Truck Travel (VMT): 21
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Other Equipment	190	0.620	8.0

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '07
Phase 2 Duration: 1.2 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Feb '07
Phase 3 Duration: 10.2 months
Start Month/Year for SubPhase Building: Feb '07
SubPhase Building Duration: 10.2 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Cranes	190	0.430	8.0
2	Off Highway Trucks	417	0.490	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '07
SubPhase Architectural Coatings Duration: 1 months
Start Month/Year for SubPhase Asphalt: Dec '07
SubPhase Asphalt Duration: 0.5 months
Acres to be Paved: 1.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.490	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.07	1.00	0.84	0	0.00
Hearth	0.00	0.00	0.00	0.00	0.00
Landscaping - No winter emissions					
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	0.00	-	-	-	-
TOTALS(lbs/day,unmitigated)	0.07	1.00	0.84	0.00	0.00

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Fast food rest. w/ drive	16.32	21.79	168.45	0.10	16.87
Free-standing discount su	31.96	44.45	338.54	0.20	34.87
Gasoline/service station	10.94	10.09	90.29	0.04	6.68
TOTAL EMISSIONS (lbs/day)	59.21	76.33	597.28	0.34	58.41

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Fast food rest. w/ drive		496.12 trips/1000 sq. ft	5.00	2,480.60
Free-standing discount su		49.21 trips/1000 sq. ft.	97.12	4,779.47
Gasoline/service station		162.78 trips/Pumps	12.00	1,953.36
		Sum of Total Trips		9,213.43
		Total Vehicle Miles Traveled		38,493.25

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Fast food rest. w/ drive thru	5.0	2.5	92.5
Free-standing discount superstore	2.0	1.0	97.0
Gasoline/service station	2.0	1.0	97.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Fast food rest. w/ drive	9.09	12.14	93.85	0.05	9.40
Free-standing discount su	30.44	42.34	322.51	0.19	33.22
Gasoline/service station	10.42	9.61	86.01	0.04	6.36
TOTAL EMISSIONS (lbs/day)	49.95	64.09	502.37	0.28	48.97
PERCENTAGE REDUCTION %	16	16	16	16	16

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Fast food rest. w/ drive		276.40 trips/1000 sq. ft	5.00	1,382.01
Free-standing discount su		46.88 trips/1000 sq. ft.	97.12	4,553.12
Gasoline/service station		155.07 trips/Pumps	12.00	1,860.85
		Sum of Total Trips		7,795.98
		Total Vehicle Miles Traveled		32,272.93

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Fast food rest. w/ drive thru	5.0	2.5	92.5
Free-standing discount superstore	2.0	1.0	97.0
Gasoline/service station	2.0	1.0	97.0

MITIGATION OPTIONS SELECTED

Non-Residential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2%
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.06%
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 2
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 2
The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 2.67%
Inputs Selected:
The Number of Intersections per Square Mile is 20
The Percent of Streets with Sidewalks on One Side is 25%
The Percent of Streets with Sidewalks on Both Sides is 50%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 25%

Non-Residential Parking Supply Mitigation for Fast food rest. w/ drive thru

Percent Reduction in Trips is 44.29%
The Parking Supply reduction is larger than the sum of Mix of Uses, Local Serving Retail,
Transit Service and Bike/Ped mitigation measures: 4.74%
Therefore the Parking Supply percent will be used in place of these other mitigation reductions.
Inputs Selected:
For the 5 units of Fast food rest. w/ drive thru the Parking Provision was set to 8
The ITE Parking Rate manual states that: 49.5 spaces should be provided.

Non-Residential Parking Supply Mitigation for Free-standing discount superstore

Percent Reduction in Trips is 44.29%
The Parking Supply reduction was LESS THAN or EQUAL TO the sum of Mix of Uses, Local Serving Retail,
Transit Service and Bike/Ped mitigation measures: 4.74.
Therefore the Parking Supply percent will be NOT BE USED.
Inputs Selected:
For the 97.124 units of Free-standing discount superstore the Parking Provision was set to 1126
The ITE Parking Rate manual states that: 434.14 spaces should be provided.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Walmart Superstore Project.urb
Project Name: Walmart Superstore Expansion Chico
Project Location: DEFAULT
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: January, 2007
Construction Duration: 12
Total Land Use Area to be Developed: 4.7 acres
Maximum Acreage Disturbed Per Day: 1.2 acres
Single Family Units: 0 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 103124

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.16	-	0.16
Off-Road Diesel	4.15	31.68	30.72	-	1.41	1.41	0.00
On-Road Diesel	0.03	0.54	0.10	0.00	0.01	0.01	0.00
Worker Trips	0.02	0.06	0.55	0.00	0.00	0.00	0.00
Maximum lbs/day	4.20	32.28	31.37	0.00	1.58	1.42	0.16
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	12.00	-	12.00
Off-Road Diesel	6.01	37.82	50.38	-	1.45	1.45	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.07	0.13	1.42	0.00	0.00	0.00	0.00
Maximum lbs/day	6.08	37.95	51.80	0.00	13.45	1.45	12.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	9.29	57.78	78.24	-	2.18	2.18	0.00
Bldg Const Worker Trips	0.20	0.12	2.58	0.00	0.03	0.00	0.03
Arch Coatings Off-Gas	17.34	-	-	-	-	-	-
Arch Coatings Worker Trips	0.20	0.12	2.58	0.00	0.03	0.00	0.03
Asphalt Off-Gas	0.29	-	-	-	-	-	-
Asphalt Off-Road Diesel	6.87	43.26	57.28	-	1.61	1.61	0.00
Asphalt On-Road Diesel	0.06	1.09	0.20	0.00	0.02	0.02	0.00
Asphalt Worker Trips	0.03	0.02	0.39	0.00	0.00	0.00	0.00
Maximum lbs/day	34.27	102.39	141.28	0.00	3.88	3.81	0.07
Max lbs/day all phases	34.27	102.39	141.28	0.00	15.81	3.81	12.00

Phase 1 - Demolition Assumptions
Start Month/Year for Phase 1: Jan '07
Phase 1 Duration: 0.6 months
Building Volume Total (cubic feet): 2625
Building Volume Daily (cubic feet): 375
On-Road Truck Travel (VMT): 21
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Other Equipment	190	0.620	8.0

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '07
Phase 2 Duration: 1.2 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Feb '07
Phase 3 Duration: 10.2 months
Start Month/Year for SubPhase Building: Feb '07
SubPhase Building Duration: 10.2 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Cranes	190	0.430	8.0
2	Off Highway Trucks	417	0.490	8.0

1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '07
SubPhase Architectural Coatings Duration: 1 months
Start Month/Year for SubPhase Asphalt: Dec '07
SubPhase Asphalt Duration: 0.5 months
Acres to be Paved: 1.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.490	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

CONSTRUCTION EMISSION ESTIMATES MITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.16	-	0.16
Off-Road Diesel	4.15	21.80	30.72	-	0.52	0.52	0.00
On-Road Diesel	0.03	0.37	0.10	0.00	0.00	0.00	0.00
Worker Trips	0.02	0.06	0.55	0.00	0.00	0.00	0.00
Maximum lbs/day	4.20	22.23	31.37	0.00	0.69	0.53	0.16
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.21	-	0.21
Off-Road Diesel	6.01	26.02	50.38	-	0.54	0.54	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.07	0.13	1.42	0.00	0.00	0.00	0.00
Maximum lbs/day	6.08	26.15	51.80	0.00	0.75	0.54	0.21
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	9.29	39.75	78.24	-	0.81	0.81	0.00
Bldg Const Worker Trips	0.20	0.12	2.58	0.00	0.03	0.00	0.03
Arch Coatings Off-Gas	17.34	-	-	-	-	-	-
Arch Coatings Worker Trips	0.20	0.12	2.58	0.00	0.03	0.00	0.03
Asphalt Off-Gas	0.29	-	-	-	-	-	-
Asphalt Off-Road Diesel	6.87	29.76	57.28	-	0.60	0.60	0.00
Asphalt On-Road Diesel	0.06	0.75	0.20	0.00	0.01	0.01	0.00
Asphalt Worker Trips	0.03	0.02	0.39	0.00	0.00	0.00	0.00
Maximum lbs/day	34.27	70.52	141.28	0.00	1.48	1.41	0.07
Max lbs/day all phases	34.27	70.52	141.28	0.00	1.62	1.41	0.21

Construction-Related Mitigation Measures

Phase 1: Off-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 1: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1: On-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 1: On-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 2: Soil Disturbance: Apply soil stabilizers to inactive areas
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 30.0%)
Phase 2: Soil Disturbance: Replace ground cover in disturbed areas quickly
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 15.0%)
Phase 2: Soil Disturbance: Water exposed surfaces - 2x daily
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 34.0%)
Phase 2: Off-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 2: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 2: On-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 2: On-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 2: Unpaved Roads: Pave all haul roads
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 92.5%)
Phase 2: Unpaved Roads: Reduce speed on unpaved roads to < 15 mph
Percent Reduction(ROG 0.0% NOx 0.0% CO 0.0% SO2 0.0% PM10 40.0%)
Phase 3: Off-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 3: Off-Road Diesel Exhaust: Use lean-NOx catalyst

Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 3: Off-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 3: Off-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 3: On-Road Diesel Exhaust: Use aqueous diesel fuel
Percent Reduction(ROG 0.0% NOx 14.0% CO 0.0% SO2 0.0% PM10 63.0%)
Phase 3: On-Road Diesel Exhaust: Use lean-NOx catalyst
Percent Reduction(ROG 0.0% NOx 20.0% CO 0.0% SO2 0.0% PM10 0.0%)
Phase 1 - Demolition Assumptions
Start Month/Year for Phase 1: Jan '07
Phase 1 Duration: 0.6 months
Building Volume Total (cubic feet): 2625
Building Volume Daily (cubic feet): 375
On-Road Truck Travel (VMT): 21
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
2	Other Equipment	190	0.620	8.0

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jan '07
Phase 2 Duration: 1.2 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Graders	174	0.575	8.0
1	Off Highway Trucks	417	0.490	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Feb '07
Phase 3 Duration: 10.2 months
Start Month/Year for SubPhase Building: Feb '07
SubPhase Building Duration: 10.2 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Cranes	190	0.430	8.0
2	Off Highway Trucks	417	0.490	8.0
1	Tractor/Loaders/Backhoes	79	0.465	8.0

Start Month/Year for SubPhase Architectural Coatings: Dec '07
SubPhase Architectural Coatings Duration: 1 months
Start Month/Year for SubPhase Asphalt: Dec '07
SubPhase Asphalt Duration: 0.5 months
Acres to be Paved: 1.2
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Off Highway Trucks	417	0.490	8.0
1	Pavers	132	0.590	8.0
1	Paving Equipment	111	0.530	8.0
1	Rollers	114	0.430	8.0

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.07	1.00	0.84	0	0.00
Hearth - No summer emissions					
Landscaping	0.37	0.01	2.34	0.00	0.01
Consumer Prdcts	0.00	-	-	-	-
Architectural Coatings	0.00	-	-	-	-
TOTALS(lbs/day,unmitigated)	0.45	1.01	3.18	0.00	0.01

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Fast food rest. w/ drive	13.88	13.47	165.00	0.12	16.87
Free-standing discount su	28.83	27.39	334.46	0.24	34.87
Gasoline/service station	9.20	6.47	77.57	0.05	6.68
TOTAL EMISSIONS (lbs/day)	51.90	47.33	577.04	0.41	58.41

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 95 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Fast food rest. w/ drive		496.12 trips/1000 sq. ft	5.00	2,480.60
Free-standing discount su		49.21 trips/1000 sq. ft.	97.12	4,779.47
Gasoline/service station		162.78 trips/Pumps	12.00	1,953.36
		Sum of Total Trips		9,213.43
		Total Vehicle Miles Traveled		38,493.25

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			

% of Trips - Commercial (by land use)

Fast food rest. w/ drive thru	5.0	2.5	92.5
Free-standing discount superstore	2.0	1.0	97.0
Gasoline/service station	2.0	1.0	97.0

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Fast food rest. w/ drive	7.77	7.50	91.93	0.07	9.40
Free-standing discount su	27.55	26.09	318.62	0.23	33.22
Gasoline/service station	8.77	6.16	73.89	0.05	6.36
TOTAL EMISSIONS (lbs/day)	44.09	39.76	484.45	0.34	48.97
PERCENTAGE REDUCTION %	15	16	16	16	16

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2010 Temperature (F): 95 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Fast food rest. w/ drive		276.40 trips/1000 sq. ft	5.00	1,382.01
Free-standing discount su		46.88 trips/1000 sq. ft.	97.12	4,553.12
Gasoline/service station		155.07 trips/Pumps	12.00	1,860.85
		Sum of Total Trips		7,795.98
		Total Vehicle Miles Traveled		32,272.93

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	54.70	1.10	98.70	0.20
Light Truck < 3,750 lbs	15.20	2.00	96.00	2.00
Light Truck 3,751- 5,750	16.20	1.20	98.10	0.70
Med Truck 5,751- 8,500	7.30	1.40	95.90	2.70
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.30	0.00	66.70	33.30
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.60	68.80	31.20	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.40	7.10	85.70	7.20

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Fast food rest. w/ drive thru				5.0	2.5	92.5
Free-standing discount superstore				2.0	1.0	97.0
Gasoline/service station				2.0	1.0	97.0

MITIGATION OPTIONS SELECTED

Non-Residential Mitigation Measures

Non-Residential Local-Serving Retail Mitigation

Percent Reduction in Trips is 2%
Inputs Selected:
The Presence of Local-Serving Retail checkbox was selected.

Non-Residential Transit Service Mitigation

Percent Reduction in Trips is 0.06%
Inputs Selected:
The Number of Daily Weekday Buses Stopping Within 1/4 Mile of Site is 2
The Number of Daily Rail or Bus Rapid Transit Stops Within 1/2 Mile of Site is 2
The Number of Dedicated Daily Shuttle Trips is 0

Non-Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 2.67%
Inputs Selected:
The Number of Intersections per Square Mile is 20
The Percent of Streets with Sidewalks on One Side is 25%
The Percent of Streets with Sidewalks on Both Sides is 50%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable,
Direct Parallel Routes Exist is 25%

Non-Residential Parking Supply Mitigation for Fast food rest. w/ drive thru

Percent Reduction in Trips is 44.29%
The Parking Supply reduction is larger than the sum of Mix of Uses, Local Serving Retail,
Transit Service and Bike/Ped mitigation measures: 4.74%
Therefore the Parking Supply percent will be used in place of these other mitigation reductions.
Inputs Selected:
For the 5 units of Fast food rest. w/ drive thru the Parking Provision was set to 8
The ITE Parking Rate manual states that: 49.5 spaces should be provided.

Non-Residential Parking Supply Mitigation for Free-standing discount superstore

Percent Reduction in Trips is 44.29%
The Parking Supply reduction was LESS THAN or EQUAL TO the sum of Mix of Uses, Local Serving Retail,
Transit Service and Bike/Ped mitigation measures: 4.74.
Therefore the Parking Supply percent will be NOT BE USED.
Inputs Selected:
For the 97.124 units of Free-standing discount superstore the Parking Provision was set to 1126
The ITE Parking Rate manual states that: 434.14 spaces should be provided.

Appendix B – EMFAC 2002 Model Analysis

Title : Butte County Avg 2010 Annual
Version : Emfac2002 V2.2 Apr 23 2003
Run Date : 05/30/06 19:15:41
Scen Year: 2010 -- Model Years: 1965 to 2010
Season : Annual
Area : Butte County
****
Year:2010 -- Model Years 1965 to 2010 Inclusive -- Annual
Emfac2002 Emission Factors: V2.2 Apr 23 2003

County Average Butte Count County Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Carbon Monoxide Temperature: 35F Relative Humidity: 50%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
1	7.790	16.173	12.593	40.334	93.814	47.932	13.897
5	7.054	14.260	11.230	40.334	93.814	47.932	12.717
10	5.920	11.422	8.743	27.006	62.209	39.593	9.917
15	5.102	9.492	7.109	19.075	43.604	34.347	8.080
20	4.492	8.144	6.003	14.211	32.304	31.273	6.834
25	4.029	7.187	5.241	11.166	25.294	29.882	5.972
30	3.674	6.511	4.718	9.253	20.932	29.974	5.374
35	3.403	6.051	4.374	8.087	18.308	31.586	4.974
40	3.205	5.773	4.177	7.454	16.922	35.002	4.737
45	3.073	5.667	4.117	7.248	16.530	40.831	4.651
50	3.010	5.745	4.205	7.435	17.064	50.185	4.727
55	3.027	6.046	4.471	8.047	18.615	65.035	5.001
60	3.145	6.649	4.979	9.191	21.461	88.892	5.547
65	3.408	7.697	5.847	11.080	26.147	128.160	6.500

Appendix C – CALINE4 Model Analysis

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: East 20th Street / Forest Ave 2010 PM
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0	M/S	Z0=	100.	CM	ALT=	0. (M)
BRG=	.5	DEGREES	VD=	.0	CM/S		
CLAS=	7	(G)	VS=	.0	CM/S		
MIXH=	1000.	M	AMB=	.0	PPM		
SIGTH=	10.	DEGREES	TEMP=	.0	DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	2	-450	2	-150	*	AG	1357	13.9	.0	10.5
B. Link B	*	2	-150	2	0	*	AG	1357	13.9	.0	9.9
C. Link C	*	2	0	2	150	*	AG	907	13.9	.0	9.9
D. Link D	*	2	150	2	450	*	AG	907	13.9	.0	10.5
E. Link E	*	-2	450	-2	150	*	AG	672	13.9	.0	10.5
F. Link F	*	-2	150	-2	0	*	AG	672	13.9	.0	9.9
G. Link G	*	-2	0	-2	-150	*	AG	981	13.9	.0	9.9
H. Link H	*	-2	-150	-2	-450	*	AG	981	13.9	.0	10.5
I. Link I	*	450	2	150	2	*	AG	1526	13.9	.0	10.5
J. Link J	*	150	2	0	2	*	AG	1526	13.9	.0	9.9
K. Link K	*	0	2	-150	2	*	AG	961	13.9	.0	9.9
L. Link L	*	-150	2	-450	2	*	AG	961	13.9	.0	10.5
M. Link M	*	-450	-2	-150	-2	*	AG	997	13.9	.0	10.5
N. Link N	*	-150	-2	0	-2	*	AG	997	13.9	.0	9.9
O. Link O	*	0	-2	150	-2	*	AG	1703	13.9	.0	9.9
P. Link P	*	150	-2	450	-2	*	AG	1703	13.9	.0	10.5

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE '2

JOB: East 20th Street / Forest Ave 2010 PM
RUN: Hour 1
POLLUTANT: Carbon Monoxide

20th Street Forest Ave 2010 PM Proj

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	8	8	1.8
2. Recpt 2	8	-8	1.8
3. Recpt 3	-8	-8	1.8
4. Recpt 4	-8	8	1.8
5. Recpt 5	11	11	1.8
6. Recpt 6	11	-11	1.8
7. Recpt 7	-11	-11	1.8
8. Recpt 8	-11	11	1.8

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H	I	J
1. Recpt 1	1.4	.0	.0	.8	.2	.2	.2	.0	.0	.0	.0
2. Recpt 2	2.9	.0	.1	.7	.2	.2	.2	.0	.0	.0	.6
3. Recpt 3	2.3	.0	.0	.3	.2	.2	.6	.1	.0	.0	.0
4. Recpt 4	1.4	.0	.0	.3	.2	.2	.7	.0	.0	.0	.0
5. Recpt 5	.8	.0	.0	.3	.2	.1	.1	.0	.0	.0	.0
6. Recpt 6	2.0	.0	.0	.3	.2	.1	.1	.0	.0	.0	.5
7. Recpt 7	1.6	.0	.0	.2	.2	.2	.3	.0	.0	.0	.0
8. Recpt 8	.8	.0	.0	.2	.2	.2	.3	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: East 20th Street / Forest Ave 2010 PM
RUN: Hour 1
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.) (CONT.)

RECEPTOR	CONC/LINK (PPM) K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.9	.0
3. Recpt 3	.4	.0	.0	.5	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.7	.0
7. Recpt 7	.3	.0	.0	.4	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: East 20th Street / Forest Ave 2010 SAT
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	.5 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	*	LINK COORDINATES (M) X1	Y1	X2	Y2	*	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	*	2	-450	2	-150	*	AG	1425	13.9	.0	10.5
B. Link B	*	2	-150	2	0	*	AG	1425	13.9	.0	9.9
C. Link C	*	2	0	2	150	*	AG	881	13.9	.0	9.9
D. Link D	*	2	150	2	450	*	AG	881	13.9	.0	10.5
E. Link E	*	-2	450	-2	150	*	AG	811	13.9	.0	10.5
F. Link F	*	-2	150	-2	0	*	AG	811	13.9	.0	9.9
G. Link G	*	-2	0	-2	-150	*	AG	970	13.9	.0	9.9
H. Link H	*	-2	-150	-2	-450	*	AG	970	13.9	.0	10.5
I. Link I	*	450	2	150	2	*	AG	1477	13.9	.0	10.5
J. Link J	*	150	2	0	2	*	AG	1477	13.9	.0	9.9
K. Link K	*	0	2	-150	2	*	AG	1025	13.9	.0	9.9
L. Link L	*	-150	2	-450	2	*	AG	1025	13.9	.0	10.5
M. Link M	*	-450	-2	-150	-2	*	AG	1324	13.9	.0	10.5
N. Link N	*	-150	-2	0	-2	*	AG	1324	13.9	.0	9.9
O. Link O	*	0	-2	150	-2	*	AG	2161	13.9	.0	9.9
P. Link P	*	150	-2	450	-2	*	AG	2161	13.9	.0	10.5

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: East 20th Street / Forest Ave 2010 SAT
RUN: Hour 1
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	8	8	1.8
2. Recpt 2	8	-8	1.8
3. Recpt 3	-8	-8	1.8
4. Recpt 4	-8	8	1.8
5. Recpt 5	11	11	1.8
6. Recpt 6	11	-11	1.8
7. Recpt 7	-11	-11	1.8
8. Recpt 8	-11	11	1.8

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H	I	J
1. Recpt 1	1.4	.0	.0	.8	.2	.2	.2	.0	.0	.0	.0
2. Recpt 2	3.2	.0	.2	.7	.2	.2	.3	.0	.0	.0	.6
3. Recpt 3	2.6	.0	.0	.3	.2	.2	.7	.1	.0	.0	.0
4. Recpt 4	1.5	.0	.0	.3	.2	.2	.8	.0	.0	.0	.0
5. Recpt 5	.8	.0	.0	.3	.2	.2	.1	.0	.0	.0	.0
6. Recpt 6	2.2	.0	.0	.3	.2	.2	.1	.0	.0	.0	.5
7. Recpt 7	1.8	.0	.0	.2	.2	.2	.3	.0	.0	.0	.0
8. Recpt 8	.9	.0	.0	.2	.2	.2	.3	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: East 20th Street / Forest Ave 2010 SAT
RUN: Hour 1
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.) (CONT.)

RECEPTOR	CONC/LINK (PPM) K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	1.1	.0
3. Recpt 3	.4	.0	.0	.7	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.9	.0
7. Recpt 7	.4	.0	.0	.6	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: East 20th Street / SR 99 NB Ramps
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0	M/S	Z0=	100.	CM	ALT=	0. (M)
BRG=	.5	DEGREES	VD=	.0	CM/S		
CLAS=	7	(G)	VS=	.0	CM/S		
MIXH=	1000.	M	AMB=	.0	PPM		
SIGTH=	10.	DEGREES	TEMP=	.0	DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-450	2	-150	AG	648	13.9	.0	10.5
B. Link B	2	-150	2	0	AG	648	13.9	.0	9.9
C. Link C	2	0	2	150	AG	1605	13.9	.0	9.9
D. Link D	2	150	2	450	AG	1605	13.9	.0	10.5
E. Link E	-2	450	-2	150	AG	0	13.9	.0	10.5
F. Link F	-2	150	-2	0	AG	0	13.9	.0	9.9
G. Link G	-2	0	-2	-150	AG	0	13.9	.0	9.9
H. Link H	-2	-150	-2	-450	AG	0	13.9	.0	10.5
I. Link I	450	2	150	2	AG	2935	13.9	.0	10.5
J. Link J	150	2	0	2	AG	2935	13.9	.0	9.9
K. Link K	0	2	-150	2	AG	2924	13.9	.0	9.9
L. Link L	-150	2	-450	2	AG	2924	13.9	.0	10.5
M. Link M	-450	-2	-150	-2	AG	2423	13.9	.0	10.5
N. Link N	-150	-2	0	-2	AG	2423	13.9	.0	9.9
O. Link O	0	-2	150	-2	AG	1477	13.9	.0	9.9
P. Link P	150	-2	450	-2	AG	1477	13.9	.0	10.5

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE '2

JOB: East 20th Street / SR 99 NB Ramps
RUN: Hour 1
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	8	8	1.8
2. Recpt 2	8	-8	1.8
3. Recpt 3	-8	-8	1.8
4. Recpt 4	-8	8	1.8
5. Recpt 5	11	11	1.8
6. Recpt 6	11	-11	1.8
7. Recpt 7	-11	-11	1.8
8. Recpt 8	-11	11	1.8

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H	I	J
1. Recpt 1	1.7	.0	.0	1.3	.3	.0	.0	.0	.0	.0	.0
2. Recpt 2	3.4	.0	.0	1.2	.3	.0	.0	.0	.0	.0	1.1
3. Recpt 3	3.2	.0	.0	.5	.3	.0	.0	.0	.0	.0	.0
4. Recpt 4	.8	.0	.0	.5	.3	.0	.0	.0	.0	.0	.0
5. Recpt 5	.8	.0	.0	.5	.3	.0	.0	.0	.0	.0	.0
6. Recpt 6	2.3	.0	.0	.5	.3	.0	.0	.0	.0	.0	.9
7. Recpt 7	2.5	.0	.0	.3	.3	.0	.0	.0	.0	.0	.0
8. Recpt 8	.6	.0	.0	.2	.3	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: East 20th Street / SR 99 NB Ramps
RUN: Hour 1
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.) (CONT.)

RECEPTOR	CONC/LINK (PPM) K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.8	.0
3. Recpt 3	1.1	.0	.0	1.2	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.6	.0
7. Recpt 7	.9	.0	.0	1.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: East 20th Street / SR 99 NB Ramps
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0	M/S	Z0=	100.	CM	ALT=	0. (M)
BRG=	.5	DEGREES	VD=	.0	CM/S		
CLAS=	7	(G)	VS=	.0	CM/S		
MIXH=	1000.	M	AMB=	.0	PPM		
SIGTH=	10.	DEGREES	TEMP=	.0	DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-450	2	-150	AG	523	13.9	.0	10.5
B. Link B	2	-150	2	0	AG	523	13.9	.0	9.9
C. Link C	2	0	2	150	AG	1345	13.9	.0	9.9
D. Link D	2	150	2	450	AG	1345	13.9	.0	10.5
E. Link E	-2	450	-2	150	AG	0	13.9	.0	10.5
F. Link F	-2	150	-2	0	AG	0	13.9	.0	9.9
G. Link G	-2	0	-2	-150	AG	0	13.9	.0	9.9
H. Link H	-2	-150	-2	-450	AG	0	13.9	.0	10.5
I. Link I	450	2	150	2	AG	2727	13.9	.0	10.5
J. Link J	150	2	0	2	AG	2727	13.9	.0	9.9
K. Link K	0	2	-150	2	AG	2745	13.9	.0	9.9
L. Link L	-150	2	-450	2	AG	2745	13.9	.0	10.5
M. Link M	-450	-2	-150	-2	AG	2407	13.9	.0	10.5
N. Link N	-150	-2	0	-2	AG	2407	13.9	.0	9.9
O. Link O	0	-2	150	-2	AG	1567	13.9	.0	9.9
P. Link P	150	-2	450	-2	AG	1567	13.9	.0	10.5

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: East 20th Street / SR 99 NB Ramps
RUN: Hour 1
POLLUTANT: Carbon Monoxide

20th Street SR99 2010 SAT Proj

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	8	8	1.8
2. Recpt 2	8	-8	1.8
3. Recpt 3	-8	-8	1.8
4. Recpt 4	-8	8	1.8
5. Recpt 5	11	11	1.8
6. Recpt 6	11	-11	1.8
7. Recpt 7	-11	-11	1.8
8. Recpt 8	-11	11	1.8

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H	I	J
1. Recpt 1	1.4	.0	.0	1.1	.3	.0	.0	.0	.0	.0	.0
2. Recpt 2	3.2	.0	.0	1.0	.3	.0	.0	.0	.0	.0	1.1
3. Recpt 3	3.0	.0	.0	.5	.3	.0	.0	.0	.0	.0	.0
4. Recpt 4	.7	.0	.0	.4	.3	.0	.0	.0	.0	.0	.0
5. Recpt 5	.7	.0	.0	.4	.3	.0	.0	.0	.0	.0	.0
6. Recpt 6	2.2	.0	.0	.4	.3	.0	.0	.0	.0	.0	.9
7. Recpt 7	2.4	.0	.0	.3	.3	.0	.0	.0	.0	.0	.0
8. Recpt 8	.5	.0	.0	.2	.3	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: East 20th Street / SR 99 NB Ramps
RUN: Hour 1
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.) (CONT.)

RECEPTOR	CONC/LINK (PPM) K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.8	.0
3. Recpt 3	1.1	.0	.0	1.2	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.6	.0
7. Recpt 7	.9	.0	.0	1.0	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Skyway Notre Dame Blvd 2010 PM Proj
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0	M/S	Z0=	100.	CM	ALT=	0. (M)
BRG=	.5	DEGREES	VD=	.0	CM/S		
CLAS=	7	(G)	VS=	.0	CM/S		
MIXH=	1000.	M	AMB=	.0	PPM		
SIGTH=	10.	DEGREES	TEMP=	.0	DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-450	2	-150	AG	610	13.9	.0	10.5
B. Link B	2	-150	2	0	AG	610	13.9	.0	9.9
C. Link C	2	0	2	150	AG	988	13.9	.0	9.9
D. Link D	2	150	2	450	AG	988	13.9	.0	10.5
E. Link E	-2	450	-2	150	AG	1017	13.9	.0	10.5
F. Link F	-2	150	-2	0	AG	1017	13.9	.0	9.9
G. Link G	-2	0	-2	-150	AG	431	13.9	.0	9.9
H. Link H	-2	-150	-2	-450	AG	431	13.9	.0	10.5
I. Link I	450	2	150	2	AG	2371	13.9	.0	10.5
J. Link J	150	2	0	2	AG	2371	13.9	.0	9.9
K. Link K	0	2	-150	2	AG	1849	13.9	.0	9.9
L. Link L	-150	2	-450	2	AG	1849	13.9	.0	10.5
M. Link M	-450	-2	-150	-2	AG	1249	13.9	.0	10.5
N. Link N	-150	-2	0	-2	AG	1249	13.9	.0	9.9
O. Link O	0	-2	150	-2	AG	1979	13.9	.0	9.9
P. Link P	150	-2	450	-2	AG	1979	13.9	.0	10.5

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Skyway Notre Dame Blvd 2010 PM Proj
RUN: Hour 1
POLLUTANT: Carbon Monoxide

Skyway Notre Dame Blvd 2010 PM Proj

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	8	8	1.8
2. Recpt 2	8	-8	1.8
3. Recpt 3	-8	-8	1.8
4. Recpt 4	-8	8	1.8
5. Recpt 5	11	11	1.8
6. Recpt 6	11	-11	1.8
7. Recpt 7	-11	-11	1.8
8. Recpt 8	-11	11	1.8

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H	I	J
1. Recpt 1	1.6	.0	.0	.9	.2	.2	.3	.0	.0	.0	.0
2. Recpt 2	3.5	.0	.0	.8	.2	.2	.3	.0	.0	.0	.9
3. Recpt 3	3.1	.0	.0	.4	.2	.2	.9	.0	.0	.0	.0
4. Recpt 4	1.8	.0	.0	.3	.2	.3	1.0	.0	.0	.0	.0
5. Recpt 5	.9	.0	.0	.3	.2	.2	.1	.0	.0	.0	.0
6. Recpt 6	2.5	.0	.0	.3	.2	.2	.2	.0	.0	.0	.8
7. Recpt 7	2.2	.0	.0	.2	.2	.2	.4	.0	.0	.0	.0
8. Recpt 8	1.0	.0	.0	.2	.2	.3	.4	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Skyway Notre Dame Blvd 2010 PM Proj
RUN: Hour 1
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.) (CONT.)

RECEPTOR	CONC/LINK (PPM) K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	1.0	.0
3. Recpt 3	.7	.0	.0	.6	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.8	.0
7. Recpt 7	.6	.0	.0	.5	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Skyway Notre Dame Blvd 2010 SAT Proj
RUN: Hour 1
POLLUTANT: Carbon Monoxide

I. SITE VARIABLES

U=	1.0 M/S	Z0=	100. CM	ALT=	0. (M)
BRG=	.5 DEGREES	VD=	.0 CM/S		
CLAS=	7 (G)	VS=	.0 CM/S		
MIXH=	1000. M	AMB=	.0 PPM		
SIGTH=	10. DEGREES	TEMP=	.0 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	2	-450	2	-150	AG	782	13.9	.0	10.5
B. Link B	2	-150	2	0	AG	782	13.9	.0	9.9
C. Link C	2	0	2	150	AG	1365	13.9	.0	9.9
D. Link D	2	150	2	450	AG	1365	13.9	.0	10.5
E. Link E	-2	450	-2	150	AG	1002	13.9	.0	10.5
F. Link F	-2	150	-2	0	AG	1002	13.9	.0	9.9
G. Link G	-2	0	-2	-150	AG	326	13.9	.0	9.9
H. Link H	-2	-150	-2	-450	AG	326	13.9	.0	10.5
I. Link I	450	2	150	2	AG	1632	13.9	.0	10.5
J. Link J	150	2	0	2	AG	1632	13.9	.0	9.9
K. Link K	0	2	-150	2	AG	1116	13.9	.0	9.9
L. Link L	-150	2	-450	2	AG	1116	13.9	.0	10.5
M. Link M	-450	-2	-150	-2	AG	1175	13.9	.0	10.5
N. Link N	-150	-2	0	-2	AG	1175	13.9	.0	9.9
O. Link O	0	-2	150	-2	AG	1784	13.9	.0	9.9
P. Link P	150	-2	450	-2	AG	1784	13.9	.0	10.5

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Skyway Notre Dame Blvd 2010 SAT Proj
RUN: Hour 1
POLLUTANT: Carbon Monoxide

Skyway Notre Dame Blvd 2010 SAT Proj

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	8	8	1.8
2. Recpt 2	8	-8	1.8
3. Recpt 3	-8	-8	1.8
4. Recpt 4	-8	8	1.8
5. Recpt 5	11	11	1.8
6. Recpt 6	11	-11	1.8
7. Recpt 7	-11	-11	1.8
8. Recpt 8	-11	11	1.8

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.)

RECEPTOR	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H	I	J
1. Recpt 1	2.0	.0	.0	1.2	.3	.2	.3	.0	.0	.0	.0
2. Recpt 2	3.5	.0	.0	1.0	.3	.2	.3	.0	.0	.0	.7
3. Recpt 3	2.9	.0	.0	.5	.3	.2	.9	.0	.0	.0	.0
4. Recpt 4	2.0	.0	.0	.4	.3	.3	1.0	.0	.0	.0	.0
5. Recpt 5	1.0	.0	.0	.4	.3	.2	.1	.0	.0	.0	.0
6. Recpt 6	2.3	.0	.0	.4	.3	.2	.2	.0	.0	.0	.5
7. Recpt 7	2.0	.0	.0	.3	.3	.2	.4	.0	.0	.0	.0
8. Recpt 8	1.1	.0	.0	.2	.3	.2	.4	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Skyway Notre Dame Blvd 2010 SAT Proj
RUN: Hour 1
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (PRED. CONC. INCLUDES AMB.) (CONT.)

RECEPTOR	CONC/LINK (PPM) K	L	M	N	O	P
1. Recpt 1	.0	.0	.0	.0	.0	.0
2. Recpt 2	.0	.0	.0	.0	.9	.0
3. Recpt 3	.5	.0	.0	.6	.0	.0
4. Recpt 4	.0	.0	.0	.0	.0	.0
5. Recpt 5	.0	.0	.0	.0	.0	.0
6. Recpt 6	.0	.0	.0	.0	.7	.0
7. Recpt 7	.4	.0	.0	.5	.0	.0
8. Recpt 8	.0	.0	.0	.0	.0	.0

Appendix D - Hanover Wetlands Delineation and Bio Assessment

WETLANDS DELINEATION

Duncan Shopping Center Expansion
Forest Avenue
Chico, Butte County, California
PAC101B

For
PACLAND
Mr. Bill Dunning, P.E.
606 Columbia Street NW, Suite 106
Olympia, WA 98501

HANOVER

Prepared by
Hanover Environmental Services, Inc.
56 Hanover Lane, Suite 100
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28 October 2002

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1.0 Introduction

This report describes a wetland delineation performed on an 11.05 acre lot located along the west side of Forest Avenue, north of Talbert Dr. within the City of Chico, Butte County, CA (Section 31, T22N, R2E), hereafter referred to as the "subject property" or "site", (see Figure 1, Site Location Map). The elevation of the subject property is approximately 220-225 feet above mean sea level (msl). The proposed project includes a 97,675 square foot expansion of the existing Wal-Mart Shopping Center structure and 8.51 acre expansion of the lot. Figure 2, Wetlands Delineation, shows the extent of the delineations and acreage of impacted wetlands.

The study involved an examination of soils, vegetation, and hydrological features of the site and a determination of their wetland characteristics according to the Corps of Engineers Wetlands Delineation Manual (1987). This work was performed in October 2002 by Ms. Lyna Black, biologist and Ms. Mary Bailey, consulting botanist at the request of Mr. Bill Dunning at PACLAND, 606 Columbia Street NW, Suite 106, Olympia, WA 98501.

This report addresses the nature and landscape position of the wetlands on the site; it does not provide information suitable for structural analyses of soils for construction purposes, flood plain delineation, or other purposes not expressly stated.

2.0 Site Conditions

Lithology at the site is classified as the upper member of the Modesto Formation (Pleistocene) (Helley and Harwood, 1985). The upper member of the Modesto Formation is classified as unconsolidated, unweathered gravel, sand, silt, and clay. It forms alluvial fans along the east side of the Sacramento Valley from Red Bluff to Oroville. Soils at the top of the upper member have A/C horizon profiles. Deposits belonging to the upper member of the Modesto are only a few meters thick and generally form a thin veneer deposited on older alluvial deposits. (Helley and Harwood).

The subject property is currently a vacant lot located between the existing Wal-Mart shopping center to the north and Wittmeier Auto Center to the south. Forest Avenue bounds the property to the east and Highway 99 to the west. A majority of the property is relatively flat with areas that appear to have been disked on a regular basis. The site is characterized by native and nonnative grasses with small willows and cottonwoods located along the northern property border. The nearest surface water is Crouch Ditch located approximately 1000 feet south of the subject property.

The study was focused on seven potential wetland areas. The majority of the areas on the property that supported green vegetation this late in the year were located closest to the existing Wal-Mart site and were likely the product of over spray from the adjacent landscape irrigation. Three potential wet areas were identified on the site that did not appear to be influenced by the landscape irrigation. Areas A, B, C1, C2, D, E, and F were investigated for the presence of wetland indicators.

2.1 Hydrology

The topography of the site slopes toward the southeast at a rate of approximately 0.01 vertical feet per linier foot, therefore movement of any surface water across the site would likely occur toward the drainages for Highway 99 and ultimately outfall to the City of Chico stormwater retention ponds located on Fair Street west of Highway 99. Teichert Ponds are located approximately 4000 feet northeast of the subject property at an elevation of 220-225 feet msl and likely influence groundwater levels in the vicinity of the subject property. Teichert Ponds consists of 35 acres of swampland, located on the east side of Highway 99 north of E. 20th St. that was inadvertently formed during excavation activities for the construction of Highway 99.

A site inspection was conducted approximately three weeks prior to performing the wetland delineation. At that time, standing water was observed in several locations along the northern property boundary (closest to the existing landscape for Wal-Mart). Interviews with PACLAND representatives revealed that an irrigation pipe had likely been compromised during recent disking, resulting in saturated and/or ponded conditions. The irrigation pipes for that vicinity of the property were decommissioned approximately two weeks prior to the wetland delineation and saturation/ponding was not observed during delineation activities.

2.2 Soils

Preliminary soils information was provided by the USDA Natural Resources Conservation Service, Butte County Soil Survey office. The data identified soils in the vicinity of the subject property as Tentative Map Unit Number 300 and 336, Redsluff gravelly loam and Galt clay. Soil taxonomy (subgroup) was identified by the Butte County Soil Survey representative as Mollic haploxeralf and Aquic durixererts, respectively. Galt clay is considered a hydric soil as it is classified as a "somewhat poorly drained" soil with an aquic subgroup and is frequently ponded for a long duration during the growing season (verbal communication, Burkett, 10/17/02). Ponding on Galt clay occurs frequently for long periods from December through March at depths as much as 12 inches above the surface. The growing season for the Chico area is defined as February through October. See Appendix B for soils descriptions as provided by the Butte County Soil Survey office.

2.3 Vegetation

Vegetation on the majority of the subject property was typical of disturbed upland grasslands and supported upland grasslands, perennial, and seasonal wetland communities. The communities coincided with areas of previously observed ponding and hydric soil indicators identified during the delineation procedures. Terminology and taxonomy follow the Jepson Manual (Hickman, 1993).

Wetland Plant Communities:
Cottonwood (*Populus fremontii*), Sandbar Willow (*Salix exigua*), Marshpepper Smartweed (*Polygonum hydropiper*), Purple Lovegrass (*Eragrostis pectinacea*), Tall Flatsedge (*Cyperus eragrostis*), Barnyard Grass (*Echonochloa crusgalli*), Red Willow (*Salix laevigata*), Rough Cockle-bur (*Xanthium strumarium*), Spikerush (*Eleocharis* sp.), Shining Willow (*Salix lucida*), Curly Dock (*Rumex crispus*)

Upland Plant Communities:
Johnson Grass (*Sorghum halepense*), Oats (*Avena* sp.), Annual Ryegrass (*Lolium multiflorum*), Barley (*Hordeum leporinum*), Willow-leaved Lettuce (*Lactuca saligna*), Soft Chess (*Bromus hordeaceous*)

3.0 Delineation

3.1 Procedures

Aerial photographs of the site taken in August 1998 and February 2002 were examined for wetland signature. The site was traversed on foot to identify potential wetland areas. The wetland-upland boundary was determined based on the presence or inference of positive indicators of all mandatory criteria. Standard data sheets (Appendix A) were used to describe plants, soils, and hydrological characteristics.

The site was delineated on a 1: 120 aerial photograph (see Figure 2). Sampling sites are marked and numbered according to wetland area, as indicated on the attached delineation map.

3.2 Findings

Total impacted potential jurisdictional wetland acreage of the completed project will be 0.269 acres. While lower chroma soils were observed in Area B (sample identification B-W), vegetation and hydrology criterion for wetlands were absent. See Table 1 for the acreage of each area.

Area ID	Type of Community	Acreage
Area A	Seasonal wetland*	0.073
Area B	Upland	0.064
Area C	Seasonal wetland*	0.032
Area D	Seasonal wetland*	0.142
Area E	Seasonal wetland*	0.015
Area F	Seasonal wetland*	0.007
Total wetland area		0.269

* Potential Jurisdictional Season Wetlands

4.0 Wetland Mitigation for Impacts

The completion of the proposed project will result in filling approximately 0.269 acres of potential jurisdictional seasonal wetlands. Mitigation may be fulfilled by payment for the impacted acreage to an existing Butte County mitigation bank, located in Durham, CA.

References

Corps of Engineers Wetlands Delineation Manual. 1987. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS. Tech. Rpt. Y87-1.

Helley, Edward J. and Harwood, David S. 1985. Geologic Map of the Late Cenozoic Deposits of the Sacramento Valley and Northern Sierran Foothills, CA. U.S. Geological Survey.

Hickman, J.H. (ed.). 1993. The Jepson Manual of Higher Plants of California. University of California Press, Berkeley, CA.

Burkett, Dean. USDA, Natural Resources Conservation Service, Butte County Soil Survey Office. October 2002. Verbal Communication.

Figure 1: Site Location Map

Site Location Map

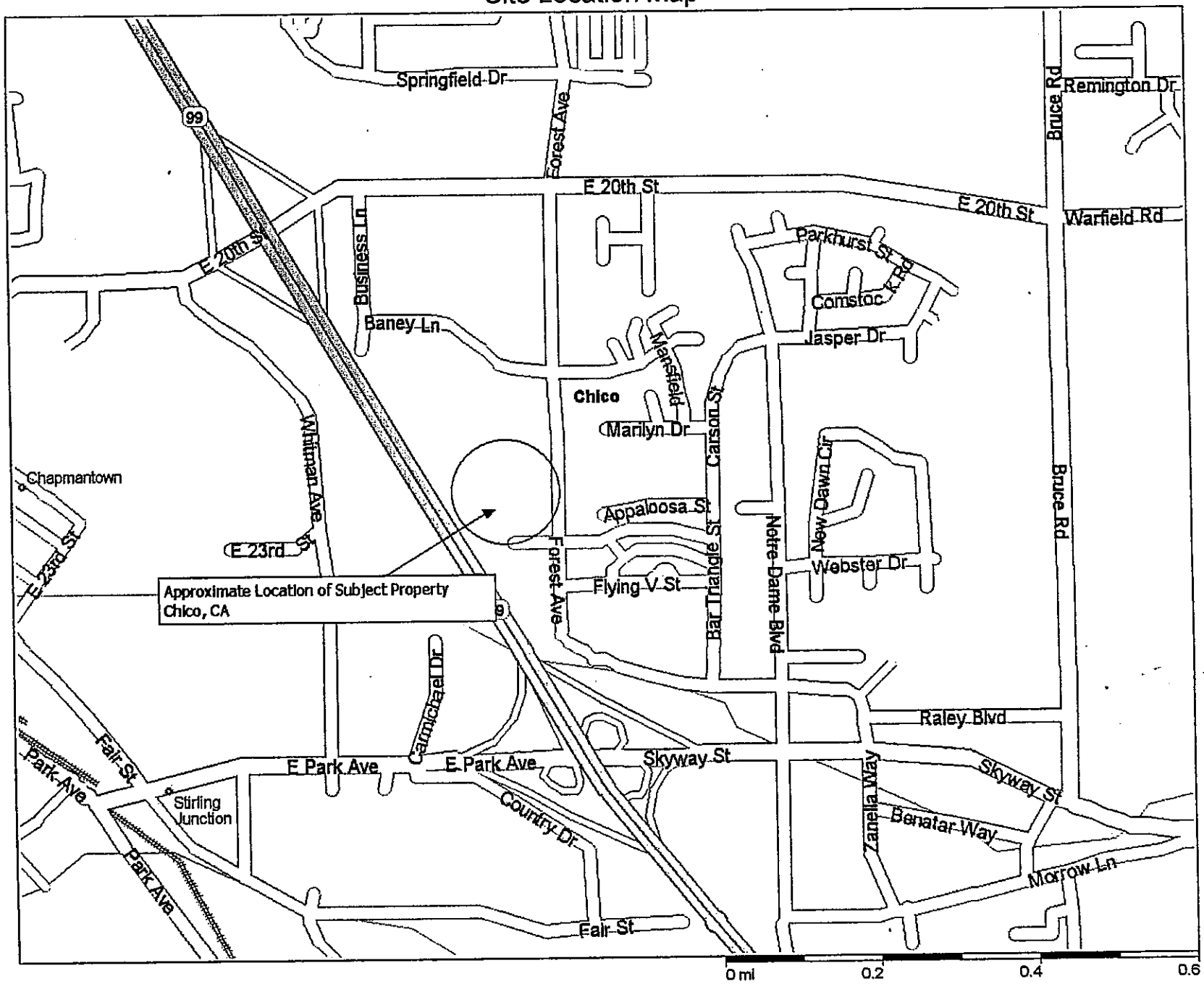

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Figure 2: Wetlands Delineations

Appendix A: Wetlands Delineations Data Sheets

A-U

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PACIFIC Wal-Mart	Date: 10/9/22
Applicant/Owner: PACLAND	County: Butte Co.
Investigator(s): M. Bailey / L. Black	State: CA
Do normal circumstances exist on site? Yes **No**	Community ID: A
Is the site significantly disturbed (atypical situation)? **Yes** No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.) Yes No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sorghum halepense	herb	FACU	9.		
2. Avena sp	herb	U	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-).

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water In Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

A-W

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: PAC 101 / Wal-Mart	Date: 10/1/02
Applicant/Owner: PACLP LLC	County: Butte Co.
Investigator(s): M. Bailey / L. Black	State: CA
Do normal circumstances exist on site? Yes (No)	Community ID: 1
Is the site significantly disturbed (atypical situation)? (Yes) No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.) (Yes) No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Paspalum dilatatum	herb	FAC	9.		
2. Eragrostis pectinacea	herb	FAC	10.		
3. Polygonum hydropiper	herb	OBL	11.		
4. Populus fremontii	tree	FACW	12.		
5. Salix exigua	shrub	OBL	13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
X Other (Explain in Remarks)

Remarks: Soil moist to surface

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

B-W

Project/Site: PAC 101 / Wal-Mart	Date: 10/9/02
Applicant/Owner: PACLAND	County: Butte
Investigator(s): M. Bailey / L. Black	State: CA
Do normal circumstances exist on site? Yes (No)	Community ID: B
Is the site significantly disturbed (atypical situation)? (Yes) No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.) (Yes) No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cyperus eragrostis	herb	FACW	9.		
2. Avena sp	herb	U	10.		
3. Lolium multiflorum	herb	U	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-). 33 %

Remarks: Vegetation not carried

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

C-2

Project/Site: PAC 101 Wal-Mart	Date: 10/9/02
Applicant/Owner: PACLAND	County: Butte
Investigator(s): M. Bailey / L. Black	State: CA
Do normal circumstances exist on site? Yes (No)	Community ID: C
Is the site significantly disturbed (atypical situation)? (Yes) No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.) (Yes) No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Sorghum halepense	herb	FACU	9.		
2. Xanthium strumarium	herb	FACW	10.		
3. Echinochloa crusgalli	herb	FACW	11.		
4. Salix laeviaata	shrub	FACW	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-). 75%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
X Other (Explain in Remarks)

Remarks: Soil moist to surface

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

D1-D

Project/Site: PAC 101 / Wal-Mart	Date: 10/9/02
Applicant/Owner: PACLAND	County: Butte
Investigator(s): M. Bailey / L. Black	State: CA
Do normal circumstances exist on site? Yes (No)	Community ID: D
Is the site significantly disturbed (atypical situation)? (Yes) No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.) (Yes) No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Eleocharis sp	herb	OBL	9.		
2. Sorghum halepense	herb	FACU	10.		
3. Salix lucida ssp			11.		
4. lasiandra	shrub	OBL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-). 66-67 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
X Other (Explain in Remarks)

Remarks: Soil moist to surface

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

D2-W

Project/Site: PAC 101 / Wal-Mart	Date: 10/9/02
Applicant/Owner: PACLAND	County: Butte
Investigator(s): M. Bailey / L Black	State: CA.
Do normal circumstances exist on site? Yes (No)	Community ID: D
Is the site significantly disturbed (atypical situation)? (Yes) No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.) (Yes) No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cyperus eragrostis	herb	FACW	9.		
2. Rumex crispus	herb	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-). 100%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

E-W

Project/Site: PAC 101 / Wal-Mart	Date: 10/7/02
Applicant/Owner: PAC LAND	County: Butte
Investigator(s): M. Bailey / L. Black	State: CA
Do normal circumstances exist on site? Yes (No)	Community ID: E
Is the site significantly disturbed (atypical situation)? (Yes) No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.) (Yes) No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Cyperus eragrostis	herb	FACW	9.		
2. Echinochloa crusgalli	herb	FACW	10.		
3. Sorghum halepense	herb	FACU	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-). 60-67%

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

F-W

Project/Site: PAC 101 / Walt Hart			Date: 10/9/02
Applicant/Owner: PACLAND			County: Butte
Investigator(s): M. Bailey / L. Black			State: CA
Do normal circumstances exist on site?	Yes	(No)	Community ID: E
Is the site significantly disturbed (atypical situation)?	(Yes)	No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.)	(Yes)	No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Eleocharis sp	herb	OBL	9.		
2. Salix laevigata	shrub	FACW	10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-). 100 %

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
X Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
X FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: soil moist w/in 1/2" of surface

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

E-U

Project/Site: PAC 10:/ Wal Mart	Date: 10/9/02
Applicant/Owner: PACLAND	County: Butte
Investigator(s): M. Kulick / L. Black	State: CA
Do normal circumstances exist on site? Yes (No)	Community ID: E
Is the site significantly disturbed (atypical situation)? (Yes) No	Transect ID:
Is the area a potential problem area? (If needed, explain on reverse.) (Yes) No	Plot ID:

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Hordeum leporinum	herb	U	9.		
2. Lactuca saliana	herb	U	10.		
3. Bromus hordeaceous	herb	U	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

* *Dominant Species*

Percent of dominant species that are OBL, FACW or FAC (excluding FAC-). 0

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: None (in.)

Depth to Free Water in Pit: None (in.)

Depth to Saturated Soil: None (in.)

Wetland Hydrology Indicators

Primary Indicators:
___ Inundated
___ Saturated in Upper 12 Inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
___ Oxidized Root Channels in Upper 12 Inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks:

Appendix B: Soils Data

SITE AND PEDON DESCRIPTION

Print Date: 10/10/2002

Soil Name as Described/Sampled: Galt
Soil Name as Correlated:
Classification: Fine, smectitic, thermic Aquic Durixererts

Description Date: 05/18/1989
Describer: SJB

Site ID: 439-22-47 Pedon ID: 89CA612001

Site Note:

Pedon Type: modal pedon for series Lab Source ID:
Pedon Purpose: field note Lab Pedon #:
Taxon Kind: series

Location Information:
County: Butte Quad Sheet Name: Foster Island, California
State: California MLRA: 17 – Sacramento And San Joaquin Valleys
Soil Survey Area: CA612 – Butte Area, California
Map Unit: 100 – ANITA-GALT COMPLEX, 0 TO 3 PERCENT SLOPES

Location Description: 0.3 miles east of Soto Lake
Legal Description: approximately 1000 feet north and 3100 feet west of the southwest corner of Section
5, Township 23 N, Range 1 W

Latitude: 39 degrees 52 minutes 17.00 seconds north
Longitude: 122 degrees 1 minutes 23.00 seconds west
Datum: NAD27
UTM Zone: UTM Easting: UTM Northing:

Geomorphic Setting: terrace
Upslope Shape: concave Cross Slope Shape: concave
Slope: 2.0 percent Aspect: (deg)
Elevation: feet, meters
Drainage Class: somewhat poorly

Parent Material:
Bedrock Kind: Bedrock Depth: inches (cm)
Bedrock Hardness:

Surface Fragments:

Particle Size Control Section:

Diagnostic Features:

Kind	Top Depth (in)	Bottom Depth (in)	Top Depth (cm)	Bottom Depth (cm)
Aquic Conditions				
Slickensides	29	32	74	81
Duripan	32	39	81	99

Pedon Restrictive Features:

Kind	Top Depth (in)	Bottom Depth (in)	Top Depth (cm)	Bottom Depth (cm)
Duripan	32	39	81	99

Field Measured Properties:

Pedon Notes:

A1--0 to 3 inches, (0 to 8 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; strong very fine angular blocky structure; extremely hard, friable, , very sticky, very plastic; common fine roots and many very fine roots; many very fine tubular pores; 2 percent 2 to 75 millimeter mixed rock fragments; slightly alkaline, pH 7.5 by Hellige-Truog; ; clear smooth boundary.

A2--3 to 13 inches, (8 to 33 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; strong fine angular blocky and strong medium and coarse angular blocky structure;
extremely hard, firm, , very sticky, very plastic; few fine roots and many very fine roots; many very fine tubular pores; 10 percent pressure faces; 2 percent 2 to 75 millimeter mixed rock fragments; slightly alkaline, pH 7.5 by Hellige-Truog; ; gradual smooth boundary.

A3--13 to 29 inches, (33 to 74 cm); very dark grayish brown (10YR 3/2) clay, very dark grayish brown (10YR 3/2) moist; strong medium and coarse angular blocky structure; extremely hard, firm, , very sticky, very plastic; common very fine roots; many very fine tubular pores; slickensides (pedogenic) and continuous pressure faces; 2 percent 2 to 75 millimeter mixed rock fragments; slightly alkaline, pH 7.5 by Hellige-Truog; ; gradual smooth boundary. HORIZON NOTE: cracks to 32 inches, 1 1/4 inches wide at 20 inches

A4--29 to 32 inches, (74 to 81 cm); dark brown (7.5YR 3/2) clay, dark brown (7.5YR 3/2) moist; moderate medium subangular blocky structure; extremely hard, firm, , very sticky, very plastic; few very fine roots; many very fine tubular pores; slickensides (pedogenic); 2 percent 2 to 75 millimeter mixed rock fragments; moderately alkaline, pH 8.0 by Hellige-Truog; ; clear smooth boundary.

2Bkqm--32 to 39 inches, (81 to 99 cm); brown (10YR 4/3); ; , ; strong effervescence;

LOCATION REDSLUFF CA

Tentative Series
IRD: AEC/DWB/DWH/SBS
02/2000

REDSLUFF SERIES

The Redsluff series consists of very deep, moderately well drained soils that formed in alluvium from mixed sources. Redsluff soils are on low terraces. Slopes range from 0 to 2 percent. The mean annual precipitation is about 24 inches and the mean annual temperature is about 61 degrees F.

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, thermic Mollic Haploxeralfs

TYPICAL PEDON: Redsluff gravelly loam on a less than 1 percent slope under a cover of annual grasses at an elevation of 184 feet. (Colors are for dry soil unless otherwise noted) When described on 5/14/97 the soil was dry throughout.

Ap--0 to 2 inches; light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; weak medium subangular blocky structure parting to strong fine granular; slightly hard, friable, slightly sticky and slightly plastic; many very fine and few fine roots; many fine to coarse vesicular and tubular pores; 20.0 percent clay; 25 percent gravel; noneffervescent; slightly acid(pH 6.5); clear smooth boundary. (0 to 12 inches thick)

Bt1--2 to 5 inches; light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; moderate fine and medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many very fine and few fine roots; common fine and medium tubular pores; 24.0 percent clay; common distinct continuous clay films on faces of peds; 25 percent gravel; noneffervescent; slightly acid(pH 6.5); clear wavy boundary.

Bt2--5 to 12 inches; brown (7.5YR 5/3) gravelly clay loam, dark reddish brown (5YR 3/3) moist; moderate medium subangular blocky structure; hard, very firm, moderately sticky and moderately plastic; common very fine and fine roots; many fine and medium tubular pores; 28.0 percent clay; many distinct continuous clay films on faces of peds; 15 percent gravel; noneffervescent; neutral(pH 6.7); gradual smooth boundary.

Bt3--12 to 21 inches; brown (7.5YR 5/3) gravelly loam, dark reddish brown (5YR 3/3) moist; moderate medium subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine to medium tubular pores; 26.0 percent clay; many distinct continuous clay films throughout; 30 percent gravel; noneffervescent; neutral(pH 6.7); gradual smooth boundary.

Bt4--21 to 29 inches; light brown (7.5YR 6/3) gravelly loam, dark reddish brown (5YR 3/3) moist; moderate fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; 21.0 percent clay; many distinct continuous clay films on faces of peds; 25 percent gravel; noneffervescent; neutral(pH 6.8); clear wavy boundary.

Bt5--29 to 37 inches; light brown (7.5YR 6/3) gravelly loam, brown (7.5YR 4/3) moist; weak fine and medium subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; common very fine and fine roots; many very fine and fine tubular pores; 19.0 percent clay; many distinct continuous clay films on faces of peds and in pores; 25 percent gravel; noneffervescent; neutral(pH 7.0); clear smooth boundary.

Bt6--37 to 42 inches; light brown (7.5YR 6/3) extremely gravelly sandy loam, brown (7.5YR 4/3) moist; weak fine and medium subangular blocky structure; loose, nonsticky and nonplastic; common very fine and fine roots; many very fine and fine tubular pores; 15.0 percent clay; common faint continuous clay films on faces of peds; 40 percent gravel and 25 percent cobbles; noneffervescent; neutral(pH 7.0); abrupt smooth boundary. (Combined thickness of the Bt horizon is 30 to 65 inches thick)

Cq--42 to 80 inches; extremely gravelly loamy sand; single grain; loose, nonsticky and nonplastic; few very fine and fine roots; many very fine and fine interstitial pores; 1.0 percent clay; common fine and medium irregular rigid silica concretions under rock fragments; 45 percent gravel and 35 percent cobbles; noneffervescent; neutral(pH 7.0). (0 to 45 inches thick)

TYPE LOCATION: Butte County, California; about 0.38 miles East of the intersection of Keefer Road and Highway 99, approximately 1160 feet North and 2450 feet East of the Southwest corner of Section 30, Township 23N, Range 1E, Mount Diablo Meridian; USGS Nord topographic quadrangle; lat. 39 degrees 48 minutes 51.9 seconds N. and long. 121 degrees 54 minutes 34.7 seconds W.

RANGE IN CHARACTERISTICS: Depth to extremely gravelly or coarser substratum is 35 to 65 inches. The mean annual soil temperature is 63 to 64 degrees F. The soil moisture control section is dry in all parts from about May to about October (about 150-180 days). The particle-size control section averages 25 to 35 percent clay, and 2 to 25 percent rock fragments, mostly gravel. Mineralogy is mixed. A fluctuating water table occurs at depths of 35 to 80 inches from November through May (endosaturation). Rock fragments on the surface range from 0 to 15 percent gravel, and 0 to 5 percent cobbles. Some pedons have weakly cemented Bq horizons below 60 inches.

The Ap horizon dry color is 10YR 5/3, 5/4, 6/3, 6/4; 7.5YR 4/3, 4/4, 5/3, or 6/3. Moist color is 7.5YR 3/2, 3/3; 5YR 3/3; 10YR 3/2, or 3/3. Texture is loam or gravelly loam. Clay content ranges from 16 to 24 percent. Rock fragments range from 0 to 30 percent gravel. Reaction ranges from slightly acid to slightly alkaline.

The upper part of the Bt horizon dry color is 7.5YR 5/3, 5/4, 6/3; or 5YR 5/4. Moist color is 10YR 3/3, 4/3; 7.5YR 3/2, 3/3, 4/2; 5YR 3/3 or 4/3. Texture is loam and clay loam and gravelly, cobbly, very gravelly, and very cobbly equivalents. Clay content ranges from 20 to 35 percent. Rock fragments range from 5 to 30 percent gravel, and 0 to 30 percent cobbles. Reaction ranges from slightly acid to slightly alkaline.

The lower part of the Bt horizon dry color is 7.5YR 5/4, 6/3, 6/4; or 5YR 5/4. Moist color is 7.5YR 4/3, 4/4; 5YR 3/3, 4/3; or 10YR 4/3. Texture is gravelly loam, extremely gravelly sandy loam, extremely gravelly coarse sandy loam, or extremely cobbly sandy loam. Clay content ranges from 10 to 20 percent. Rock fragments range from 25 to 70 percent gravel, 0 to 45 percent cobbles. Reaction ranges from neutral to slightly alkaline.

The Cq horizon dry color is 7.5YR 6/4 or 7/4. Moist color is 7.5YR 3/3, 4/3; or 5YR 3/3. Texture is

extremely gravelly loamy sand, extremely gravelly coarse sandy loam, or extremely cobbly coarse sandy loam. Clay content ranges from 1 to 8 percent. Rock fragments range from 10 to 50 percent gravel, 15 to 45 percent cobbles, and 0 to 5 percent stones. Reaction ranges from neutral to moderately alkaline.

COMPETING SERIES: These are the Perkins and Olashes soils. Perkins soils have greater than 10 percent clay and less than 65 percent coarse fragments in the C horizon. Olashes soils have less than 15 percent rock fragments in the Bt horizon.

GEOGRAPHIC SETTING: Redsluff soils are on low terraces. Slopes are 0 to 2 percent. These soils formed in alluvium weathered from mixed sources. Elevation is 175 to 350 feet. Mean annual precipitation is 24 to 28 inches. The mean annual temperature is 61 to 62 degrees F. Frost free season is 245 to 265 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Redtough(T), Redswale(T) and Charger(T) soils. Redtough(T) soils are on high terraces and are shallow. Redswale(T) soils are on high terraces and are very shallow. Charger(T) soils are on alluvial fans and are coarse-loamy.

DRAINAGE AND PERMEABILITY: Moderately well drained; very low to low runoff; moderate over rapid and very rapid permeability. The soils are rarely flooded for very brief periods in December to March. A fluctuating apparent watertable occurs at depths of 35 to 80 inches from December through April.

USE AND VEGETATION: This soil is used for urban development, range, and orchards. Vegetation is annual grasses and forbs and scattered valley oak.

DISTRIBUTION AND EXTENT: Butte County, California and occurs in the 262Aa (North Valley Alluvium) subsection of the 262A (Great Valley) section. MLRA 17. The soils are not extensive.

MLRA OFFICE RESPONSIBLE: Davis, California

SERIES PROPOSED: Butte County, California 1999. Source of name is coined.

REMARKS:
Diagnostic horizons and features recognized in this pedon are:
Ochric epipedon - zone from 0 to 2 inches (Ap)
Argillic horizon - zone from 2 to 21 inches (Bt1, Bt2, Bt3)

Particle-size control section - zone from 2 to 21 inches (Bt1, Bt2, Bt3)
The soil moisture control section - zone from 7 to 22 inches (Bt2, Bt3, Bt4)

Edit log: 02/2000,AEC- Series submitted for name reservation and placement in SC file. Series used in Butte County, CA.

National Cooperative Soil Survey
U.S.A.

HANOVER
INCORPORATED

12 March 2003

Ms. Laura Whitney
Department of the Army
U.S. Army Engineer District, Sacramento
Corps of Engineers
1325 J Street
Sacramento, CA 95814-2922

Re: Duncan Shopping Center Expansion, Forest Avenue, Chico, Butte Co., CA
Identification Number 200300094

Dear Ms. Whitney,

The following letter and associated attachments serve as an addendum to the original 28 October 2002 Wetlands Delineation for the above referenced site as per your correspondence dated 27 February 2003.

* Note: As a point of clarification, disking and grading of the property appears to have occurred on a regular basis over many years. There was no specific one-time event that would allow us to provide photographs depicting the site conditions prior and subsequent to the event.

(1) We were unable to acquire color, aerial photographs of the site before the construction of the neighboring Wal-Mart (*see above Note). Sources checked included the project proponent, Army Corps of Engineers, Heritage Partners Planning and Development, the City of Chico, and US Geological Survey.
(2) Color ground photos of the site as is currently exists (*see above Note).
(3) Please find the enclosed amended map depicting the study area boundary and the amended table from Section 3.2 of the original report.

If you have any questions or comments please do not hesitate to contact our office at 530-342-1333 or via e-mail at lynablk@pacbell.net.

Thank you,

Lyna R. Black
Biologist/Environmental Scientist

cc: Mr. Bill Dunning, PACLAND

HANOVER ENVIRONMENTAL SERVICES, INC.
[illegible] NORD AVENUE
CHICO, CALIFORNIA [illegible]

PH 530.342.1333
FAX 530.342.1490
EMAIL HAN-ENV@PACBELL.COM

Attachment A: Color Ground Photographs

Photo 1: Northeastern corner of subject property-approximate location of samples au and aw (Photo taken in a southwesterly direction)

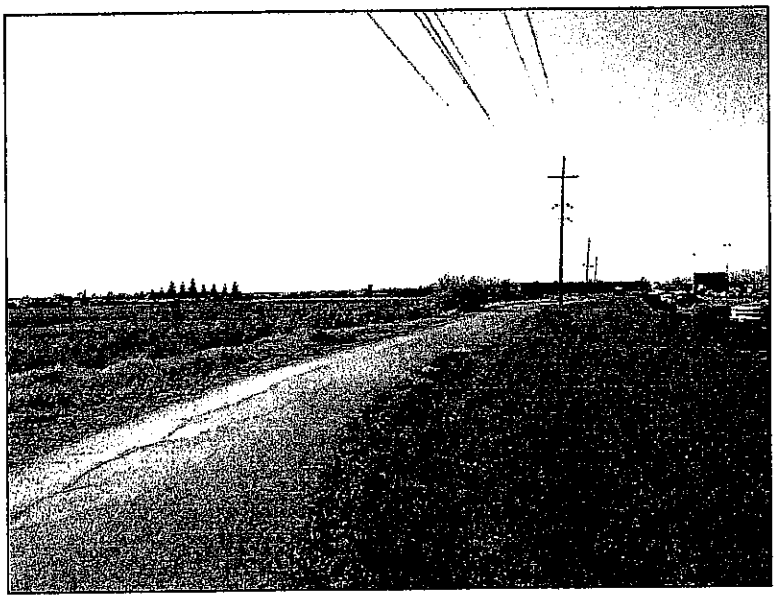

Photo 2: Northeastern corner of subject property (Photo taken in a westerly direction)

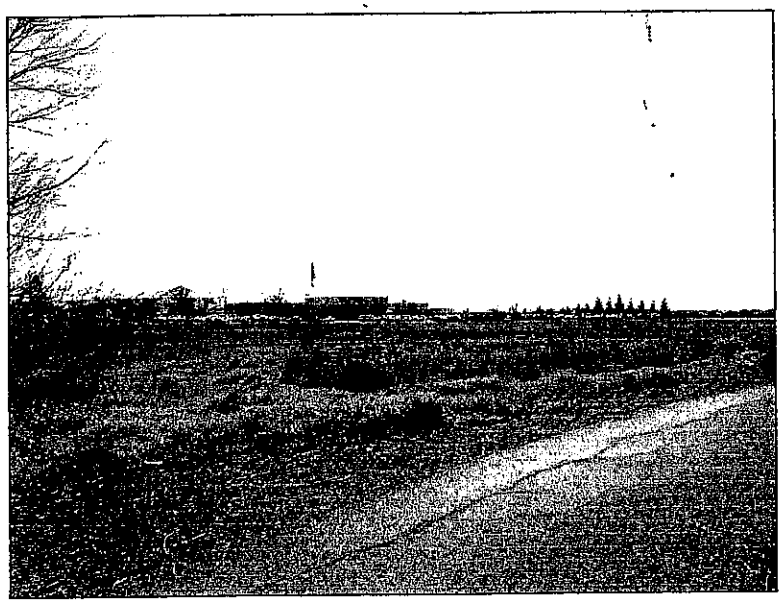

Photo 3: Northern portion of subject property-approximate location of sample bu (Photo taken in a southwesterly direction)

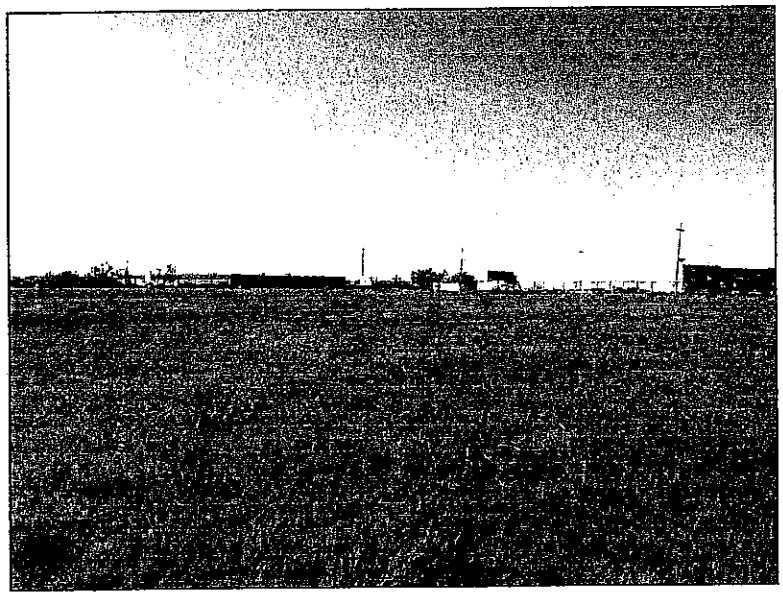

Photo 4: View of subject property from near the southern boundary (Photo taken in a northwesterly direction)

Photo 5: Northern portion of subject property-approximate location of sample point cw (Photo taken in a northwesterly direction)

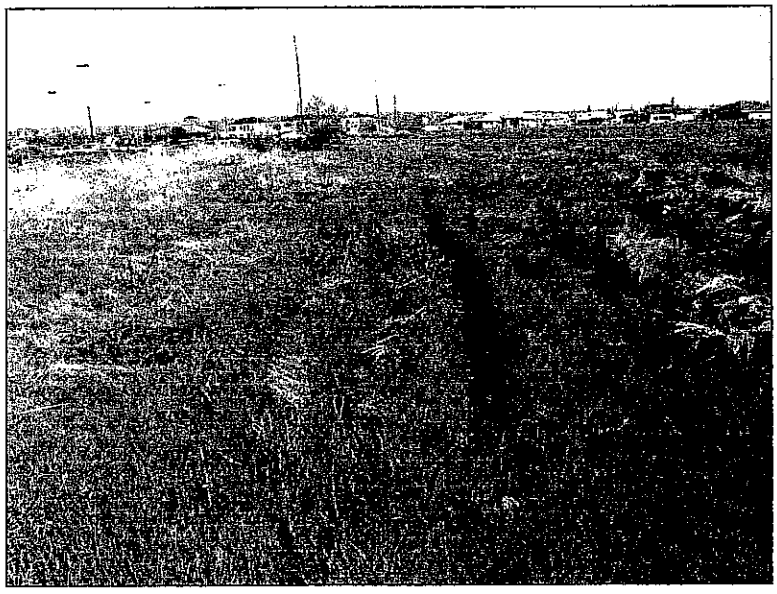

Photo 6: Northern portion of subject property-approximate location of sample points d1w and d2w (Photo taken in a northwesterly direction)

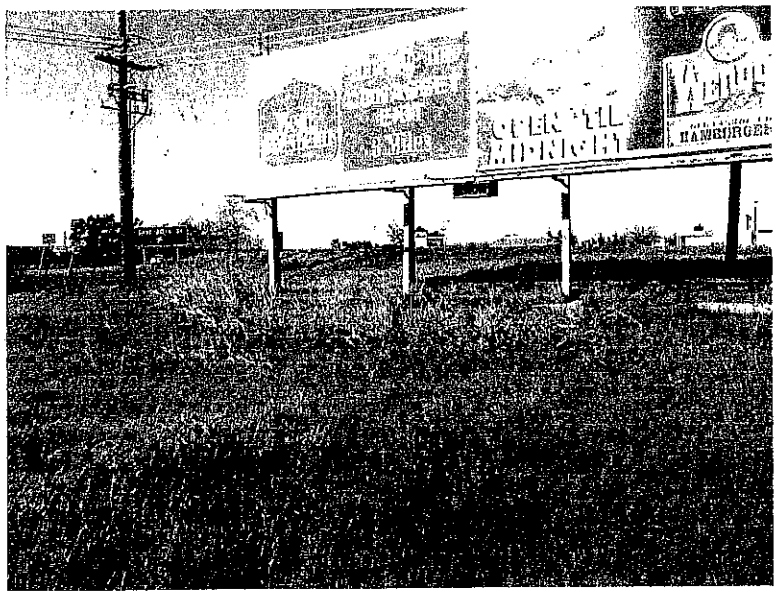

Photo 7: Northwestern portion of subject property-approximate location of sample points ew and eu (Photo taken in a northwesterly direction)

Photo 8: Northwestern portion of subject property-approximate location of sample point fw (Photo taken in a northwesterly direction)

Photo 9: View of subject property from the northwestern corner
(Photo taken in a southeasterly direction)

Attachment B: Amended Wetlands Delineation Map & Findings Table

N
Soil Survey Point
Wetland Boundary
Project Boundary
100
0
100
200 Feet
G.P.S. data collected and differentially corrected on 10-10-02

AMENDED FINDINGS TABLE

Area ID	Type of Community	Acreage
Total Project Area	Total	11.05
Area A	Seasonal wetland*	0.073
Area B	Upland	0.064
Area C	Seasonal wetland*	0.032
Area D	Seasonal wetland*	0.142
Area E	Seasonal wetland*	0.015
Area F	Seasonal wetland*	0.007
Total wetland area		0.269

* Potential Jurisdictional Season Wetlands

Appendix B: Botanical Survey

SURVEY FOR VASCULAR PLANTS LISTED BY FEDERAL, STATE, OR OTHER AGENCIES AS SENSITIVE OR OF SPECIAL STATUS

THE DUNCAN SHOPPING EXTENSION SITE (PAC 101B), CONSISTING OF APPROXIMATELY 11 ACRES OF LAND LOCATED WEST OF FOREST AVENUE, BETWEEN THE WITTMEIER AUTOMOBILE DEALERSHIP AND WAL-MART, SOUTH CHICO, BUTTE COUNTY, CALIFORNIA

Prepared by:

Kingsley R. Stern

Kingsley R. Stern, Ph.D.
Field Botany Consultant
1 Spinnaker Way
Chico, CA 95926
(530) 876-9933

For:

Hanover Environmental Consulting
2205 Nord Avenue
Chico, CA 95926

April 16, 2003

SURVEY FOR VASCULAR PLANTS LISTED AS SENSITIVE OR OF SPECIAL STATUS, CONDUCTED APRIL 14 & 15, 2003, ON APPROXIMATELY 11 ACRES OF LAND (DUNCAN SHOPPING EXTENSION--PAC 101B) LOCATED WEST OF FOREST AVENUE, BETWEEN THE WITTMEIER AUTOMOBILE DEALERSHIP AND WAL-MART, SOUTH CHICO, CALIFORNIA

A. Habitat

The project site consists primarily of Valley Grassland habitat that has in the past been disturbed, with scattered elements of Riparian Habitat present particularly along the north and west margins of the property. A limited amount of dumping of concrete and other trash has occurred at a few areas within the property. There are no improved roads present, but there is a foot trail that traverses the site in a roughly northeast to southwest direction. Access to the site is via Forest Avenue immediately south of the Chico Wal-Mart store.

Valley Grassland

Valley Grassland habitats are characterized by the predominance of annuals whose seeds tend to germinate during the fall and winter rainy season, the species usually completing their life cycles by the onset of summer. A few mostly bulbous perennials may appear and flower later. Vernal pools, with their own associated floras may occur throughout a Valley Grassland habitat. At this particular project site there are no well-developed vernal pools. A number of introduced, mostly weedy species have become established wherever disturbances have occurred.

On the dates of the field survey, the following species were identified: blow wives, clasping onion, fiddleneck, wild oats, lesser quaking grass, ripgut brome, soft chess, yellow star thistle, chicory (previous season's growth), bull thistle, bindweed, blue dicks, round-toothed ookow, barnyard grass, big heronbill, red-stememd filaree, cleavers, wall bedstraw, cutleaf geranium, dove's foot geranium, weedy cudweed, hare wall barley, fluellin, prickly lettuce, tidy tips, rosy meadowfoam, annual ryegrass, bicolored lupine, sky lupine, bull mallow, black medick, bur clover, English plantain, common plantain, dandelion, western buttercup, prickly sow thistle, common sow thistle, Johnson grass, common hedge parsley, rose clover, crimson clover, white clover, tomcat clover, Ithuriel's spear, American vetch, spring vetch, rattail fescue, and others.

Riparian Habitat

Riparian habitats, which are associated with bodies of water, are not well-developed on the property, but riparian elements are scattered throughout the site, particularly at the north and west margins. On the dates of the field survey the following species were noted: mule fat, tall cyperus, spike rush, coyote thistle,

Fremont's cottonwood, stipitate popcorn follower, prickleseed buttercup, curly dock, arroyo willow, cocklebur (previous season's growth), and Fremont's zigadene. A number of species associated with Valley Grassland mentioned above were also associated with the riparian species present.

B. Sensitive Plants and Other Plants of Special Status

The sixth edition of the *Inventory of Rare and Endangered Plants of California*, published by the California Native Plant Society in 2001, lists for Butte County some 92 taxa that are considered sensitive or threatened to varying degrees. A number of the taxa are also on or are considered candidates for federal and state lists of such plants, and the status of several has been changed since publication of the fifth edition of the *Inventory* in 1994. Several taxa listed as sensitive have been reported from areas within a few miles of the project site. Most, however, are associated with special habitats that are not present at this particular location.

Among the listed taxa that potentially could occur at this site are Butte County checkerbloom (*Sidalcea robusta*), and Tehama navarretia (*Navarretia heterandra*), although the habitat also could support other listed sensitive species. Blue elderberry (*Sambucus mexicana*), which is not considered threatened but is accorded special status because it is host to a rare elderberry beetle (*Desmocerus californicus eiomorphus*) could exist toward the western margin of the site.

C. Methods

The site was surveyed systematically on foot, with special emphasis being placed on searching for listed sensitive or special status plants. Several specimens were taken for further examination and a checklist of the flora present was prepared. As to be expected when a field survey is conducted in the spring, some late-flowering species had not yet appeared, but none of the later-flowering sensitive species that potentially could be present in this type of habitat are listed by agencies at this time.

D. Results

Although all sensitive or special status plants potentially present were searched for, no evidence of current or recent past presence of any of them was found, and they are presumed not to be present at this time.

E. Mitigations

The only mitigations required pertain to the wetland delineations previously conducted on the site.

CHECKLIST OF IDENTIFIABLE VASCULAR PLANTS THAT WERE OBSERVED ON THE DATE OF THE FIELD SURVEY

Scientific name	**Common Name**
Achyrachaena mollis	Blow wives
Allium amplectens	Clasping onion
Amsinckia menziesii	Fiddleneck
Avena fatua	Wild oats
Baccharis salicifolia	Mule fat
Briza minor	Lesser quaking grass
Bromus diandrus	Ripgut brome
Bromus hordeaceus	Soft chess
Centaurea solstitialis	Yellow star thistle
Cichorium intybus	Chicory
Cirsium vulgare	Bull thistle
Convolvulus arvensis	Bindweed
Cyperus eragrostis	Tall cyperus
Dichelostemma capitatum	Blue dicks
Dichelostemma multiflorum	Round-toothed ookow
Echinochloa crus-galli	Barnyard grass
Eleocharis sp.	Spike rush
Erodium botrys	Big heronbill
Erodium cicutarium	Red-stemmed filaree
Eryngium castrense	Coyote thistle
Galium aparine	Cleavers
Galium parisiense	Wall bedstraw
Geranium dissectum	Cutleaf geranium
Geranium molle	Dove's foot geranium
Gnaphalium luteo-album	Weedy cudweed
Hordeum murinum ssp. *leporinum*	Hare wall barley
Kickxia elatine	Fluellin

Scientific name	Common Name
Lactuca saligna	Willow-leaved lettuce
Lactuca serriola	Prickly lettuce
Layia fremontii	Fremont's cottonwood
Limnanthes douglasii ssp. *rosea*	Rosy meadowfoam
Lolium multiflorum	Annual ryegrass
Lupinus bicolor	Bicolored lupine
Lupinus nanus	Sky lupine
Malva nicaeensis	Bull mallow
Medicago lupulina	Black medick
Medicago polymorpha	Bur clover
Plagiobothrys stipitatus	Stipitate pocorn flower
Plantago lanceolata	English plantain
Plantago major	Common plantain
Populus fremontii	Fremont's cottonwood
Ranunculus muricatus	Prickleseed buttercup
Ranunculus occidentalis	Western buttercup
Rumex crispus	Curly dock
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Sonchus asper	Prickly sow thistle
Sonchus oleraceus	Common sow thistle
Sorghum halepense	Johnson grass
Taraxacum officinale	Dandelion
Torilis arvensis	Common hedge parsley
Trifolium hirtum	Rose clover
Trifolium incarnatum	Crimson clover
Trifolium repens	White clover
Trifolium willdenovii	Tomcat clover
Triteleia hyacinthina	Wild hyacinth
Triteleia laxa	Ithuriel's spear

Scientific name	**Common Name**
Vicia americana	American vetch
Vicia sativa	Spring vetch
Vulpia myuros	Rattail fescue
Xanthium strumarium	Cocklebur
Zigadenus fremontii	Fremont's zigadene

Appendix C: California Department of Fish and Game
Natural Diversity Data Base
Chico Quad

Full Expanded Report – One Record Per Page
Chico Quad

BUTEO SWAINSONI
SWAINSON'S HAWK

Element Code: ABNKC19070

Status
Federal: Species of Concern
State: Threatened

NDDB Element Ranks
Global: G4
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: (NESTING) BREEDS IN STANDS WITH FEW TREES IN JUNIPER-SAGE FLATS, RIPARIAN AREAS AND IN OAK SAVANNAH.
Micro: REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Occurrence No. 699 Map Index: 38867
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: SNOWDEN, J. 1998 (OBS)

Dates Last Seen
Element: 1998-05-18
Site: 1998-05-18

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: 2.5 MILES ESE OF CHICO

Lat/Long: 39°40'42" / 121°48'44"
UTM: Zone-10 N4392524 E601868
Mapping Precision: SPECIFIC
Symbol Type: POINT
Radius: 80 meters

Township: 21N
Range: 01E
Section: 13 Qtr NE
Meridian: M
Elevation: 180 ft

Comments
Distribution: NEST TREE IS LOCATED IN AN ENGLISH WALNUT ORCHARD NEAR THE SOUTH END OF CHICO STATE FARM.
Ecological: NEST TREE IS AN ENGLISH WALNUT IN THE NORTH (OUTER) ROW OF THE ORCHARD; NEST IS LOCATED 20+ FEET IN THE TREE. ADJACENT FIELDS TO THE NORTH FOR 1 MILE PLANTED IN WHEAT, ROW CROPS, OR FALLOW/WEEDY VEGETATION.
Threat: THREATENED BY HABITAT LOSS TO ENCROACHMENT BY THE CITY OF CHICO.
General: 2 ADULTS OBSERVED NESTING ON 18 MAY 1998.
Owner/Manager: CSU-CHICO

Source Codes
SN098F02

Date: 04/14/2003 Commercial Version
Report: RF2FULL Information dated 12/02/2002

Full Expanded Report - One Record Per Page
Chico Quad

AGELAIUS TRICOLOR
TRICOLORED BLACKBIRD

Element Code: ABPBXB0020

Status	NDDB Element Ranks	Other Lists
Federal: Species of Concern	Global: G2	CDFG Status: SC
State: None	State: S2	

Habitat Associations
General: (NESTING COLONY) HIGHLY COLONIAL SPECIES, MOST NUMBEROUS IN CENTRAL VALLEY & VICINITY. LARGELY ENDEMIC TO CALIFORNIA.
Micro: REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, & FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.

*** SENSITIVE ***
Occurrence No. 261 Map Index: 24022
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown
Main Source: BEEDY, E. ET AL 1991 (LIT)

Dates Last Seen
Element: 1983-05-28
Site: 1983-05-28

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: *SENSITIVE* Location information suppressed.

*** SENSITIVE ***
Lat/Long: /
UTM:
Mapping Precision:
Symbol Type:
Radius:

Township:
Range:
Section: Qtr
Meridian:
Elevation:

Comments
Distribution: Please contact the Calfornia Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.
Ecological: NESTING SUBSTRATE CONSISTS THISTLES; BIRDS WERE FORAGING IN THE SURROUNDING DRY, GRASSY HILLSIDES.
Threat:
General:
Owner/Manager:

Source Codes
BEE91R01

ONCORHYNCHUS TSHAWYTSCHA SPRING-RUN
SPRING-RUN CHINOOK SALMON

Element Code: AFCHA0205A

Status	NDDB Element Ranks	Other Lists
Federal: Threatened	Global: G5	CDFG Status:
State: Threatened	State: S1	

Habitat Associations

General: ADULT NOS DEPEND ON POOL DEPTH & VOLUME, AMOUNT OF COVER, & PROXIMITY TO GRAVEL. WATER TEMPS >27 C LETHAL TO ADULTS

Micro: FEDERAL LISTING REFERS TO POPS SPAWNING IN SACRAMENTO RIVER & TRIBUTARIES.

Occurrence No. 3 Map Index: 34001

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing
Main Source: DEPT. OF FISH & GAME 1990 (LIT)

Dates Last Seen
Element: 1997-09-05
Site: 1997-09-05

Quad Summary: PARADISE WEST (3912176/592C)*, HAMLIN CANYON (3912166/576B), CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: BUTTE CREEK, FROM PARROT-PHELAN DIVERSION DAM UPSTREAM TO THE CENTERVILLE DIVERSION DAM WEST OF DE SABLA, BUTTE CO.

Lat/Long: 39°47'21" / 121°39'24"
UTM: Zone-10 N4405003 E615020
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Area: 988.7 ac

Township: 22N
Range: 03E
Section: XX Qtr XX
Meridian: M
Elevation: 800 ft

Comments

Distribution: PARROT PHELAN DIVERSION DAM ("OKIE DAM"), APPROXATELY 3 MILES EAST OF THE JUNCTION OF HIGHWAY 99 AND SKYWAY TO CENTERVILLE DAM, 1 MILE WEST OF DE SABLA AND/OR 6.3 MILES NORTH OF PARADISE.

Ecological: THE STOCK PURITY IS CONSIDERED GOOD. BUTTE CREEK HAS A SELF SUSTAINING POPULATION THAT IS THOUGHT TO BE DECLINING. MEAN RUN SIZE FOR THE YEARS 1980-89 WAS 500 FISH. MAPPED SPAWNING AND/OR HOLDING AREAS.

Threat: FISH PASSAGE PROBLEMS, UNSCREENED DIVERSIONS, POOR WATER QUALITY (HIGH TEMPERATURES, AG RUNOFF, INADEQUATE FLOWS).

General: BUTTE CREEK HAS A HIGH POTENTIAL FOR RESTORATION. ADULTS ARE SAMPLED ANNUALLY IN SEPT. SPECIAL SURVEY, SAMPLING OUT-MIGRANTS NOV 1995 TO JUNE 1996. 1997 ADULT ESCAPEMENT, 635 FISH. PLANS AND IMPROVEMENTS IN 97 REPORT.

Owner/Manager: PVT

Source Codes

PRE84F02, DFG97R02, DFG90R02, MIL96R01, NEL96U01

GREAT VALLEY MIXED RIPARIAN FOREST

Element Code: CTT61420CA

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G2	
State: None	State: S2.2	

Habitat Associations
General:
Micro:

Occurrence No. 40 Map Index: 10794
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: HOOD, L. 1977 (LIT)

Dates Last Seen
Element: 1985-11-15
Site: 1985-11-15

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: BOTH SIDES HWY 99 WHERE IT CROSSES BUTTE CREEK, SE OF CHICO. "VIRGIN VALLEY RIPARIAN AREA."

Lat/Long: 39°41'43" / 121°46'26"
UTM: Zone-10 N4394442 E605120
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Area: 113.0 ac

Township: 21N
Range: 02E
Section: 08 Qtr NE
Meridian: M
Elevation: 220 ft

Comments
Distribution: MATURE FOREST EXTENDS UP BUTTE CREEK ON TAILINGS.
Ecological: ALNUS RHOMBIFOLIA, PLATANUS RACEMOSA, POPULUS FREMONTII, VITIS CALIFORNICA ALONG CREEK. QUERCUS LOBATA ALSO PRESENT.
Threat:
General: AREA USED FOR EDUCATION BY CSUC. WCB HAS APPROVED ACQUISITION OF SOME PROPERTY IN THE AREA. THIS WAS OCC #040 OF CTT61420CA.
Owner/Manager: PVT

Source Codes
HOO77R01, SNO85U01, JOK85U03, DFG76M01

GREAT VALLEY MIXED RIPARIAN FOREST (cont.)

Element Code: CTT61420CA

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G2	
State: None	State: S2.2	

Habitat Associations

General:
Micro:

Occurrence No. 42 Map Index: 10679

Occ Rank: Fair
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing
Main Source: NELSON, J. 1985 (PERS)

Dates Last Seen
Element: 1985-12-10
Site: 1989-12-28

Quad Summary: RICHARDSON SPRINGS (3912177/593D)*, CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary: Bidwell Park

Location: BIDWELL PARK: BIG CHICO CREEK FROM PALMETTO AVE UPSTREAM TO VIC OF GOLF COURSE, BIDWELL PARK, CHICO.

Lat/Long: 39°44'58" / 121°47'56"
UTM: Zone-10 N4400415 E602911
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Area: 172.9 ac

Township: 22N
Range: 01E
Section: 26 Qtr XX
Meridian: M
Elevation: 205 ft

Comments

Distribution: EXTENDS UPSTREAM OF BOUNDARY SHOWN AS NARROW BAND TO THE VICINITY OF GOLF COURSE.

Ecological: POPULUS FREMONTII, PLATANUS RACEMOSA, QUERCUS LOBATA, SAMBUCUS CERULEA, FRAXINUS, ARISTOLOCHIA CA, ACER, ALNUS ALONG CRK. VITIS COMMON. D/S PORTIONS INVADED BY VINCA, IVY, AILANTHUS. IN SOME AREAS MANY YOUNG TREES. OLD TREES 2.5-3 FT DIA.

Threat: RECREATION USE.

General: FLOOD CONTROL UPSTEAM HAS ALTERED NATURAL WATER REGIME. DEVELOPMENT NEARBY ALLOWS INVASIVE EXOTICS SUCH AS HIMALAYA BERRY AND IVY. HEAVY REC USE. THIS WAS OCC #042 OF CTT61420CA.

Owner/Manager: CITY OF CHICO

Source Codes

KEL89F07, NEL85U01, DFG76M01

GREAT VALLEY VALLEY OAK RIPARIAN FOREST

Element Code: CTT61430CA

Status
Federal: None
State: None

NDDB Element Ranks
Global: G1
State: S1.1

Other Lists

Habitat Associations
General:
Micro:

Occurrence No. 24 Map Index: 10726
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Decreasing
Main Source: NELSON, J. 1985 (PERS)

Dates Last Seen
Element: 1985-12-10
Site: 1985-12-10

Quad Summary: CHICO (3912167/577A)*, RICHARDSON SPRINGS (3912177/593D)
County Summary: BUTTE
SNA Summary: Bidwell Park

Location: BIDWELL PARK, BETWEEN VALLEMBROSA AVE AND CHICO CANYON ROAD, HWY 99 TO 0.75 MILE SSE OF "HOOKER OAK."

Lat/Long: 39°44'43" / 121°48'41"
UTM: Zone-10 N4399947 E601833
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Area: 126.4 ac

Township: 22N
Range: 01E
Section: 24 Qtr S
Meridian: M
Elevation: 235 ft

Comments
Distribution: BOUNDARY FROM DFG 1976 MAPS.
Ecological: REMNANT VALLEY OAK/SYCAMORE ASSOCIATION ON TERRACES. SOME AREAS RUDERAL W/ CONSIDERABLE VINCA, OTHERS REMAIN NATURAL. UP TO 90 % CANOPY COVER IN PARTS.
Threat:
General: THIS WAS OCC #024 OF CTT63410CA.
Owner/Manager: CITY OF CHICO-PARKS & REC

Source Codes
NEL85U01, SNO85U01, DFG76M01

LEPIDURUS PACKARDI
VERNAL POOL TADPOLE SHRIMP

Element Code: ICBRA10010

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G2G3	CDFG Status:
State: None	State: S2S3	

Habitat Associations

General: INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro: POOLS COMMONLY FOUND IN GRASS BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED & HIGHLY TURBID.

Occurrence No. 78 Map Index: 33662

Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: SUGNET & ASSOC. 1993 (PERS)

Dates Last Seen
Element: 1993-01-11
Site: 1993-01-11

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: EAST OF HWY 99 AND SOUTH OF HWY 32. VICINITY OF LITTLE CHICO CREEK. EAST OF CHICO.

Lat/Long: 39°44'01" / 121°47'45"
UTM: Zone-10 N4398688 E603201
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 3/5 mile

Township: 22N
Range: 02E
Section: 30 Qtr XX
Meridian: M
Elevation: 225 ft

Comments

Distribution: VERNAL POOLS LOCATED SOMEWHERE IN SECTION 30. 49 FEATURES WERE INSPECTED. NONE CONTAINED BRANCHINECTA LYNCHI AND 3 CONTAINED LEPIDURUS PACKARDI.

Ecological: NATURAL VERNAL POOLS.

Threat:

General: SUGNET RECORD NUMBER 193.

Owner/Manager: UNKNOWN

Source Codes

SUG93U01

DESMOCERUS CALIFORNICUS DIMORPHUS
VALLEY ELDERBERRY LONGHORN BEETLE

Element Code: IICOL48011

Status
Federal: Threatened
State: None

NDDB Element Ranks
Global: G3T2
State: S2

Other Lists
CDFG Status:

Habitat Associations
General: OCCURS ONLY IN THE CENTRAL VALLEY OF CALIFORNIA, IN ASSOCIATION WITH BLUE ELDERBERRY (SAMBUCUS MEXICANA).
Micro: PREFERS TO LAY EGGS IN ELDERBERRRIES 2-8 INCHES IN DIAMETER; SOME PREFERENCE SHOWN FOR "STRESSED" ELDERBERRIES.

Occurrence No. 183 Map Index: 41880
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: NELSON, J.1995 (OBS)

Dates Last Seen
Element: 1995-12-XX
Site: 1995-12-XX

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: DURHAM MUTUAL CANAL, 0.25 MILE DOWNSTREAM FROM FIRST DIVERSION ON BUTTE CREEK ABOVE HWY 99, ~4 MILES SW OF CHICO.

Lat/Long: 39°41'56" / 121°46'26"
UTM: Zone-10 N4394863 E605104
Mapping Precision: NON-SPECIFIC
Symbol Type: POLYGON
Area: 12.6 ac

Township: 21N
Range: 02E
Section: 05 Qtr SE
Meridian: M
Elevation: 225 ft

Comments
Distribution: ALONG DURHAM MUTUAL WATER COMPANY CANAL (IN RIGHT OF WAY), ON PRIVATE PROPERTY, ADJACENT CDFG PROPERTY.
Ecological:
Threat: DEVELOPMENT
General: EXIT HOLES OBSERVED IN ELDERBERRY BUSHES
Owner/Manager: PVT

Source Codes
NEL95F01

LIMNANTHES FLOCCOSA SSP CALIFORNICA
BUTTE COUNTY MEADOWFOAM

Element Code: PDLIM02042

Status
Federal: Endangered
State: Endangered

NDDB Element Ranks
Global: G4T1
State: S1.1

Other Lists
CNPS List: 1B
R-E-D Code: 3-3-3

Habitat Associations
General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND. ENDEMIC TO BUTTE COUNTY.
Micro: WET OR FLOWING DRAINAGES & DEPRESSIONS; OFTEN NOT IN DISCRETE VERNAL POOLS; SOILS ARE USU REDDING CLAY W/ROCKS. 50-90M.

Occurrence No. 7 Map Index: 10755
Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: DOLE, J. 1988 (PERS)

Dates Last Seen
Element: 1992-04-01
Site: 1992-04-01

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary: Humboldt Road West

Location: ASSEMBLY OF GOD/N ENLOE/BRUCE RD/STILSON CYN POPS. E OF CHICO, AT INTERSECTION OF BRUCE, HUMBOLDT, AND STILSON CYN RDS.

Lat/Long: 39°44'10" / 121°46'58"
UTM: Zone-10 N4398962 E604308
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Area: 85.3 ac

Township: 22N
Range: 02E
Section: 30 Qtr NE
Meridian: M
Elevation: 250 ft

Comments
Distribution: PLANTS ON EAST AND WEST SIDES OF BRUCE RD. ALSO IN NW 1/4 OF SECTION 29 AND SE 1/4 OF SECTION 19. N SIDE OF LITTLE CHICO CREEK. BOTH SIDES OF BRUCE ROAD. THREE JOKERST SITES HERE: HUMBOLDT, N ENLOE AND BRUCE-STILSON.
Ecological: IN ROCKY VERNAL STREAMS, WITH LAYIA FREMONTII, ORTHOCARPUS ERIANTHUS, LASTHENIA CHRYSOSTOMA, BLENNOSPERMA NANUM, NAVARRETIA LEUCOCEPHALA, ACHYRACHAENA MOLLIS.
Threat: DEVELOPMENT, ROAD CONSTRUCTION, AND GRAZING ARE THREATS.
General: 4 MAIN SUBPOPS: N OF HWY 32, HUNDREDS OF PLANTS (1991), FAIR SITE QUALITY. BETW. HWY 32 & HUMBOLDT RD., POP. MOSTLY DESTROYED BY CONSTRUCTION. S OF HUMBOLDT RD. 46,000 PLANTS (1988). E OF BRUCE RD., 23,000 PLANTS (1991).
Owner/Manager: PVT

Source Codes
DAN88U01, KEL92F04, KEL92F06, DOL88R01, HUN86S01, DOL88F03, DOL88F02, DOL91M01, JAN91F01, DOL91U02, KRO79F01, KES85U01, JOK87U01, JOK85U01

LIMNANTHES FLOCCOSA SSP CALIFORNICA (cont.)
BUTTE COUNTY MEADOWFOAM

Element Code: PDLIM02042

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G4T1	CNPS List: 1B
State: Endangered	State: S1.1	R-E-D Code: 3-3-3

Habitat Associations

General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND. ENDEMIC TO BUTTE COUNTY.

Micro: WET OR FLOWING DRAINAGES & DEPRESSIONS; OFTEN NOT IN DISCRETE VERNAL POOLS; SOILS ARE USU REDDING CLAY W/ROCKS. 50-90M.

Occurrence No. 20 Map Index: 10763

Occ Rank: None
Origin: Natural/Native occurrence
Presence: Extirpated
Trend: Unknown
Main Source: JOKERST, J. 1985 (PERS)

Dates Last Seen
Element: 1984-XX-XX
Site: 1985-XX-XX

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: E OF CHICO ON PARADISE SKYWAY 0.10 MI W OF BRUCE RD.

Lat/Long: 39°42'54" / 121°47'14"
UTM: Zone-10 N4396619 E603956
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1/5 mile

Township: 22N
Range: 02E
Section: 31 Qtr SE
Meridian: M
Elevation: 230 ft

Comments

Distribution:
Ecological:
Threat:
General: SMALL POPULATION OF LESS THAN 100 PLANTS IN 1984. SITE DESTROYED IN 1985; NOW IS A SHOPPING CENTER.
Owner/Manager: PVT

Source Codes

PRO82U01, KES85U01, JOK85U01, JOK85U02

LIMNANTHES FLOCCOSA SSP CALIFORNICA (cont.)
BUTTE COUNTY MEADOWFOAM

Element Code: PDLIM02042

Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G4T1	CNPS List: 1B
State: Endangered	State: S1.1	R-E-D Code: 3-3-3

Habitat Associations

General: VERNAL POOLS, VALLEY AND FOOTHILL GRASSLAND. ENDEMIC TO BUTTE COUNTY.

Micro: WET OR FLOWING DRAINAGES & DEPRESSIONS; OFTEN NOT IN DISCRETE VERNAL POOLS; SOILS ARE USU REDDING CLAY W/ROCKS. 50-90M.

Occurrence No. 34 Map Index: 20283

Occ Rank: Good
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: DOLE, J. 1988 (PERS)

Dates Last Seen
Element: 1992-04-01
Site: 1992-04-01

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary: Little Chico Creek South

Location: INTERSECTION OF DOE MILL AND BRUCE ROADS (AT NW CORNER OF SECTION 32). (BRUCE RD. NOW EXTENDS SOUTH FROM THIS CORNER).

Lat/Long: 39°43'30" / 121°47'00"
UTM: Zone-10 N4397740 E604267
Mapping Precision: SPECIFIC
Symbol Type: POLYGON
Area: 91.2 ac

Township: 22N
Range: 02E
Section: 32 Qtr NW
Meridian: M
Elevation: 265 ft

Comments

Distribution: MAPPED AS 3 POLYGONS. GREATEST CONCENTRATION OF PLANTS IS SOUTHEAST OF DOE MILL/BRUCE RD. INTERSECTION. PLANTS ALSO OCCUR IN SW 1/4 OF SECTION 29, NE 1/4 OF SECTION 31, & SW 1/4 OF SECTION 32. DOE MILL AND SCHMIDBAUER SITES.

Ecological: ROCKY VERNAL STREAM IN GRASSLAND DOMINATED BY NAVARRETIA LEUCOCEPHALA, BLENNOSPERMA NANUM, LASTHENIA CHRYSOSTOMA, LAYIA FREMONTII, LIMNANTHES DOUGLASII ROSEA, L. ALBA ALBA. HABITAT WEST OF BRUCE RD. IS DRIER THAN THAT EAST OF RD.

Threat: CATTLE GRAZING. DRAINAGE CHANGES W OF BRUCE RD DUE TO CONSTRUCTION OF THE RD. ADJACENT TO RECENT HOUSING DEVELOPMENT.

General: 9000 PLANTS SEEN IN 1988, UNKNOWN HOW MANY SEEN IN 1992. THE ROAD RUNNING NORTH AND SOUTH THROUGH THE CENTER OF SECTION 32 USED TO BE BRUCE RD.; IT'S NOW POTTER DR. LOTS OF SUITABLE HABITAT IN THIS AREA.

Owner/Manager: PVT

Source Codes

JOK89R01, KEL92F03, DOL88F04, DOL88F05, KEL92F05, DOL88R01

SIDALCEA ROBUSTA
BUTTE COUNTY CHECKERBLOOM

Element Code: PDMAL110P0

Status	NDDB Element Ranks	Other Lists
Federal: Species of Concern	Global: G2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 2-2-3

Habitat Associations
General: CHAPARRAL, CISMONTANE WOODLAND. ENDEMIC TO BUTTE COUNTY.
Micro: SMALL DRAWS AND ROCKY CREVICES. 85-335M.

Occurrence No. 15 Map Index: 10790
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: SCHLISING, R. 1982 (OBS)

Dates Last Seen
Element: 1981-XX-XX
Site: 1981-XX-XX

Quad Summary: CHICO (3912167/577A)*, RICHARDSON SPRINGS (3912177/593D)
County Summary: BUTTE
SNA Summary:

Location: CENTER OF N 1/2 OF S29, T22N, R02E. (NEAR JCT STILSON CYN RD HUMBOLDT RD, E OF CHICO).

Lat/Long: 39°44'11" / 121°46'37"
UTM: Zone-10 N4399004 E604804
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 22N
Range: 02E
Section: 29 Qtr N
Meridian: M
Elevation: 305 ft

Comments
Distribution:
Ecological:
Threat:
General: NONE.
Owner/Manager: PVT

Source Codes
SCH82U02

SIDALCEA ROBUSTA (cont.)
BUTTE COUNTY CHECKERBLOOM

Element Code: PDMAL110P0

Status	NDDB Element Ranks	Other Lists
Federal: Species of Concern	Global: G2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 2-2-3

Habitat Associations
General: CHAPARRAL, CISMONTANE WOODLAND. ENDEMIC TO BUTTE COUNTY.
Micro: SMALL DRAWS AND ROCKY CREVICES. 85-335M.

Occurrence No. 23 Map Index: 10869
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: U.S. FOREST SERVICE 1982 (PERS)

Dates Last Seen
Element: XXXX-XX-XX
Site: XXXX-XX-XX

Quad Summary: HAMLIN CANYON (3912166/576B)*, CHICO (3912167/577A), PARADISE WEST (3912176/592C), RICHARDSON SPRINGS (3912177/593D)
County Summary: BUTTE
SNA Summary:

Location: LITTLE CHICO CR, APPROX 1/4 MI NE OF END OF STISON RD.

Lat/Long: 39°44'40" / 121°44'10"
UTM: Zone-10 N4399947 E608290
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 22N
Range: 02E
Section: 22 Qtr SE
Meridian: M
Elevation: 400 ft

Comments
Distribution:
Ecological:
Threat:
General: UNKNOWN WHEN SPECIES SEEN. T-R-S IS ONLY LOCATION INFORMATION GIVEN BY USFS.
Owner/Manager: PVT

Source Codes
USF82U06

FRITILLARIA EASTWOODIAE
BUTTE COUNTY FRITILLARY

Element Code: PMLIL0V060

Status
Federal: Species of Concern
State: None

NDDB Element Ranks
Global: G3Q
State: S3.2

Other Lists
CNPS List: 3
R-E-D Code: ?-2-3

Habitat Associations
General: CHAPARRAL, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST.
Micro: USUALLY ON DRY SLOPES BUT ALSO FOUND IN WET PLACES; SOILS CAN BE SERPENTINE, RED CLAY, OR SANDY LOAM. 40-1500M.

Occurrence No. 48 Map Index: 25716
Occ Rank: None
Origin: Natural/Native occurrence
Presence: Possibly Extirpated
Trend: Unknown
Main Source: MORRISON, J. SN CAS #1941481 (HERB)

Dates Last Seen
Element: 1935-05-XX
Site: 1935-05-XX

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: NEAR DURHAM (SOUTH OF CHICO).

Lat/Long: 39°38'46" / 121°47'57"
UTM: Zone-10 N4388956 E603042
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 21N
Range: 02E
Section: 24 Qtr XX
Meridian: M
Elevation: 160 ft

Comments
Distribution:
Ecological:
Threat: IT IS DOUBTFUL THAT THE PLANT STILL EXISTS HERE, THE AREA IS INTENSIVELY CULTIVATED.
General: TYPE LOCALITY. COLLECTED TWICE IN THIS VICINITY; THE ORIGINAL COLLECTION BY MORRISON IN 1932 AND AGAIN IN 1935 BY F. BROWN (SN CAS #222675).
Owner/Manager: UNKNOWN

Source Codes
BRO35S02, MAC78A01, MOR32S02

FRITILLARIA PLURIFLORA
ADOBE-LILY

Element Code: PMLIL0V0F0

Status
Federal: Species of Concern
State: None

NDDB Element Ranks
Global: G2
State: S2.2

Other Lists
CNPS List: 1B
R-E-D Code: 2-2-3

Habitat Associations
General: CHAPARRAL, CISMONTANE WOODLAND, FOOTHILL GRASSLAND.
Micro: USUALLY ON CLAY SOILS; SOMETIMES SERPENTINE. 55-820M.

Occurrence No. 33 Map Index: 25716
Occ Rank: Unknown
Origin: Natural/Native occurrence
Presence: Presumed Extant
Trend: Unknown
Main Source: BROWN, F. SN CAS (HERB)

Dates Last Seen
Element: 1935-03-XX
Site: 1935-03-XX

Quad Summary: CHICO (3912167/577A)
County Summary: BUTTE
SNA Summary:

Location: NEAR DURHAM.

Lat/Long: 39°38'46" / 121°47'57"
UTM: Zone-10 N4388956 E603042
Mapping Precision: NON-SPECIFIC
Symbol Type: POINT
Radius: 1 mile

Township: 21N
Range: 02E
Section: 24 Qtr XX
Meridian: M
Elevation: 160 ft

Comments
Distribution:
Ecological:
Threat:
General: SEEN IN 1935. ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1935 COLLECTION BY BROWN; NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Source Codes
BRO35S01

APPENDIX E - SPECIAL STATUS SPECIES TABLES

Table 4.4-2: Listed and Proposed Species Potentially Occurring in the Project Area.

Common Name	Scientific Name	Status	Species General Habitat Description	Rationale for Potential Occurrence
Plants				
adobe-lily	*Fritillaria pluriflora*	FSC;--;1B	Chaparral, cismontane woodland, foothill grassland; usually on clay soils; sometimes serpentine.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Ahart's (dwarf) rush	*Juncus leiospermus var. ahartii*	FSC;--;1B	Vernal pools; restricted to the edges of vernal pools.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Ahart's paronychia	*Paronychia ahartii*	FSC;--;1B	Valley and foothill grassland, vernal pools, cismontane woodland; stony, nearly barren clay of swales and higher ground around vernal pools.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
big-scale (=California) balsamroot	*Balsamorhiza macrolepis var. macrolepis*	SLC;--;1B	Valley and foothill grassland, cismontane woodland; sometimes on serpentine.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Brandegee's clarkia	*Clarkia biloba ssp. brandegeae*	SLC;--;1B	Chaparral, cismontane woodland; often in roadcuts.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special

				status plant species was found (Hanover 2003a).
brittlescale	*Atriplex depressa*	FSC;–;1B	Chenopod scrub, meadows, playas, valley and foothill grassland, vernal pools; usually in alkali scalds or alkaline clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
brownish beaked-rush	*Rhynchospora capitellata*	–;–;2	Lower montane coniferous forest, meadows and seeps, marshes and swamps, upper montane coniferous forest; mesic sites.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Butte County calycadenia	*Calycadenia oppositifolia*	SLC;–;1B	Chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; dry, often stoney plains and rock outcrops, on serpentine or volcanic soils (endemic to Butte County).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Butte County catchfly (=long-stiped campion)	*Silene occidentalis ssp. longistipitata*	FSC;–;1B	Chaparral, lower montane coniferous forest, upper montane coniferous forest.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Butte County checkerbloom	*Sidalcea robusta*	FSC;–;1B	Chaparral, cismontane woodland; small draws and rocky crevices (endemic to Butte County).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Butte County fritillary	*Fritillaria eastwoodiae*	FSC;–;3	Chaparral, cismontane woodland, lower montane coniferous forest;	Unlikely. A survey for special status plant species was conducted at the

			usually on dry slopes but also found in wet places; soils can be serpentine, red clay, or sandy loam.	project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Butte County golden clover	*Trifolium jokerstii*	SLC;--;1B	Valley and foothill grassland, vernal pools; known only from 2 sites in Butte County in the vicinity of Table Mountain in grassland and swales near oak woodland (endemic to Butte County).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Butte County (Shippee) meadowfoam	*Limnanthes floccosa ssp. californica*	FE;CE;1B	Vernal pools, valley and foothill grassland; wet or flowing drainages and depressions; often not in discrete vernal pools; soils are usually Redding Clay with rocks (endemic to Butte County).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Butte County morning-glory	*Calystegia atriplicifolia ssp. buttensis*	FSC;--;1B	Lower montane coniferous forest; dry, mostly open slopes.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
California beaked-rush	*Rhynchospora californica*	FSC;--;1B	Bogs and fens, marshes and swamps, lower montane coniferous forest, meadows and seeps; freshwater seeps and open marshy areas.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Cantelow's lewisia	*Lewisia cantelovii*	FSC;--;1B	Broadleafed upland forest, lower montane coniferous forest, cismontane woodland, chaparral; mesic rock outcrops and wet cliffs, usually in moss or clubmoss; on granitics or sometimes on	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found

			serpentine.	(Hanover 2003a).
closed-lip (closed-throated) beardtongue	*Penstemon personatus*	FSC;--;1B	Lower montane coniferous forest, upper montane coniferous forest, chaparral; usually on north facing slopes in metavolcanic soils (known only from Butte and Plumas Counties).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
clustered lady's-slipper	*Cypripedium fasciculatum*	FSC;--;4	North coast coniferous forest, lower montane coniferous forest; in serpentine seeps and moist streambanks.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Columbian watermeal	*Wolffia brasiliensis*	--;--;2	Shallow freshwater marshes.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
cut-leaved ragwort	*Senecio (=Packera) eurycephalus var. lewisrosei*	SLC;--;1B	Cismontane woodland, lower montane coniferous forest, chaparral; steep slopes and in canyons in serpentine soil, often along or near roads.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Enterprise clarkia	*Clarkia mosquinii ssp. xerophila*	FSC;--;1B	Cismontane woodland, lower montane coniferous forest; usually on steep, rocky cutbanks and slopes (endemic to Butte County).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Feather River stonecrop	*Sedum albomarginatum*	FSC;--;1B	Chaparral, lower montane coniferous forest; in crevices and on ledges of serpentine outcrops	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist

			and slopes (endemic to Butte and Plumas Counties).	in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Ferris's milk-vetch	*Astragalus tener var. ferrisiae*	FSC;--;1B	Meadows, valley and foothill grassland; subalkaline flats on overflow land in the Central Valley; usually seen in dry, adobe soil (only a few extant occurrences remain, formerly more widespread in the valley).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
four-angled spikerush	*Eleocharis quadrangulata*	--;--;2	Marshes and swamps; freshwater marshes, lake and pond margins.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
fox sedge	*Carex vulpinoidea*	--;--;2	Marshes and swamps, riparian woodland; wet places.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Greene's tuctoria	*Tuctoria greenei*	FE;CR;1B	Vernal pools, valley and foothill grassland; dry bottoms of vernal pools in open grasslands.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
hairy Orcutt grass	*Orcuttia pilosa*	FE;CE;1B	Vernal pools; endemic to the Sacramento Valley.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).

Hall's rupertia (=Hall's California tea)	*Rupertia hallii*	SLC;--;1B	Cismontane woodland, lower montane coniferous forest; on disturbed soils of roadsides and logged forests (known only from Butte and Tehama Counties).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
heartscale	*Atriplex cordulata*	FSC;--;1B	Chenopod scrub, valley and foothill grassland, meadows; alkaline flats and scalds in the Central Valley, sandy soils.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Henderson's bent grass	*Agrostis hendersonii*	FSC;--;3	Valley and foothill grassland, vernal pools; moist places in grassland or vernal pool habitat (little information exists about this species).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Hoover's spurge	*Chamaesyce hooveri*	FT;--;1B	Vernal pools, valley and foothill grassland; vernal pools on volcanic mudflow or clay substrate.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Jepson's onion	*Allium jepsonii*	FSC;--;1B	Cismontane woodland, lower montane coniferous forest; on serpentine soils in Sierra foothills, volcanic soil on Table Mountain on slopes and flats; usually in an open area (known only from Butte and Tuolumne Counties).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
lesser saltscale	*Atriplex minuscula*	FSC;--;1B	Chenopod scrub, playas, valley and foothill grassland; in alkali sink and grassland in sandy, alkaline soils (historically in the	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the

			San Joaquin Valley).	botanist report, no evidence of special status plant species was found (Hanover 2003a).
little mousetail	*Myosurus minimus ssp. apus*	FSC;--;3	Vernal pools; alkaline soils (subspecies has taxonomic problems and could be a hybrid; distinguishing between this and *Myosurus sessilis* is difficult).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Mosquin's clarkia	*Clarkia mosquinii ssp. mosquinii*	FSC;--;1B	Cismontane woodland, lower montane coniferous forest; usually on steep, rocky cutbanks and slopes (endemic to Butte County).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
pink creamsacs	*Castilleja rubicundula ssp. rubicundula*	SLC;--;1B	Chaparral, meadows and seeps, valley and foothill grassland; openings in chaparral or grasslands; on serpentine.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Quincy lupine	*Lupinus dalesiae*	FSC;--;1B	Lower montane coniferous forest, upper montane coniferous forest; dry,open, or shaded slopes, summits, and trails; plants often found in disturbed soils.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
recurved larkspur	*Delphinium recurvatum*	--;--;1B	Chenopod scrub, valley and foothill grassland, cismontane woodland; on alkaline soils; often in valley saltbush or valley chenopod scrub (many historical and degraded sites).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Red Bluff dwarf rush	*Juncus leiospermus var.*	FSC;--;1B	Chaparral, valley and foothill	Unlikely. A survey for special status

	leiospermus		grassland, cismontane woodlands, vernal pools; vernally mesic sites; sometimes on edges of vernal pools.	plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
rose-mallow	*Hibiscus lasiocarpus*	–;–;2	Freshwater marshes and swamps; moist, freshwater-soaked river banks and low peat islands in sloughs (in California, known from the Delta watershed).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
round-leaved filaree	*Erodium macrophyllum*	–;–;2	Cismontane woodland, valley and foothill grassland; clay soils.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
scalloped moonwort	*Botrychium crenulatum*	FSC;–;2	Bogs and fens, meadows, lower montane coniferous forest, freshwater marsh; moist meadows, near creeks.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
slender Orcutt grass	*Orcuttia tenuis*	FT;CE;1B	Vernal pools.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
subtle orache	*Atriplex subtilis*	SLC;–;1B	Valley and foothill grassland (little information in available for this species).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special

				status plant species was found (Hanover 2003a).
upswept moonwort	*Botrychium ascendens*	FSC;--;2	Lower montane coniferous forest; grassy fields, coniferous woods near springs and creeks.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
valley sagittaria (=Sanford's arrowhead)	*Sagittaria sanfordii*	FSC;--;1B	Marshes and swamps; in standing or slow-moving freshwater ponds, marshes, and ditches.	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
veiny monardella	*Monardella douglasii ssp. venosa*	FSC;--;1B	Valley and foothill grassland, cismontane woodland; in heavy clay; mostly with grassland associates (rediscovered in 1992).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
white-stemmed clarkia	*Clarkia gracilis ssp. albicaulis*	SLC;--;1B	Chaparral, cismontane woodland; dry, grassy openings in chaparral or foothill woodland; sometimes on serpentine (endemic to Butte County).	Unlikely. A survey for special status plant species was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
Invertebrates				
Antioch Dunes anthicid beetle	*Anthicus antiochensis*	FSC;--;--	Known only from the Antioch Dunes.	Unlikely. The project area is located outside of the known range for this species.
California linderiella fairy shrimp	*Linderiella occidentalis*	FSC;--;--	Seasonal pools in unplowed grasslands with alluvial soils underlain by hardpan or in sandstone depressions; water in the pools has very low alkalinity,	Unlikely. Field observations in October 2002 and April 2003 did not identify vernal pools at the project location. In addition, most of the project site has flat topography and

			conductivity, and total dissolved solids.	appears to be disked on a regular basis (Hanover 2002).
Conservancy fairy shrimp	*Branchinecta conservatio*	FE;–;–	Found in large, turbid pools; inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/spring rains, last until June (endemic to the grasslands of the northern two-thirds of the Central Valley).	Unlikely. Field observations in October 2002 and April 2003 did not identify vernal pools at the project location. In addition, most of the project site has flat topography and appears to be disked on a regular basis (Hanover 2002).
Sacramento anthicid beetle	*Anthicus sacramento*	FSC;–;–	Inhabit sand slipfaces among bamboo and willow (restricted to sand dune areas of the Sacramento-San Joaquin Delta).	Unlikely. The project area is located outside of the known range for this species.
Sacramento Valley tiger beetle	*Cicindela hirticollis abrupta*	FSC;–;–	Open sandy areas; on sandy beaches; on open paths or lanes; larvae construct vertical tunnels in the ground.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT;–;–	Prefers to lay eggs in elderberry branches 2 to 8 inches in diameter; some preference shown for stressed elderberries (occurs only in the Central Valley of California in association with blue elderberry [*Sambucus mexicana*]).	Unlikely. A survey for special status plant species, including blue elderberry (this species host plant), was conducted at the project location by a qualified botanist in April 2003. According to the botanist report, no evidence of special status plant species was found (Hanover 2003a).
vernal pool fairy shrimp	*Branchinecta lynchi*	FT;–;–	In astatic rain-filled pools; inhabits small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools (endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains).	Unlikely. Field observations in October 2002 and April 2003 did not identify vernal pools at the project location. In addition, most of the project site has flat topography and appears to be disked on a regular basis (Hanover 2002).
vernal pool tadpole shrimp	*Lepidurus packardi*	FE;–;X	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water; pools commonly found in grass bottomed swales of unplowed grasslands; some pools	Unlikely. Field observations in October 2002 and April 2003 did not identify vernal pools at the project location. In addition, most of the project site has flat topography and appears to be disked on a regular basis

			are mud-bottomed and highly turbid.	(Hanover 2002).
Fish				
Central Valley fall/late fall-run chinook salmon	*Oncorhynchus tshawytscha*	FC;CSC;X	Populations spawning in the Sacramento and San Joaquin Rivers and their tributaries.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could support special status fish species.
Central Valley steelhead	*Oncorhynchus mykiss irideus*	FT;--;--	Populations in the Sacramento and San Joaquin Rivers and their tributaries.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could support special status fish species.
delta smelt	*Hypomesus transpacificus*	FT;CT;--	Sacramento-San Joaquin Delta; seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay; seldom found at salinities greater than 10 parts per trillion; most often at salinities less than 2 parts per trillion.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could support special status fish species.
green sturgeon	*Acipenser medirostris*	FC;CSC;--	Spawn in the Sacramento River and the Klamath River; spawn at temperatures between 8 to 14 degrees Celsius; preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could support special status fish species.
longfin smelt	*Spirinchus thaleichthys*	FSC;CSC;--	Euryhaline, nektonic, and anadromous; found in open waters of estuaries, mostly in the middle or bottom of water column; prefers salinities of 15 to 30 parts per trillion, but can be found in completely freshwater to almost pure seawater.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could support special status fish species.
river lamprey	*Lampetra ayresi*	FSC;CSC;--	Lower Sacramento River, San Joaquin river and Russian River; may occur in coastal streams north of San Francisco Bay; adults need	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could

			clean, gravelly riffles, ammocoetes need sandy backwaters or stream edges, good water quality and temperatures less than 25 degrees Celsius.	support special status fish species.
Sacramento splittail	*Pogonichthys macrolepidotus*	FSC;CSC;--	Endemic to the lakes and rivers of the Central Valley, but now confined to the Delta, Suisun Bay, and associated marshes; slow moving river sections, dead end sloughs; requires flooded vegetation for spawning and foraging for young.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could support special status fish species.
spring-run chinook salmon	*Oncorhynchus tshawytscha*	FT;CT;--	Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel; water temperatures greater than 27 degrees Celsius lethal to adults; federal listing refers to populations spawning in Sacramento River and tributaries.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could support special status fish species.
winter-run chinook salmon	*Oncorhynchus tshawytscha*	FE;CE;X	Sacramento River below Keswick Dam; spawns in the Sacramento River but not in tributary streams; requires clean, cold water over gravel beds with water temperatures between 6 and 14 degrees Celsius for spawning.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002). No wetlands were reported that could support special status fish species.
Amphibians/Reptiles				
California red-legged frog	*Rana aurora draytonii*	FT;CSC;PX	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation; requires 11 to 20 weeks of permanent water for larval development; must have access to estivation habitat.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
California tiger salamander	*Ambystoma californiense*	FT;CSC;PX	Species now listed as threatened statewide; populations in Santa	Unlikely. A biological resources survey of the project area completed by

			Barbara and Sonoma Counties formerly listed as endangered; need underground refuges, especially ground squirrel burrows and vernal pools or other seasonal water sources for breeding.	Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
cascades frog	*Rana cascadae*	FSC;CSC;--	Montane aquatic habitats such as mountain lakes, small streams, and ponds in meadows; open coniferous forests; standing water required for reproduction; hibernates in mud on the bottom of lakes and ponds during the winter.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
coast (California) horned lizard	*Phrynosoma coronatum (frontale)*	FSC;CSC;--	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes; open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
foothill yellow-legged frog	*Rana boylii*	FSC;CSC;--	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats; needs at least some cobble-sized substrate for egg-laying; needs at least 15 weeks to attain metamorphosis.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
giant garter snake	*Thamnophis gigas*	FT;CT;--	Prefers freshwater marsh and low gradient streams; has adapted to drainage canals and irrigation ditches; this is the most aquatic of the garter snakes in California.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
mountain yellow-legged frog	*Rana muscosa*	FE;CSC;--	Federal listing refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains only; always encountered within a few feet of water; tadpoles may require up to	Unlikely. The project area is located outside of the known range for this species.

			2 years to complete their aquatic development.	
northwestern pond turtle	*Emys (=Clemmys) marmorata marmorata*	FSC;CSC;--	Associated with permanent or nearly permanent water in a wide variety of habitats; requires basking sites; nests sites may be found up to 0.5 kilometers from water.	Unlikely. A wetland delineation of the project area reported only seasonal wetlands (Hanover 2002).
San Joaquin coachwhip (=whipsnake)	*Masticophis flagellum ruddocki*	FSC;CSC;--	Open, dry habitats with little or no tree cover; found in valley grassland and saltbush scrub in the San Joaquin Valley; needs mammal burrows for refuge and oviposition sites.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
western spadefoot toad	*Spea hammondii*	FSC;CSC;--	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands; vernal pools are essential for breeding and egg-laying.	Unlikely. Field observations in October 2002 and April 2003 did not identify vernal pools at the project location. In addition, most of the project site has flat topography and appears to be disked on a regular basis (Hanover 2002).
Birds				
Aleutian Canada goose	*Branta canadensis leucopareia*	FD;--;--	(Wintering) Winters on lakes and inland prairies; forages on natural pasture or that cultivated to grain; loafs on lakes, reservoirs, ponds.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
American bittern	*Botaurus lentiginosus*	FSC;--;--	Freshwater and slightly brackish marshes; also in coastal saltmarshes; dense reed beds.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
American dipper	*Cinclus mexicanus*	SLC;--;--	Rushing mountain streams and high-elevation lakes.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
American peregrine falcon	*Falco peregrinus anatum*	FD;CE;--	(Nesting) Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also,	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.

			human-made structures; nest consists of a scrape on a depression or ledge in an open site.	
bald eagle	*Haliaeetus leucocephalus*	FT;CE;--	(Nesting and Wintering) Ocean shore, lake margins, and rivers for both nesting and wintering; most nests within one mile of water; nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine; roosts communally in winter.	Unlikely. Habitat at and within the vicinity of the project location consists of valley grassland and riparian areas, which are not known to support the nesting or wintering behaviors related to this species.
bank swallow	*Riparia riparia*	--;CT;--	(Nesting) Colonial nester; nests primarily in riparian and other lowland habitats west of the desert; requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
black swift	*Cypseloides niger*	FSC;CSC;--	(Nesting) Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above surf; forages widely (coastal belt of Santa Cruz and Monterey Counties; central and southern Sierra Nevada; San Bernardino and San Jacinto Mountains).	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which provide a low suitability to support this species.
California spotted owl	*Strix occidentalis occidentalis*	FSC;CSC;--	Mixed conifer forest, often with an understory of black oaks and deciduous hardwoods; canopy closure is greater than forty percent; most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which provide a low suitability to support this species.
California thrasher	*Toxostoma redivivum*	FSC;--;--	Chaparral.	**Possible.** Habitat at the project

				location provides suitable foraging habitat for this species.
ferruginous hawk	*Buteo regalis*	FSC;CSC;--	(Wintering) Open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats; mostly eats lagomorphs, ground squirrels, and mice; population trends may follow lagomorph population cycles.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
flammulated owl	*Otus flammeolus*	FSC;--;--	Pine and oak forests; especially Ponderosa pine.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
great blue heron	*Ardea herodias*	--;--;--	(Rookery) Colonial nester in tall trees, cliffsides, and sequestered spots on marshes; rookery sites in close proximity to foraging areas; marshes, lake margins, tide-flats, rivers and streams, wet meadows.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
great egret	*Ardea alba*	--;--;--	(Rookery) Colonial nester in large trees; rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
greater sandhill crane	*Grus canadensis tabida*	--;CT;--	(Nesting and wintering) Nests in wetland habitats in northeastern California; winters in the Central Valley; prefer grain fields within 4 miles of a shallow body of water used as a communal roost site; irrigated pasture used as loaf sites.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
Lawrence's goldfinch	*Carduelis lawrencei*	FSC;--;--	(Nesting) Nests in open oak or other arid woodland and chaparral, near water; nearby herbaceous habitats used for feeding; closely associated with oaks.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
Lewis' woodpecker	*Melanerpes lewis*	FSC;--;--	Dry open woods, orchards,	**Possible.** Habitat at the project

			farmlands, foothills.	location provides suitable foraging habitat for this species.
loggerhead shrike	*Lanius ludovicianus*	FSC;CSC;--	(Nesting) Broken woodlands, savannah, pinyon-junier, Joshua tree, and riparian woodlands, desert oases, scrub and washes; prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
long-billed curlew	*Numenius americanus*	FSC;CSC;--	(Nesting) Breeds in upland shortgrass prairies and wet meadows in northeastern California; habitats on gravelly soils and gently rolling terrain are favored over others.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
northern goshawk	*Accipiter gentilis*	FSC;CSC;--	(Nesting) Within and in vicinity of coniferous forest; uses old nests, and maintains alternate sites; usually nests on north slopes, near water; red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which provide a low suitability to support this species.
Nuttall's woodpecker	*Picoides nuttallii*	SLC;--;--	Shrublands, streamsides, and oak woodlands.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
oak (plain) titmouse	*Baeolophus (Parus) inornatus*	SLC;--;--	Broadleafed woodlands; sparse pinyon-juniper and oak woodlands.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
olive-sided flycatcher	*Contopus cooperi*	FSC;--;--	(Nesting) Nesting habitats are mixed conifer, montane hardwood-conifer, Douglas fir, redwood, red fir, and lodgepole pine; most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes, or other terrain.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
osprey	*Pandion haliaetus*	--;CSC;--	(Nesting) Ocean shore, bays, fresh-water lakes, and larger	Unlikely. Habitat at the project location consists of valley grassland

			streams; large nests built in tree-tops within 15 miles of good fish-producing body of water.	and disturbed riparian areas, which provide a low suitability to support this species.
red-breasted sapsucker	*Sphyrapicus ruber*	FSC;–;–	Moist woodlands.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
rufous hummingbird	*Selasphorus rufus*	FSC;–;–	(Nesting) Breeds in transition life zone of northwest coastal area from Oregon border to southern Sonoma County; nests in berry tangles, shrubs, and conifers; favors habitats rich in nectar-producing flowers.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
Swainson's hawk	*Buteo Swainsoni*	–;CT;–	(Nesting) Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah; requires adjacent suitable foraging areas such as grasslands, alfalfa or grain fields supporting rodent populations.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species during the summer.
tricolored blackbird	*Agelaius tricolor*	FSC;CSC;–	(Nesting colony) Highly colonial species, most numberous in Central Valley and vicinity; largely endemic to California; requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
Vaux's swift	*Chaetura vauxi*	FSC;CSC;–	(Nesting) Redwood, Douglas fir, and other coniferous forests; nests in large hollow trees and snags; often nests in flocks; forages over most terrains and habitats but shows a preference for foraging over rivers and lakes.	Unlikely. Habitat at the project location consists of valley grassland and disturbed riparian areas, which provide a low suitability to support this species.
western burrowing owl	*Athene cunicularia hypugaea*	FSC;CSC;–	(Burrow sites) Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation; subterranean	Unlikely. According to the biological survey report, the project area is considered unlikely to support burrowing owl (Hanover 2003b).

			nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC;CE;--	(Nesting) Riparian forest nester, along the broad, lower flood-bottoms of larger river systems; nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
white-faced ibis	*Plegadis chihi*	FSC;--;--	Freshwater and brackish marshes.	Unlikely. Habitat at the project location consists of valley grassland and disturbed riparian areas, which provide a low suitability to support this species.
white-headed woodpecker	*Picoides albolarvatus*	FSC;--;--	Coniferous woods in mountains.	Unlikely. Habitat at the project location consists of valley grassland and riparian areas, which are not known to support this species.
white-tailed (= black-shouldered) kite	*Elanus leucurus*	FSC;--;--	(Nesting) Rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland; open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
willow flycatcher	*Empidonax traillii*	--;CE;--	(Nesting) Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; require dense willow thickets for nesting/roosting; low, exposed branches are used for singing posts/hunting perches.	**Possible.** Habitat at the project location provides suitable foraging habitat for this species.
Mammals				
fringed myotis bat	*Myotis thysanodes*	FSC;--;--	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer; uses caves,	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and

			mines, buildings, or crevices for maternity colonies and roosts.	on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
greater western mastiff-bat	*Eumops perotis californicus*	FSC;CSC;--	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
long-eared myotis bat	*Myotis evotis*	FSC;--;--	Found in all brush, woodland, and forest habitats from sea level to about 9,000 feet; prefers coniferous woodlands and forests; nursery colonies in buildings, crevices, spaces under bark, and snags; caves used primarily as night roosts.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
long-legged myotis bat	*Myotis volans*	FSC;--;--	Most common in woodland and forest habitats above 4,000 feet; trees are important day roosts, caves and mines are night roosts; nursery colonies usually under bark or in hollow trees, but occasionally in crevices or buildings.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
Marysville California kangaroo rat	*Dipodomys californicus eximius*	FSC;CSC;--	Friable soil, grass-forb stages of chaparral (known only from the Sutter Buttes area).	Unlikely. The project area is located outside of the known range for this species.
Pacific fisher	*Martes pennanti pacifica*	FC;CSC;--	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure; use cavities, snags, logs and rocky areas for cover and denning; need large areas of mature, dense forest.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).

Pacific (=Townsend's) western big-eared bat	*Corynorhinus (=Plecotus) townsendii townsendii*	FSC;CSC;--	Humid coastal regions of Northern and Central California; roost in limestone caves, lava tubes, mines, buildings, etc.; will only roost in the open, hanging from walls and ceilings; roosting sites limiting; extremely sensitive to disturbance.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
pale Townsend's big-eared bat	*Corynorhinus (=Plecotus) townsendii pallescens*	FSC;CSC;--	Lives in a wide variety of habitats but most common in mesic sites; need appropriate roosting, maternity, and hibernacula sites free from human disturbance.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
San Joaquin pocket mouse	*Perognathus inornatus inornatus*	FSC;--;--	Typically found in grasslands and blue oak savannas; needs friable soils.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
Sierra Nevada snowshoe hare	*Lepus americanus tahoensis*	FSC;CSC;--	Boreal riparian areas in the Sierra Nevada; thickets of deciduous trees in riparian areas and thickets of young conifers.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
small-footed myotis bat	*Myotis ciliolabrum*	FSC;--;--	Rock outcrops, open grasslands, canyons, woodlands; roosts in cracks, crevices in cliffs, beneath tree bark, in mines or caves, and the occasional human dwelling.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are

				limited (Hanover 2003b).
spotted bat	*Euderma maculatum*	FSC;CSC;--	Occupies a wide variety of habitats from arid deserts and grasslands through mixed conifer forests; feeds over water and along washes; needs rock crevices in cliffs or caves for roosting.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
Yuma myotis bat	*Myotis yumanensis*	FSC;--;--	Optimal habitats are open forests and woodlands with sources of water over which to feed; distribution is closely tied to bodies of water; maternity colonies in caves, mines, buildings, or crevices.	Unlikely. A biological resources survey of the project area completed by Hanover Environmental Services, Inc. concluded that due to the isolation and on-going disturbance of the project area, wildlife resources potentially associated with the project site are limited (Hanover 2003b).
Critical Habitat				
Coastal and Valley Freshwater Marsh	NA	X	Coastal and valley freshwater marsh.	The project area consists of valley grassland and riparian habitat within an urban setting.
Great Valley Cottonwood Riparian Forest	NA	X	Great valley cottonwood riparian forest.	The project area consists of valley grassland and riparian habitat within an urban setting.
Great Valley Mixed Riparian Forest	NA	X	Great valley mixed riparian forest.	The project area consists of valley grassland and riparian habitat within an urban setting.
Great Valley Valley Oak Riparian Forest	NA	X	Great valley-valley oak riparian forest.	The project area consists of valley grassland and riparian habitat within an urban setting.
Great Valley Willow Scrub	NA	X	Great valley willow scrub.	The project area consists of valley grassland and riparian habitat within an urban setting.
Northern Basalt Flow Vernal Pool	NA	X	Northern basalt flow vernal pool.	The project area consists of valley grassland and riparian habitat within an urban setting.
Northern Hardpan Vernal Pool	NA	X	Northern hardpan vernal pool.	The project area consists of valley grassland and riparian habitat within an urban setting.

Northern Volcanic Mud Flow Vernal Pool	NA	X	Northern volcanic mud flow vernal pool.	The project area consists of valley grassland and riparian habitat within an urban setting.

Notes

–	No status to date
1B	CNPS listed rare, threatened, or endangered plants in California and elsewhere
2	CNPS listed rare, threatened, or endangered in California, but more common elsewhere
3	CNPS listed plants about which more information is needed; a review list
4	CNPS listed plants with limited distribution; a watch list
CE	California endangered
CNPS	California Native Plant Society
CR	California rare
CSC	California species of concern
CT	California threatened
FC	Federal candidate
FD	Federal delisted
FE	Federal endangered
FSC	Federal species of concern
FT	Federal threatened
NA	Not applicable
PX	Proposed critical habitat
SLC	Species of local concern
X	Critical habitat designated

Table 4.4-1: Species Commonly Occuring in Butte County

Common Name	Scientific Name	Common Name	Scientific Name	Common Name	Scientific Name
Amphibians/Reptiles					
common garter snake	*Thamnophis sirtalis*	Pacific treefrog	*Pseudacris (=Hyla) regilla*	western rattlesnake	*Crotalus oreganus (=viridis)*
common kingsnake	*Lampropeltis getula*	tiger whiptail	*Cnemidophorus tigris*	western toad	*Bufo boreas*
gopher snake	*Pituophis catenifer*	western fence lizard	*Sceloporus occidentalis*		
Birds					
American avocet	*Recurvirostra americana*	common raven	*Corvus corax*	northern mockingbird	*Mimus polyglottos*
American coot	*Fulica americana*	double-crested cormorant	*Phalacrocorax auritus*	northern pintail	*Anas acuta*
American crow	*Corvus brachyrhynchos*	downy woodpecker	*Picoides pubescens*	red-tailed hawk	*Buteo jamaicensis*
American goldfinch	Carduelis tristis	European starling	*Sturnus vulgaris*	red-winged blackbird	*Agelaius phoeniceus*
American wigeon	Anas americana	great blue heron	*Ardea herodias*	ring-billed gull	*Larus delawarensis*
Anna's hummingbird	*Calypte anna*	great horned owl	*Bubo virginianus*	rock dove	*Columba livia*
barn swallow	*Hirundo rustica*	greater roadrunner	*Geococcyx californianus*	song sparrow	*Melospiza melodia*
belted kingfisher	*Ceryle alcyon*	horned lark	*Eremophila alpestris*	spotted towhee	*Pipilo maculatus*
Bewick's wren	*Thryomanes bewickii*	house finch	*Carpodacus mexicanus*	snow goose	*Chen caerulescens*
black-headed grosbeak	*Pheucticus melanocephalus*	house sparrow	*Passer domesticus*	tree swallow	*Tachycineta bicolor*
black phoebe	*Sayornis nigricans*	house wren	*Troglodytes aedon*	tricolored blackbird	*Agelaius tricolor*
Bullock's oriole	*Icterus bullockii*	killdeer	*Charadrius vociferus*	western kingbird	*Tyrannus verticalis*
bushtit	*Psaltriparus minimus*	lark sparrow	*Chondestes grammacus*	western meadowlark	*Sturnella neglecta*
California gull	*Larus californicus*	least sandpiper	*Calidris minutilla*	western scrub-jay	*Aphelocoma californica*
California quail	*Callipepla californica*	lesser goldfinch	*Carduelis psaltria*	white-crowned sparrow	*Zonotrichia leucophrys*
Canada goose	*Branta canadensis*	mallard	*Anas platyrhynchos*	Wilson's warbler	*Wilsonia pusilla*
cedar waxwing	*Bombycilla cedrorum*	mourning dove	*Zenaida macroura*	yellow-rumped warbler	*Dendroica coronata*
cliff swallow	*Petrochelidon (=Hirundo) pyrrhonota*	northern flicker	*Colaptes auratus*		
Mammals					
big brown bat	*Eptesicus fuscus*	common raccoon	*Procyon lotor*	Norway rat	*Rattus norvegicus*
black rat	Rattus rattus	coyote	*Canis latrans*	ornate shrew	*Sorex ornatus*
black-tailed jackrabbit	*Lepus californicus*	deer mouse	*Peromyscus maniculatus*	pallid bat	*Antrozous pallidus*
Botta's pocket gopher	*Thomomys bottae*	desert cottontail	*Sylvilagus audubonii*	striped skunk	*Mephitis mephitis*
broad-footed mole	*Scapanus latimanus*	house mouse	*Mus musculus*	western gray squirrel	*Sciurus griseus*
California ground squirrel	*Spermophilus beecheyi*	little brown bat	*Myotis lucifugus*	Yuma myotis	*Myotis yumanensis*
California vole	*Microtus californicus*	mule deer	*Odocoileus hemionus*		

Source: Sierra Club Online Database for the California Sacramento Valley Area, Including Butte County (fall season)

Table 4.4-3: Listed and Proposed Species Potentially Occurring in the Project Area Potentially Needing Study

Common Name	Scientific Name	Status	General Habitat Description	Potential for Occurrence
Birds				
Aleutian Canada goose	*Branta canadensis leucopareia*	FD;--;--	(Wintering) Winters on lakes and inland prairies; forages on natural pasture or that cultivated to grain; loafs on lakes, reservoirs, ponds.	Valley grassland provides cover and forage suitablility for this species.
American peregrine falcon	*Falco peregrinus anatum*	FD;CE;--	(Nesting) Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures; nest consists of a scrape on a depression or ledge in an open site.	Valley grassland and riparian habitat provides this species suitabilty for reproduction, cover and foraging.
bank swallow	*Riparia riparia*	--;CT;--	(Nesting) Colonial nester; nests primarily in riparian and other lowland habitats west of the desert; requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Valley grassland and riparian habitat provides this species suitabilty for reproduction, cover and foraging.
California thrasher	*Toxostoma redivivum*	FSC;--;--	Chaparral.	Riparian habitat provides forage suitablility for this species.
ferruginous hawk	*Buteo regalis*	FSC;CSC;--	(Wintering) Open grasslands, sagebrush flats, desert scrub, low foothills, and fringes of pinyon-juniper habitats; mostly eats lagomorphs, ground squirrels, and mice; population trends may follow lagomorph population cycles.	Valley grassland and riparian habitat provides this species suitabilty for foraging.
great blue heron	*Ardea herodias*	--;--;--	(Rookery) Colonial nester in tall trees, cliffsides, and sequestered spots on marshes; rookery sites in close proximity to foraging areas; marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Valley grassland and riparian habitat provides this species suitabilty for foraging.
great egret	*Ardea alba*	--;--;--	(Rookery) Colonial nester in large trees; rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Valley grassland and riparian habitat provides this species suitabilty for cover and foraging.

greater sandhill crane	*Grus canadensis tabida*	–;CT;–	(Nesting and wintering) Nests in wetland habitats in northeastern California; winters in the Central Valley; prefer grain fields within 4 miles of a shallow body of water used as a communal roost site; irrigated pasture used as loaf sites.	Valley grassland provides this species suitabilty for cover and foraging.
Lawrence's goldfinch	*Carduelis lawrencei*	FSC;–;–	(Nesting) Nests in open oak or other arid woodland and chaparral, near water; nearby herbaceous habitats used for feeding; closely associated with oaks.	Valley grassland and riparian habitat provides this species suitabilty for foraging.
Lewis' woodpecker	*Melanerpes lewis*	FSC;–;–	Dry open woods, orchards, farmlands, foothills.	Valley grassland and riparian habitat provides this species suitabilty for foraging.
loggerhead shrike	*Lanius ludovicianus*	FSC;CSC;–	(Nesting) Broken woodlands, savannah, pinyon-junier, Joshua tree, and riparian woodlands, desert oases, scrub and washes; prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Valley grassland provides this species suitabilty for cover and foraging.
long-billed curlew	*Numenius americanus*	FSC;CSC;–	(Nesting) Breeds in upland shortgrass prairies and wet meadows in northeastern California; habitats on gravelly soils and gently rolling terrain are favored over others.	Valley grassland provides this species suitabilty for cover and foraging.
Nuttall's woodpecker	*Picoides nuttallii*	SLC;–;–	Shrublands, streamsides, and oak woodlands.	Riparian habitat provides this species suitabilty for cover and foraging.
oak (plain) titmouse	*Baeolophus (Parus) inornatus*	SLC;–;–	Broadleafed woodlands; sparse pinyon-juniper and oak woodlands.	Riparian habitat provides this species suitabilty for reproduction, cover, and foraging.
raptors (birds of prey, such as falcons, hawks, owls) and other migratory and resident birds	NA	MBTA;§3503.5 DFG Code;–	Various habitats.	A few scattered trees (primarily oak and eucalyptus) adjacent to the project area provide potential nest sites for raptors. Also, foraging or transient migratory and resident birds have a potential for occurrence in the project area.
red-breasted sapsucker	*Sphyrapicus ruber*	FSC;–;–	Moist woodlands.	Riparian habitat provides this species suitabilty for cover and foraging.

rufous hummingbird	*Selasphorus rufus*	FSC;--;--	(Nesting) Breeds in transition life zone of northwest coastal area from Oregon border to southern Sonoma County; nests in berry tangles, shrubs, and conifers; favors habitats rich in nectar-producing flowers.	Riparian habitat provides this species suitabilty for cover and foraging.
Swainson's hawk	*Buteo Swainsoni*	--;CT;--	(Nesting) Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah; requires adjacent suitable foraging areas such as grasslands, alfalfa or grain fields supporting rodent populations.	Valley grassland provides this species suitabilty for reproduction, cover, and foraging.
tricolored blackbird	*Agelaius tricolor*	FSC;CSC;--	(Nesting colony) Highly colonial species, most numberous in Central Valley and vicinity; largely endemic to California; requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	Valley grassland provides this species suitabilty for foraging.
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC;CE;--	(Nesting) Riparian forest nester, along the broad, lower flood-bottoms of larger river systems; nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Riparian habitat provides this species suitabilty for cover and foraging.
white-tailed (= black-shouldered) kite	*Elanus leucurus*	FSC;--;--	(Nesting) Rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland; open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Valley grassland provides this species suitabilty for foraging.
willow flycatcher	*Empidonax traillii*	--;CE;--	(Nesting) Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; require dense willow thickets for nesting/roosting; low, exposed branches are used for singing posts/hunting perches.	Riparian habitat provides this species suitabilty for reproduction, cover, and foraging.

Notes

--	No status to date
CE	California endangered
CSC	California species of concern
CT	California threatened
DFG	California Department of Fish and Game
FC	Federal candidate
FD	Federal delisted
FSC	Federal species of concern
MBTA	Migratory Bird Treaty Act
SLC	Species of local concern

APPENDIX F - CULTURAL RESOURCES INFORMATION

JOHN FURRY
CULTURAL RESOURCE SPECIALTIES
39 PARKSIDE CT.
CHICO, CA 95928

CULTURAL RESOURCE SPECIALTIES

October 24, 2002

MIKE NEER
PACLAND
506 COLUMBIA STREET NW
OLYMPIA, WA 98501

Dear Mike:

This letter report is in regards to the Archaeological Inventory Survey of the Duncan Shopping Center Expansion Project (TPN 002-170-004), 2044 Forest Avenue in Chico, Butte County, California. As requested I have completed this survey.

[illegible] field portion of this survey I completed a record search at the Northeast Center of the [illegible] Historical Resources Information System at California State University, Chico. (IC File # [illegible] The results of this record search are as follows: There was a survey in the 1980's of a [illegible] portion of this property (BL24A). No cultural resources were identified. Based on the results [illegible] record search and the previous survey, this area is considered to be one of very low sensitivity [illegible] archaeological/cultural resources.

[illegible] completed the field portion of this project on October 9, 2002. During the course of the field survey, no cultural remains were encountered. **I am giving archaeological clearance for this property. Should in the construction phase of the development of this property, cultural remains be encountered, it is recommended that a professional archaeologist be called to properly identify, record and mitigate.**

Sincerely,

John

John Furry
Director, Cultural Resource Specialties
39 Parkside Ct.
Chico, CA 95928
530-891-8918

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October 26, 2004

Joe Marine
1025 35th Avenue, Apt. 9
Sacramento, Ca. 95822

RE: CHICO WAL-MART PROJECT

Dear Mr. Marine:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski
Cultural Resources Specialist

PMC

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October 26, 2004

Berry Creek Rancheria of Maidu Indians
Patti Reese-Allan, Cultural Resources Representative
#5 Tyme Way
Oroville, Ca. 95966

RE: CHICO WAL-MART PROJECT

Dear Ms. Reese-Allan:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski
Cultural Resources Specialist

PMC

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October 26, 2004

Butte Tribal Council
Ren Reynolds
1693 Mt. Ida Road
Oroville, Ca. 95966

RE: CHICO WAL-MART PROJECT

Dear Mr. Reynolds:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski
Cultural Resources Specialist

PMC

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October 26, 2004

Enterprise Rancheria of Maidu Indians
Harvey Angle, Chairperson
1940 Feather River Blvd., Suite B
Oroville, Ca. 95965

RE: CHICO WAL-MART PROJECT

Dear Mr. Angle:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski
Cultural Resources Specialist

PMC

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October 26, 2004

KonKow Valley Band of Maidu
Patsy Seek, Chairperson
1185 Eighteen Street
Oroville, Ca. 95965

RE: CHICO WAL-MART PROJECT

Dear Ms. Seek:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski

John Nadolski
Cultural Resources Specialist

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October 26, 2004

Maidu Cultural and Development Group
PO Box 426
Greenville, Ca. 95947

RE: CHICO WAL-MART PROJECT

Dear Sir:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski
Cultural Resources Specialist

PMC

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October 26, 2004

Maidu Nation
Clara LeCompte
PO Box 204
Susanville, Ca. 96130

RE: CHICO WAL-MART PROJECT

Dear Ms. LeCompte:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski

John Nadolski
Cultural Resources Specialist

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October 26, 2004

Mechoopda Indian Tribe of Chico Rancheria
April Cottrell, Interim Tribal Administrator
125 Mission Ranch Blvd.
Chico, Ca. 95926

RE: CHICO WAL-MART PROJECT

Dear Ms. Cottrell:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski
Cultural Resources Specialist

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October 26, 2004

Mechoopda Indian Tribe of Chico Rancheria
Steve Santos, Chairperson
125 Mission Ranch Blvd.
Chico, Ca. 95926

RE: CHICO WAL-MART PROJECT

Dear Mr. Santos:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski
Cultural Resources Specialist

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October 26, 2004

Mooretown Rancheria of Maidu Indians
Candice Carroll, Tribal Administrator
#1 Alverda Drive
Oroville, Ca. 95966

RE: CHICO WAL-MART PROJECT

Dear Ms. Carroll:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski

John Nadolski
Cultural Resources Specialist

PMC

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October 26, 2004

Mooretown Rancheria of Maidu Indians
Gary Archuleta, Chairperson
#1 Alverda Drive
Oroville, Ca. 95966

RE: CHICO WAL-MART PROJECT

Dear Mr. Archuleta:

I obtained your name from the Native American Heritage Commission in order to inform you of the proposed Wal-Mart Project in Butte County. Wal-Mart is planning on building a store in Chico to serve the city's population as well as the surrounding communities. If you have any questions and/or concerns regarding this project please do not hesitate to contact me.

Sincerely,

PACIFIC MUNICIPAL CONSULTANTS

John Nadolski

John Nadolski
Cultural Resources Specialist

STATE OF CALIFORNIA Arnold Schwarzenegger, Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

October 21, 2004

John Nadolski
PMC
10461 Old Placerville Road, Suite 110
Rancho Cordova, CA 95827

Sent by Fax: 916-361-1574
Number of Pages: 5

RE: Proposed Wal-Mart project, Butte County. Capitol Village project, Sacramento County.

Dear Mr. Nadolski:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

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Butte County
October 20, 2004

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This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Wal-Mart project, Butte County.

Native American Contacts
Butte County
October 20, 2004

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This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Wal-Mart project, Butte County.

APPENDIX G - WAL-MART SUPERCENTER ECONOMIC IMPACT ANALYSIS: SOUTH STORE EXPANSION CHICO, CALIFORNIA

Wal-Mart Supercenter Economic Impact Analysis: South Store Expansion Chico, California

Prepared for:

Pacific Municipal Consultants

February 2006 (Revised)

February 7, 2006

Ms. Holly Keeler
Pacific Municipal Consultants
140 Independence Circle #C
Chico, California 95973

Re: Planned South Chico Wal-Mart Supercenter Economic Impact Analysis

Dear Ms. Keeler:

Sedway Group is pleased to submit this report regarding the expansion of the existing Chico Wal-Mart Discount Store to a Wal-Mart Supercenter in the southern part of the City of Chico. The report discusses the proposed Supercenter's anticipated sales, net sales relative to the existing Discount Store, the likely impact of these net sales on existing retailers, cumulative impacts of other selected planned developments in the primary market area, and the extent to which the Supercenter Store expansion may or may not contribute to urban decay in Chico.

It has been a pleasure working with you on this project. Please let us know if you have any questions or additional needs.

Sincerely,

Amy L. Herman, AICP
Managing Director

cc: Patrick Murphy, City of Chico

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I. EXECUTIVE SUMMARY

INTRODUCTION

The purpose of this study is to assess the economic impact of a proposed Wal-Mart Discount Store expansion to accommodate a Supercenter Store in the southern portion of the City of Chico, California ("South Supercenter"). The South Supercenter Store would be located at 2044 Forest Avenue, the site of the existing Discount Store. The proposed expansion will result in an incremental addition of 112,646 square feet of store space (inclusive of the outdoor garden center). Approximately 46 percent of this incremental space will be dedicated to food sales, as the South Supercenter Store will include a full-service grocery component, which is not present in the existing Discount Store. Additional incremental store space will be devoted to general merchandise and other sales.

If approved, the proposed expansion is assumed to experience full operations in 2008. This study probes the potential impacts of the store on existing City of Chico retailers, especially general merchandise and grocery stores, as well as stand-alone convenience stores, and estimates the extent to which the South Supercenter Store may or may not contribute to urban decay in the City of Chico.

SUMMARY OF FINDINGS

South Supercenter Store Sales

Sedway Group estimates that stabilized South Supercenter Store sales will total $112.3 million in 2008 dollars, comprising $74.8 million in general merchandise sales, $25.6 million in food sales, and $11.9 million in other sales (e.g., garden, tire, and restaurant). Stabilized sales are not expected to occur the first year of store operations, but rather the second or third year, which is typical of new retail operations. However, for the sake of analytic simplicity, the analysis conservatively assumes stabilized sales are achieved in 2008. Accordingly, all dollar figures are presented in 2008 dollars.

Net of existing Discount Store operations, the new annual sales achieved by the South Supercenter Store at stabilization total an estimated $51.8 million, reflecting $19.6 million in general merchandise sales, $23.8 million in food sales, and another $8.4 million in other sales. Of these net new sales, approximately 90 percent, or $46.6 million, is estimated to be generated by primary and secondary market area residents, including residents of Glenn, Tehama, and Butte counties. All other sales new to Wal-Mart are expected to originate from outside this area. The net new sales in general merchandise and food sales attributable to primary and secondary market area residents totals $39.1 million.

Economic Impacts on Existing City of Chico Retailers

The City of Chico is an established regional retail shopping location, with strong regional attraction in key retail categories. Approximately 40 percent all retail sales achieved by Chico retailers are sales captured from people living outside the City of Chico. The City of Chico is defined as the primary market area for the Supercenter store. The balance of Butte County along with Glenn and Tehama counties comprise the secondary market area. The development of the South Supercenter will provide an opportunity for Chico to further enhance its regional retail orientation. However, there may be sales impacts on existing general merchandise and food stores. None of these impacts, however, are anticipated to occur among Downtown Chico retailers.

General Merchandise and Food Store Sales. If the South Supercenter Store's net new primary and secondary market area sales occurred at the proportional expense of existing City of Chico retailers, then existing retailers would experience a maximum annual net loss of $11.1 million in general merchandise sales and $8.3 million in food sales upon stabilization of the South Supercenter Store in 2008 dollars. While these sales volumes may seem large, the general merchandise figure comprises only 3.1 percent of all estimated City of Chico general merchandise sales in 2008 while the food sales figure comprises only 2.6 percent of all estimated Chico food store sales in 2008. These are low percentage sales impacts, and are within the range of sales variability retailers should be prepared to experience, such as during strong recessionary years.

New population growth is anticipated to mitigate the projected lost sales volumes within three years for the general merchandise sales and within two years for the food store sales. In addition, retailers could successfully reposition their stores and Chico sales could increase overall due to the enhanced regionalism of Chico's retail market. Because of aggregate general merchandise store over-performance relative to both national and regional median sales figures, no general merchandise stores are anticipated to close during this sales recovery period. However, existing food stores in Chico in aggregate may be on the verge of under-performing. The food store diverted sales estimate of $8.3 million is equivalent to support for approximately 15,000 to 19,000 square feet of space. Thus, if Chico food stores cannot withstand a temporary downturn in sales, it is possible that one existing conventional grocery store or, less likely, a price-impact warehouse store, may close. It is unlikely any niche market will close due to these impacts.

Downtown Chico. The South Supercenter Store is projected to have no negative impact on Downtown Chico. Downtown Chico is a niche market focused on specialty items and services. The Downtown market caters to the student population of adjacent Chico State University and offers many restaurants and bars. A majority of Downtown retailers provide a product or service not found at a Wal-Mart Supercenter Store. The grocery component of the planned Wal-Mart South Supercenter Store is projected to have no negative impact on Downtown businesses. Furthermore, due to the nature of the Downtown retail market, the incremental addition to the general merchandise component of the planned South Supercenter Store is insignificant. Downtown retailers provide specialized products and services that the Wal-Mart South Supercenter Store does not, and any impacts as a result of the general merchandise component were likely experienced with the opening of the existing Wal-Mart Discount Store.

Cumulative Impacts

In addition to Wal-Mart's plans to expand the existing Chico Discount Store into a Supercenter, a Supercenter store is planned north of Chico, in the Northwest Chico Planning Area. This project is currently undergoing the environmental review process. Costco is undergoing approval to redevelop its existing store in Chico into a larger store with an incremental 25,678 square feet of space. Meanwhile, Kohl's is constructing a new store in Chico along with additional retail space on adjacent pads.

If all these projects are developed, the study findings suggest that at maximum, up to 74,000 to 226,000 square feet of general merchandise space could close, comprising two to three existing general merchandise stores, and up to 39,000 to 49,000 square feet of food store space could close, comprising one conventional grocery or price-impact warehouse food store. Additional planned retail projects in the secondary market area are not anticipated to have a significant impact on existing primary market area retailers.

Urban Decay Determination

Sedway Group engaged in several retail market research tasks to assess the probability of urban decay ensuing from development of the South Supercenter Store, with urban decay defined as physical deterioration that is so prevalent and substantial it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. These tasks revolved around assessing the potential for Chico stores closed due to the South Supercenter Store, if any, to remain vacant for a prolonged period of time or to be leased to other retailers within a reasonable marketing period.

The retail market research findings indicated that the retail market in Chico is strong. The City of Chico is a regional retail center. Many retailers have expressed interest in locating in Chico, including mid-sized and big box retailers not already in the market. Examples of the types of retailers include sporting goods, grocery, general merchandise, and electronics. Kohl's recently submitted an application to the City of Chico for consideration of a site near the planned South Supercenter expansion. Further, existing retailers have expressed interest in expanding their current operations but are limited because of existing site constraints.

This market information suggests that retail spaces vacated as a result of the South Supercenter Store will likely be successfully retenanted, including by tenants new to Chico and the regional market. Market experience suggests new space is easier to tenant than older space, but the market demand does exist for previously occupied retail space in Chico. Retenanting of spaces will only serve to benefit the market and expand local and regional shopping opportunities. Thus, Sedway Group concludes that the development of the South Supercenter Store will not contribute to urban decay in Chico. The same conclusion applies if all of the identified City of Chico retail projects are developed despite the potential closure of existing stores due to the negative impacts of diverted sales.

II. INTRODUCTION

STUDY BACKGROUND

Wal-Mart Stores, Inc. is seeking to expand the existing City of Chico, California Wal-Mart Discount Store to a Wal-Mart Supercenter Store. The existing Wal-Mart Discount Store is located at 2044 Forest Avenue in the southeastern portion of Chico. The project site is bounded on the north by Barney Lane, on the east by Forest Avenue, on the south by Wittmeier Drive, and on the west by State Route 99. The planned South Supercenter Store expansion is anticipated to open in 2006.

The Wal-Mart South Supercenter Store expansion is proposed at 223,445 gross square feet with an additional 20,602 gross square foot outdoor garden center. The existing Discount Store totals 125,889 gross square feet with an additional 5,512 gross square foot outdoor garden area. Thus, there would be a net increment of 112,646 gross square feet (inclusive of the outdoor garden center) upon expansion to the South Supercenter Store. There is currently one supercenter store in Northern California, located in Stockton, California, although others are planned. These stores are most highly distinguished from the prototypical Discount Store due to the inclusion of full-service grocery store operations. Much of the incremental space will be dedicated to food sales, as the South Supercenter Store will include a 55,729-square-foot (sales area and stockroom) full-service grocery component, which is not present in the existing Discount Store. Additional incremental store space will be devoted to general merchandise sales. In addition, in relation to the existing Discount Store, the South Supercenter Store will have a larger outdoor garden center, and a new tire and lube center. A breakdown of the square feet at both the Discount Store and expanded South Supercenter Store is included in Exhibit 1.

Pacific Municipal Consultants, at the request of the City of Chico, commissioned this economic impact study to accompany the EIR they are preparing for the Wal-Mart expansion. The purpose of the study is as follows:

1) to probe the potential impacts of the South Supercenter Store on existing City of Chico retailers, especially grocery and general merchandise stores;
2) to determine if Downtown Chico retailers might be impacted by the opening of a South Supercenter store;
3) to develop an estimate of the extent to which opening of the South Supercenter Store may or may not contribute to urban decay in Chico; and
4) estimate the cumulative impacts of other selected retail projects in the primary and secondary market areas.

This report, prepared in the context of an EIR for the project, documents Sedway Group's research and analysis probing the afore-mentioned issues.

STUDY TASKS

Sedway Group engaged in several tasks to complete this assignment. In brief, these tasks included the following:

- Identified major general merchandise retailers in the City of Chico region and beyond;
- Conducted fieldwork to identify and evaluate existing Chico general merchandise, grocery, and stand-alone convenience stores;

- Conducted fieldwork to asses the existing market and retail niche served by Downtown;
- Estimated existing Wal-Mart Discount Store sales and planned Wal-Mart South Supercenter Store sales;
- Identified a secondary market area for prospective South Supercenter Store shoppers;
- Collected and analyzed City of Chico and secondary market area taxable retail sales;
- Conducted retail leakage analyses for the City of Chico and the secondary market area;
- Estimated the share of the South Supercenter Store's sales to be generated by the primary and secondary market areas versus a tertiary market area;
- Estimated the maximum South Supercenter Store impacts on existing City of Chico retailers;
- Estimated the share of the South Supercenter Store's sales likely to be new to the City of Chico;
- Assessed the competitiveness of existing City of Chico grocery and general merchandise stores and likely South Supercenter Store impacts;
- Estimated the planned North Supercenter's sales;
- Identified planned retail projects in the primary and secondary market areas;
- Assessed the cumulative impacts of the selected retail projects in the primary and secondary market areas; and
- Assessed the extent to which opening of the South Supercenter Store may or may not contribute to urban decay in the City of Chico.

The detailed findings pertaining to these tasks are reviewed and fully documented in this report, with detailed analytical findings presented in the exhibits in Appendix A.

STUDY RESOURCES

Many resources were relied upon for this study. These included information provided by Wal-Mart Stores, Inc., and the Wal-Mart Stores, Inc. 2005 Form 10-K on file with the United States Securities and Exchange Commission. Additional study resources included the California Department of Finance Demographic Research Unit population estimates and projections, and 2003 taxable sales data generated by the State of California Board of Equalization. Business-specific data identifying primary and secondary market area grocery stores and general merchandise retailers were obtained from InfoUSA. Resources prepared by Claritas, Inc., a national provider of demographic and economic data, were relied upon for mean household income trend data. Inflationary adjustments were made based upon the Consumer Price Index for all urban consumers in the State of California. Local City officials and commercial real estate brokers also provided insight and information.

REPORT ORGANIZATION

This report includes six chapters, as follows:

I. Executive Summary
II. Introduction
III. Store Sales Impacts
IV. Economic Impacts on Existing City of Chico Retailers
V. Cumulative Impacts
VI. Urban Decay Determination

All the exhibits referenced in the report are included in Appendix A. This report is subject to the appended Assumptions and General Limiting Conditions.

III. STORE SALES IMPACTS

Sedway Group's summary findings relative to the anticipated retail sales of the proposed South Supercenter Store are presented below. These include estimates of the total sales generated by the store, the minimum amount of sales estimated to be net new to the City of Chico, and the maximum amount of sales estimated to be diverted away from existing City of Chico grocery stores and general merchandise stores. The potential for lost sales to be mitigated through population growth is also presented.

STORE LOCATION AND SIZE

The proposed Wal-Mart South Supercenter Store is located at 2044 Forest Avenue in the southeastern portion of the City of Chico, California. Barney Lane bounds the project site on the north, Forest Avenue on the east, Wittmeier Drive on the south, and State Route 99 on the west. The South Supercenter Store would represent an expansion of the existing Discount Store, located on the site. The Wal-Mart South Supercenter Store is proposed at 223,445 gross square feet with an additional 20,602 gross square foot outdoor garden center. The existing Discount Store totals 125,889 gross square feet with an additional 5,512 gross square foot outdoor garden area. Thus, there would be a net increment of 112,646 gross square feet (inclusive of the outdoor garden center) upon expansion to the South Supercenter Store. The square foot figures were provided by PadLand, the project developer. A breakdown of the incremental square footage by category is displayed in Exhibit 1, and summarized below in Table 1.

Table 1
Incremental Square Feet by Sales Category (1)
Existing Discount Store and Planned South Supercenter Store
City of Chico

Retail Category	Discount Store	Supercenter Store	Incremental Addition
General Merchandise	119,912	162,541	42,629
Food Sales	3,980	55,729	51,749
Other Sales	7,509	25,777	18,268
Total	131,401	244,047	112,646

(1) Figures include sales area and estimated stockroom area by retail category based on a proportional share of the total store square footage.
Sources: PacLand; and Sedway Group.

The largest portion of the net incremental space would be allocated to food sales. However, there will also be an increase in the amount of floor space devoted to general merchandise sales. In addition, relative to the existing Discount Store, the South Supercenter Store will have a larger outdoor garden center and a new tire and lube express center.

PROJECTED WAL-MART SOUTH SUPERCENTER SALES

Total Store Sales

For the sake of confidentiality, the City of Chico cannot release information about actual store sales for the existing Discount Store. Therefore, other research approaches are necessary to estimate

current and projected store sales. According to the Wal-Mart Stores, Inc. 2005 Form 10-K, average sales per square foot of all Wal-Mart Stores (Discount and Supercenter) are $421 per square foot.

The South Supercenter Store is proposed to open in 2007. For the purpose of this analysis, Sedway Group assumes sales in year 2008 dollars to account for the first full year of operation. Average Wal-Mart store per square foot sales have consistently increased on an annual basis.[1] In keeping with this trend, Sedway Group assumes an annual inflationary adjustment of 3.0 percent from 2003 to calendar year 2008, resulting in an average store sales projection of $460 per square foot in 2008 (see Exhibit 2).

The per square foot sales estimate is comparatively lower than figures cited in other literature, especially for food sales. Progressive Grocer, a monthly publication serving the supermarket industry, publishes information regarding sales performance for many food store chains. Their figures are presented for store selling area, while the Wal-Mart store sales estimate used herein is for gross area. The Progressive Grocer information for Wal-Mart is presented in Appendix B. This indicates a 2004 sales figure of $693 per square foot of selling area. Applying this figure to the South Supercenter stores food space, with an allocation for planned stockroom space, converts to a sales estimate of $450 per square foot of gross food space in 2004. This figure is equivalent to $506 per gross square foot of selling area in 2008 dollars, assuming inflation of 3.0 percent annually. This is slightly higher than the $460 per square foot figure used for the analysis based on audited information presented in Wal-Mart's Form 10-K; however, the difference is likely attributed to the relatively higher sales per square foot that stores traditionally experience on food products compared to general merchandise or other categories of merchandise.

Projected Sales by Category

Assuming the $460 per square foot average sales across all store space, the South Supercenter's Store sales are forecasted in 2008 to total $112.3 million, assuming store stabilization at this time. Stabilized sales are not expected to occur the first year of store operations, but rather the second or third year, which is typical of new retail operations. However, for analytical purposes, these sales are assumed to occur in 2008. As the South Supercenter Store will be the result of expanding the existing Discount Store, not all these sales will comprise new sales to Wal-Mart. Based upon the existing Wal-Mart Discount Store estimated 2008 sales equivalent of $60.4 million, Sedway Group estimates net new store sales of $51.8 million (see Exhibit 3).

These net new sales will be spread across many store-merchandising categories. General merchandise and food sales are the categories of most relevance to this study. Therefore, Sedway Group developed an estimate of store sales by these two categories. While the California State Board of Equalization will record all Wal-Mart sales as general merchandise, these are separated from food sales for analytic purposes to facilitate the impact analysis.

The estimation of sales by category for the South Supercenter Store and existing Discount Store are presented in Exhibit 3. This exhibit identifies estimates of sales by type of category, derived from published information as well as information provided by PacLand, the project developer. The results, summarized in Table 2 below, indicate that the net new space will have the potential to generate up to $19.6 million in new general merchandise sales, $23.8 million in new food sales, and $8.4 million in other new sales comprising the total sales increment of $51.8 million.

[1] Based upon examination of Wal-Mart form 10-Ks for 2001, 2002, 2003, 2004, and 2005.

Table 2
Estimated South Supercenter Store Sales by Category (1)
2008, in Millions

	Total Store Area		Incremental Store Area	
Retail Category	**Sq. Ft.**	**Sales**	**Sq. Ft.**	**Sales**
General Merchandise	162,541	$74.8	42,629	$19.6
Food Sales	55,729	$25.6	51,749	$23.8
Other Sales	25,777	$11.9	18,268	$8.4
Total	244,407	$112.3	97,556	$51.8

(1) Sales figures may not total due to rounding.
Sources: Wal-Mart Stores, Inc.; and Sedway Group.

The following analysis examines the extent to which the net new general merchandise and food sales will comprise new sales to the City of Chico and may or may not impact existing Chico retailers.

NET NEW SALES TO THE CITY OF CHICO

Sedway Group engaged in several analytical steps to assess the prospective minimum share of the South Supercenter Store's sales new to the City of Chico and the associated impacts on existing retailers. These steps included estimation of the following:

- Primary market area;
- Secondary market area;
- Share of South Supercenter Store sales originating from a tertiary market area;
- Primary market area and combined primary and secondary market area retail leakage and attraction;
- Maximum share of Wal-Mart South Supercenter Store sales likely to be initially diverted from existing Chico retailers, on a worst case basis; and
- Impact of population growth and other factors on sales impacts.

The following summary findings are documented in a series of exhibits included in the Appendix, as noted.

Primary Market Area Definition

Sedway Group estimates that the primary market area for retail demand in Chico is the City of Chico, with residents in Chico comprising the largest share of demand for retail sales. While visual observation and data analysis both suggest that Chico has a larger retail base than warranted given its size and population, retail sales analysis documented in this chapter (see Retail Leakage Analysis, Findings) indicates that the equivalent of 60 percent of Chico sales are estimated to be generated by Chico residents including the City's sphere of influence. Thus, Chico generates many of its own retail sales, but the City also captures significant sales from non-residents. This establishes the City as a regional hub for retail.

Secondary Market Area Sales

Secondary Market Area Definition. Sedway Group identified a secondary market area for the proposed Wal-Mart South Supercenter Store to include the following locations:

- Glenn County;
- Tehama County; and
- Butte County (excluding Chico).

This secondary market area definition reflects the existing nature of retailing in Chico and the location of other major general merchandise retailers, including Wal-Mart stores. Sedway Group identified all major general merchandise retailers located in the general area, including Yuba and Sutter counties to the south, Shasta County to the north, the City of Reno to the east, and Glenn County to the west. The boundaries of the secondary market area, as depicted in Exhibit 4, are reflective of the area the proposed South Supercenter Store will most likely draw from. It is assumed that residents south of the secondary market area will be attracted to general merchandise retailers in Yuba City; residents located north of the secondary market area will be attracted to general merchandise retailers located in Redding; and residents to the west will be attracted to yet other more remote locations. The next nearest Wal-Mart stores to Chico are located in Oroville, Willows, and Red Bluff. These stores are approximately 22, 40, and 47 miles from the proposed Wal-Mart South Supercenter Store site, respectively.

While two of these Wal-Mart stores are currently undergoing the environmental review process to support expansion to Supercenters (Red Bluff and Willows), Chico has a much greater variety of regional retailers. Therefore, shoppers even from the Red Bluff (in Tehama County) and Willows (in Glenn County) areas will likely travel to Chico to meet their regional shopping needs, which may then include a trip to the local Wal-Mart Supercenter Store. This behavior will likely extend to other regional residents, including those living outside the secondary market area. This suggests yet additional demand may be generated from a tertiary market area, beyond the boundaries of the secondary market area.

Sedway Group estimates that primary and secondary market area residents will generate 90 percent of the Wal-Mart South Supercenter Store's sales. Tertiary market area residents will generate the remaining 10 percent of sales. These percentage allocations are actually conservative, as subsequent analysis indicates that the combined primary and secondary market areas collectively attract 17.0 percent of sales from other areas (see following retail sales leakage analysis findings).

The concept of a percentage share allocation of demand from a market area is consistent with general real estate market analysis principles, which recognize that regional retailers have primary, secondary, and often even tertiary market areas. It is also consistent with discussions with Chico Planning staff, and retail brokerage professionals.

Secondary Market Area Sales. Given the stabilized store net new sales estimate of $19.6 million in general merchandise sales and $23.8 million in food store sales, coupled with the estimated 90/10 split of sales between the combined primary and secondary market areas (90) and tertiary market area (10), the Wal-Mart South Supercenter's net new sales are estimated to originate as follows:

Table 3
Origin of New Wal-Mart South Supercenter Store Sales
2008 Dollars (millions)

Retail Category	Total	Primary and Secondary Market Area	Tertiary Market Area
General Merchandise	$19.6	$17.6	$2.0
Food Sales	$23.8	$21.4	$2.4
Other Sales	$8.4	$7.6	$0.8
Total (rounded)	$51.8	$46.6	$5.2

Source: Sedway Group.

These estimates indicate that a total of $46.6 million in Wal-Mart South Supercenter Store sales are estimated to be net new sales generated from within the store's primary and secondary market areas, with $39.0 million comprising general merchandise and food sales.

Retail Sales Leakage Analysis

Approach. Sedway Group operates a regression-based model that estimates retail spending potential for a market area (usually a city, grouping of cities, or county) based upon population, income, and consumer spending patterns.[2] The model then determines the extent to which a market area is or is not capturing this sale potential based upon taxable sales data published by the State of California Board of Equalization or provided by city tax consultants. In order to determine the anticipated pattern of retail spending for a market area, the model uses a benchmarked control area. For the purposes of this study, the control area is the State of California. The purpose of the control area is to control for characteristics unique to individual markets that might artificially inflate or deflate the calculated spending pattern of area residents, such as the City of Chico's strong regional draw.

Retail categories in which spending is not fully captured are called "leakage" categories, while retail categories in which more sales are captured than are generated by residents are called "attraction" categories. Generally, attraction categories signal particular strengths of a retail market, while leakage categories signal particular weaknesses.

Population Estimates. Sedway Group's retail sales leakage model conducts the analysis for all retail sales in an area, including taxable and nontaxable. However, for purposes of this study, the findings focus on the categories most relevant to the Wal-Mart South Supercenter Store, e.g., general merchandise and food stores. City of Chico General Plan and California Department of Finance Demographic Research Unit population figures and projections were used in the leakage analysis (see Exhibit 5). Pursuant to data provided by the City of Chico, the Chico Planning Area as defined by the City of Chico General Plan had a 2003 population of 100,675 residents. Sedway Group utilized city-level population projection of 134,000 residents in year 2014 per the City of Chico General Plan in order to project the City of Chico Planning Area population. Based on the compound average annual growth rate of the 2003 population figure and the 2014 projection, intermediary years and year 2015 population figures were calculated.

Combined primary and secondary market area population estimates relied upon data provided by the California Department of Finance. Sedway Group utilized county-level population projections to the year 2015, generated by the Department of Finance, in order to project the secondary market area population. Based on the compound average annual growth rate between the 2005 population

[2] Much of the analysis is predicated upon spending patterns by household income per the United States Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey.

figure and the 2010 and 2015 projection, intermediary year populations were calculated. The preceding methodology was discussed in detail with and approved by City of Chico staff and Pacific Municipal Consultants.

Analytic Adjustment Required Due to Confidentiality. The retail sales leakage analysis conducted for the combined primary and secondary market areas involved an analytic adjustment necessitated due to data limitations. When the Board of Equalization publicly reports data, it will not report data for a sales category if it does not meet certain disclosure requirements. For example, if there are only one or two stores in a category or the category sales are dominated by one retailer, then the sales in that category will not be released. Instead, they will be combined with the sales in another category. This is the case with the general merchandise sales in two of the secondary market area counties: Glenn and Tehama. For these counties, the Board of Equalization combined the general merchandise sales with "other retail stores." However, there are sufficient general merchandise stores in Butte County to report the category sales.

These data inconsistencies between counties required that the combined primary and secondary market area leakage analysis involve some analytic irregularities. To preserve as much analytical information as possible, the Butte County general merchandise sales data were retained in the analysis. However, the analysis also includes general merchandise sales included with other retail sales (i.e., for Glenn and Tehama counties). Therefore, subsequent analysis drawing upon secondary market area general merchandise findings incorporated the results for general merchandise sales within the context of other retail stores.

Findings. Two leakage analyses were conducted to assess the state of Chico's retail climate. The first leakage analysis examines the city's sales performance relative to its own population base in order to assess the degree to which the city is serving the retail needs of its resident population. In this analysis, Chico comprises the primary market area. A second leakage analysis examines the sales performance of the South Supercenter Store's combined primary and secondary market areas.

The leakage analyses were conducted using 2003 sales data and extrapolated to 2008, reflecting the sales estimates for the South Supercenter Store upon completion. The 2003 data were used because they reflect the last full year for which retail sales data were available from the Board of Equalization at the time the study was updated. The per capita expenditure trends from 2003 were assumed to be equivalent to the per capita expenditure trends for 2008, with adjustments for interim population growth and inflation. The purpose of this adjustment was to maximize comparison with the South Supercenter Store's anticipated net additional primary and secondary market area sales in 2008 dollars.

The leakage results for Chico (primary market area) and the combined primary and secondary market areas are located in the Appendix (see Exhibits 6 and 7 for City of Chico results and Exhibits 8 and 9 for combined primary and secondary market area results). For benchmark purposes, detailed results for all retail categories are presented for each area, as well as results specific to the general merchandise and food stores retail categories to be represented at the Wal-Mart South Supercenter Store.

The City of Chico is a regional retail hub. The city attracts a significant amount of retail spending from outside the city borders. All of the retail categories, with the exception of service stations, experienced significant attraction in sales. Spending by Chico residents represents 60 percent of the total retail spending in the City of Chico. This substantiates the definition of the City as the primary market area, as the source of the majority of the City's retail sales. However, approximately 40 percent of retail spending in Chico is generated from outside the city. Furthermore, the combined primary and secondary market areas have attraction and generate approximately 17.0 percent of all

retail spending from outside the market areas. Even with this additional sales attraction, the combined primary and secondary market areas experience leakage in apparel, restaurants, and home furnishing and appliances. These leakages suggest even more opportunity for retailer support. These findings indicate that Chico achieves strong retail attraction, demonstrating Chico's regional retailing dominance. The introduction of the South Supercenter Store expansion could, therefore, further support Chico's regional sales, solidifying Chico's position as the region's dominant retail location.

Implications For Net New Sales Generation

Sales Impacts on Existing Stores. Sedway Group has developed an analytic approach that estimates the maximum impact of a store such as the proposed Wal-Mart South Supercenter Store on existing retailers. For this analysis, the approach assumes that if the South Supercenter Store is adding sales to a category in an amount greater than any primary or combined primary and secondary market area leakage in the category, ***then at worst***, the amount of South Supercenter Store sales in that category in excess of any leakage will be diverted away from existing City of Chico retailers in proportion to the Chico retailers' contribution to combined primary and secondary market area sales. In other words, the negative impacts of the Wal-Mart South Supercenter Store's sales will be spread proportionally among all the like retailers in the combined primary and secondary market area. This diversion estimate, prepared for analytic purposes, assumes no recovery among the impacted retailers.

This approach is analytically displayed in Exhibit 10, which takes into account the following factors for the two most relevant retail sales categories:

- Net South Supercenter Store sales by major category;
- Estimated net South Supercenter Store sales by major category generated by combined primary and secondary market area residents;
- Chico's share of adjusted combined primary and secondary market area sales based upon the historic distribution of sales;
- The share of South Supercenter Store sales estimated, at maximum, to be diverted from existing City of Chico retailers upon stabilization; and
- The minimum net new sales achieved by the South Supercenter Store ***not*** diverted away from existing City of Chico retailers.

This is a conservative approach, in that it assumes there will be no net increase in primary and secondary market area sales after the North Supercenter Store achieves market stabilization. Such increases commonly happen as residents shift their shopping patterns (e.g., they satisfy more of their retail needs in town instead of leaving town to do so) or increase their expenditures based upon the enhanced availability of consumer goods. This is why Sedway Group considers the resulting existing retailer impacts ***maximum estimates*** upon stabilization, summarized in Table 5, and the resulting net new sales to the City of Chico ***minimum estimates***. Further, the general merchandise figure may be an overestimate given that a portion of the space assumed to be devoted to general merchandise sales may ultimately be allocated to different retail categories, such as apparel, home furnishings and appliances, and "other" retail.

Table 5
Maximum South Supercenter Retailers Sales Impacts Upon Stabilization
2008, in millions $

Retail Category	Net New Supercenter Sales	Maximum Sales Diverted From Chico Retailers	Minimum Net New Sales to Chico
General Merchandise	$19.6	$11.1	$8.6
Food Stores	$23.8	$8.3	$15.5
Total	$43.4	$19.4	$24.1

Source: Sedway Group.

These results indicate that, at worst, $19.4 million in sales captured by the South Supercenter Store upon stabilization will comprise sales diverted away from existing City of Chico general merchandise and food retailers. Thus, the balance of new sales, comprising $24.1 million, is the minimum estimate of South Supercenter Store general merchandise and food sales new to Chico.[3]

These figures are conservative and are presented as an analytical benchmark. They are considered conservative for several reasons. Foremost, they assume the maximum diversion away from existing retailers upon stabilization of the South Supercenter Store. Thus, they do not take into account any prospective market corrections or enhancements following the introduction of the Wal-Mart South Supercenter Store to the marketplace, including competitive retailer repositioning. More importantly, they do not take into consideration population growth in the primary and secondary market areas following introduction of the South Supercenter Store. These latter affects will likely be quite strong, as demonstrated in the following discussion.

Reflective of Chico's regional retail dominance, the maximum sales diverted represent just 2.9 percent of the estimated combined total general merchandise and food store sales in Chico in 2008 (see Exhibit 11). Specifically, the maximum figure of $11.1 million in diverted general merchandise sales comprises only 3.1 percent of Chico general merchandise sales, estimated at $351.5 million in 2008. The maximum figure of $8.3 million in diverted food stores sales comprises only 2.6 percent of Chico food store sales, estimated at $314.8 million in 2008. These estimates assume the South Supercenter Store achieves stabilization in 2008, which is aggressive, given that the earliest the store is likely to open given the planning process is 2007 and that stabilization is unlikely to occur before 2009 at the earliest (i.e., two years). Thus, by the time the South Supercenter Store achieves stabilization, these sales percentages will be lower.

Mitigating Effects of Population Growth and Other Factors. Despite the size of the maximum sales estimate summarized in Table 5, they will likely lessen considerably by the time the store achieves stabilization after about two to three years. Factors contributing to this finding include the City of Chico and secondary market area's anticipated population growth, the clear regional positioning of the Chico retail market, and the demonstrated ability of retailers (in Chico and generally speaking) to respond to increased levels of competition.

The greatest mitigating factor to any potential negative South Supercenter Store impacts is the anticipated population growth and the associated spending of these new residents. For example, between 2008 and 2013, Chico's population is anticipated to grow by 15,913, with primary and secondary market area population growth estimated at 18,418 (see Exhibits 12 and 13). Given the estimated per capita spending for City of Chico and combined primary and secondary market area residents, and Chico's historic share of combined primary and secondary market area sales, this new population is estimated to generate the following new sales by 2013:

[3] Additional net new sales will result from "other" Supercenter sales, such as garden sales.

Table 6
New Population Retail Demand
City of Chico and Combined Primary and Secondary Market Area
2008 – 2013, in 2008 Dollars

Retail Category	City of Chico	Primary and Secondary Market Area	Estimated Chico Capture
General Merchandise	$21.1	$24.8	$22.5
Food Stores	$30.1	$35.6	$30.1
Total	$51.2	$60.4	$52.6

Source: Sedway Group.

These figures indicate that by 2013, Chico retailers are estimated to capture an additional $22.5 million in general merchandise sales and $30.1 million in new food stores sales.[4] These figures exceed the maximum $11.1 million in general merchandise sales and $8.3 million in food sales estimated to be diverted away from Chico retailers as a result of the net South Supercenter Store sales. The extent to which these diverted sales will impact existing retailers will depend upon many factors, such as their market niche, hours of operation, market strength, store and management quality, and location relative to the Supercenter store. Many of these factors are presented in the following chapters, with the Cumulative Impacts Chapter in particular discussing likely impacts on Chico's general merchandise and food stores.

Furthermore, there is a substantial amount of new residential construction in the Chico development pipeline (see Exhibit 14). This amount of growth suggests that the preceding Chico population growth forecast of 15,913 between 2008 and 2013 may understate actual growth in Chico and associated retail spending. According to the City of Chico Planning Department, as of October 2005, there were approximately 5,974 new residential units either under construction (2,827 units), tentative map approved (493 units), or application in process (5,974 units) in Chico. Applying the U.S. Census 2000 average household size for Chico of 2.41 persons per household, the new residential construction might accommodate an additional 22,399 residents in Chico. Given the pace of development in Chico, additional residential development will likely be planned and constructed prior to 2013, specifically in the Northwest Chico Specific Plan Area.

[4] As a result of population growth occurring primarily within the City of Chico, Chico's potential capture rate of the general merchandise category is assumed to include 100 percent of Chico's demand and 33 percent of the secondary market area demand. Detailed analysis of the primary and secondary market area leakage analysis indicates that absent the estimated sales generated by Chico residents, Chico retailers capture the equivalent of 67 percent of secondary market area resident spending. The analysis conservatively assumes that only half of that amount, or roughly 33 percent, is captured from secondary market area residents. Chico's potential capture rate of the food stores category is assumed to include 100 percent of Chico's demand and none of the secondary market area's food stores demand, as these sales are conservatively assumed to be local-oriented.

IV. ECONOMIC IMPACTS ON EXISTING CITY OF CHICO RETAILERS

The analytical findings presented in the previous chapter indicate that, at worst, up to $11.1 million in annual general merchandise and $8.3 million in annual food store sales might be initially diverted away from existing Chico retailers following the expansion of the South Supercenter Store. This chapter in turn probes the extent to which this maximum sales impact might or might not impact existing general merchandise and food stores based on their store characteristics. An additional charge of this study was to determine the extent to which the South Supercenter Store might impact Downtown retailers. Thus, this chapter also addresses the prospective impact of the South Supercenter Store on Downtown Chico. This more geographically refined analysis is presented first, followed by a discussion of food stores, general merchandise stores, and stand-alone convenience stores located throughout the City of Chico.

DOWNTOWN RETAILERS IMPACT

Sedway Group toured the Chico Downtown to develop an understanding of the retail niche served by Downtown retailers, the existing retail dynamics, and to determine if the opening of the planned Wal-Mart South Supercenter Store might impact Downtown retailers. In addition, Sedway Group contacted local retail brokers to gain a better understanding of the history of Downtown retailing and to obtain their perspective on the opening of the South Supercenter Store.

Location

The Downtown is located in the southern portion of the City of Chico adjacent to the eastern boundary of California State University Chico ("Chico State"). Downtown Chico is bounded by East 1st Street to the north, Flume Street to the east, 9th Street to the south, and Normal Avenue to the west. Downtown Chico is located approximately 2.9 miles west of the existing Wal-Mart Discount Store/planned South Supercenter Store expansion. The Downtown boundary is identified on the map in Exhibit 15 and reflects information provided by the Chico Downtown Business Association.

Downtown Retail Market

Sedway Group toured Downtown Chico to document the existing tenant mix, to identify vacant storefronts, and to better understand the retail niche served by Downtown. The Downtown consists of primarily independent specialty retail and services, with many sit-down and quick serve restaurants. Downtown street frontages are dominated by boutique retail stores and services, including restaurants, apparel stores, tanning salons, stained glass stores, gift shops, banks, collectibles stores, bicycle stores, and an art gallery. Entertainment uses include many bars focused on serving students at the nearby California State University at Chico. There are several restaurants scattered throughout Downtown serving a variety of cuisines from Thai, Chinese, and Japanese to Mexican and American.

Sedway Group identified many storefronts in Downtown Chico, of which only a handful were vacant at the time of the fieldwork with no apparent long-term vacancies. Further, several of the vacant storefronts are marketed as office space. This indicates a relatively low retail vacancy rate.

Discussions with Local Representatives

Sedway Group interviewed local retail brokers to further discuss the potential impacts of the planned South Supercenter Store on Downtown retailers.[5] All agreed that the grocery component of the South Supercenter expansion would have no impact on Downtown retailers because there are no major food stores in Downtown. It was noted that the Chico Natural Foods Store is located on the Downtown periphery; however, this store provides specialized organic produce and products not competitive with the goods offered at a Wal-Mart Supercenter store. Further, the impact of the incremental addition to the general merchandise component is believed to be insignificant due to the specialty niche served by Downtown retailers and resulting limited competition with the South Supercenter Store. Downtown retailers provide specialized products and services that the Supercenter Store does not, and any impact as a result of the general merchandise component was experienced with the opening of the existing Wal-Mart Discount Store. Furthermore, Downtown's location adjacent to Chico State provides for a consistent population base and the retailers in Downtown provide goods oriented to this student population.

Downtown Impact Conclusion

Downtown Chico is a niche market focused on specialty items, services, and entertainment. A majority of Downtown retailers provide a product or service not found at a Wal-Mart supercenter store. With the exception of Chico Natural Foods Stores, there are no major food stores in Downtown. As a result, the grocery component of the planned South Supercenter Store is projected to have no negative impact on Downtown businesses. Furthermore, due to the nature of the Downtown retail market, the incremental addition to the general merchandise component of the planned South Supercenter Store is insignificant. Downtown retailers provide a specialized product and service that the Wal-Mart Supercenter Store will not, and any impacts as a result of the general merchandise component were likely experienced with the opening of the existing Wal-Mart Discount Store.

COMPETITIVE FOOD STORE SALES

Sedway Group visited the major food stores in Chico in late-July 2004 to visually assess their performance, to determine their market niche, and to qualitatively assess the degree to which they may actually incur the maximum $8.3 million in projected lost food sales. This maximum figure comprises only 2.6 percent of Chico's estimated $314.8 million in food store sales in 2008 (see Exhibit 11). Sedway Group identified existing stores considered competitive with the proposed Wal-Mart South Supercenter Store via store location information provided by InfoUSA, and reviewed by the City of Chico staff. The list of competitive grocery stores includes the following existing stores in Chico: Albertson's, Chico Grocery Outlet, Foodmaxx, two Raley's stores, three Safeway stores, Winco Foods, Asian Market, Chico Natural Foods, and S&S Produce.[6] In addition, at the request of City of Chico staff, Sedway Group visited selected stand-alone convenience stores to visually assess their performance, to determine their market niche, and to qualitatively assess the degree to which they may actually incur impacted sales. As discussed further below, it was concluded that the stand-alone convenience stores were not competitive with the South Supercenter Store

[5] Broker names and contact information are maintained in out project files.

[6] The Grocery Outlet is not technically a full-service grocery store, as it does not sell the full complement of traditional grocery goods. However, products sold at the store are all available at traditional grocery stores.

Store Locations

The food stores included in this inventory are identified on the map in Exhibit 15. The map also depicts the location of the existing Wal-Mart Discount Store/South Supercenter expansion and the planned Wal-Mart Supercenter Store ("North Supercenter") located in the northern part of Chico. As Exhibit 15 indicates, the food stores are dispersed throughout the city. The food stores located nearest the planned South Supercenter Expansion includes Winco Foods and Raley's (location at the corner of Notre Dame Boulevard and Skyway). Additionally, a Foodmaxx and the Chico Grocery Outlet are located near the planned South Supercenter, but they are located on the west side of Highway 99. The stand-alone convenience stores are discussed further in a subsequent section.

Market Niche

Based upon Sedway Group's fieldwork, it appears that the existing food stores can be classified into one of three major store categories. These categories, and the corresponding stores, are as follows:

- ***Major Grocery Stores*:** Albertson's, Chico Grocery Outlet, Foodmaxx, two Raley's stores, three Safeway stores, and Winco Foods;
- ***Niche Markets:*** Asian Market, Chico Natural Foods, and S&S Produce; and
- ***Stand-alone Convenience Stores:*** 5th and Ivey Liquor, three 7-Eleven stores, ABC Market, Bear Country Market, California Park Market, Chinca's Market, Laurel Street Grocery, Nord Avenue Market, Quick Check Market, Tony's Market, U.S. Market, and Warner Street Grocery.

The stores were classified in this manner for the following reasons. Albertson's, Chico Grocery Outlet, Foodmaxx, Raley's, Safeway, and Winco Foods are traditional full-service grocery stores selling the full complement of expected food and related items. They are also located in neighborhood- or community-oriented shopping centers. The niche market stores, Asian Market, Chico Natural Foods, and S&S Produce, sell many of the same items as traditional stores, but are classified as niche markets largely because of their tendency toward specialized goods and services.

It should be noted that both Winco and Food Maxx are considered price-impact warehouse stores, i.e., large format discount grocery stores. In addition, Winco and Food Maxx have an array of packaged and prepared Latino-themed food products not available at the more traditional grocery stores. The Grocery Outlet differentiates itself by offering "great deals to its customers by helping consumer packaged goods companies remarket their product overruns, package changes, and overstocks."[7] The following store descriptions include store size, which was identified by Sedway Group and verified by the City of Chico Planning Department.

Major Grocery Stores

Winco: The Winco is 79,120 square feet and located at the intersection of 20th Street and Forest Avenue approximately 0.4 miles north of the planned South Supercenter expansion. Winco is a discount warehouse offering bulk items, fresh meat, fresh and frozen seafood, prepared pizza, Hispanic-themed items, a limited amount of housewares, bakery goods, and the traditional range of grocery goods. Winco is a 24-hour, stand-alone store, located immediately east of the Chico Mall.

Raley's: There are two Raley's stores located in Chico as follows:

- **2485 Notre Dame Boulevard:** The Raley's grocery store is 61,000 square feet and located at the intersection of Notre Dame Boulevard and Sky Way approximately 0.8 miles southeast of the

[7] www.Groceryoutlets.com

planned South Supercenter expansion. The store is a full-service grocery store offering one-hour photo, video rentals, pharmacy, banking, and some housewares and general merchandise goods. Additional tenants located in the center include Ross, Sprint, beauty supply, tanning, cleaners, Laundromat, UPS, dental services, and Papa Murphy's. At the time of Sedway Group's fieldwork there were no identifiable vacant storefronts.

- **211 W. East Avenue:** The Raley's grocery store is 64,221 square feet and located in the Orchard Shopping Center at the intersection of Esplanade and East Avenue. The store is approximately 4.8 miles northwest of the planned South Supercenter expansion. The store is a full-service grocery store offering pharmacy, banking, many prepared food options (Chinese and café), fresh seafood counter, organic produce, and coffee stand. Additional tenants located in the Orchard Shopping Center include Blockbuster, Togo's, Baskin Robbins, and Les Schwab Tires. At the time of Sedway Group's fieldwork there were no identifiable vacant storefronts.

Foodmaxx: The Foodmaxx (55,458 square feet) is a discount warehouse, located in the Chico Crossroads shopping center at 2051 Whitman Avenue, offering bulk items, Hispanic-themed goods, fresh meat, and the traditional range of grocery goods. Foodmaxx is located approximately 1.0 mile west of the planned South Supercenter expansion. Additional tenants located at Chico Crossroads include Play It again Sports, World Market, Office Depot, Bed Bath and Beyond, Circuit City, Blockbuster Video, Barnes and Noble, Petco, H&R Block, a hair salon, and Cost Plus. The Foodmaxx is open 24 hours. There were no identifiable vacancies at the time of the fieldwork.

Grocery Outlet: The smallest of all the major grocery stores surveyed, the Grocery Outlet is 16,800 square feet and located at 396 E. Park Avenue approximately 1.5 miles to southwest of the planned South Supercenter expansion. The Grocery Outlet is located in a non-retail area surrounded primarily by light industrial buildings. The Grocery Outlet is a stand-alone building; other nearby users include a bakery thrift shop, bait and tackle store, and Tile City.

Safeway: There are three Safeway stores located in Chico as follows:

- **720 Mangrove Ave:** This 49,117-square-foot Safeway is located in the Park Plaza Shopping Center at the intersection of Mangrove and Memorial Way. The store is approximately 2.9 miles west of the planned South Supercenter expansion. The store offers the typical range of food sales consistent with a full-service grocery store including deli, fresh produce, and fresh meat counter. However, the store also includes a Starbucks coffee hut, prepared foods, and dining area. Other tenants in the Park Plaza center include UPS, Readmore bookstore, Hobby Town, several eating establishments, Payless Shoes, cigarette store, General Nutrition Center, Laura's Wigs, Clifford's, and American Career Society. At the time of the fieldwork, Sedway Group observed two vacancies; however, repeated telephone calls to the listing real estate agent were not returned.

- **1366 East Avenue:** This Safeway is 54,990 square feet and is located in the East Avenue Market Place shopping center at the intersection of Mariposa and East avenues. The store is approximately 4.1 miles northwest of the planned South Supercenter expansion. The store offers the typical range of food sales consistent with a full-service grocery store including pharmacy, deli, florist, bank, bakery, fresh seafood counter, prepared foods, and dining/sitting area. Other tenants in the East Avenue Market Place include UPS, cleaners, barber, pizza, espresso, thrift store, checking cashing, liquor store, and tanning salon. At the time of the fieldwork, Sedway Group observed a single out pad under construction.

- **1016 West Sacramento Ave:** This Safeway is approximately 25,000 square feet and located in a neighborhood shopping center at the intersection of Nord and Sacramento avenues. The

Safeway is approximately 4.5 miles west of the planned South Supercenter expansion. The store offers a typical range of food sales consistent with a full-service grocery store including a deli, bakery, prepared foods, fresh produce, and fresh meat counter. Tenants in the center include Subway, Chinese and Japanese restaurants, Walgreen's, yogurt, Shell gasoline, and florist. At the time of the fieldwork, Sedway Group identified one vacancy in the shopping center.

Albertson's: The 42,630-square-foot Albertson's is located at146 W. East Avenue in the Chico Town and Country center and is a full-service grocery store offering one-half hour photo, banking center, video rental, fresh seafood, limited meat counter, Starbucks and fresh bakery. Albertson's is approximately 4.7 miles northwest of the planned South Supercenter expansion. Additional tenants located in the center include All American Furniture, Weight Watchers, Adecco, cleaners, barber, Lucky Imports, gift shop, hair salon, and Bicycle Wheel. At the time of Sedway Group's fieldwork there were approximately four vacant storefronts; however, repeated telephone calls to the management company were not returned.

Niche Markets

S&S Produce: S&S Produce is 8,256 square feet and located at 1924 Mangrove Avenue approximately 4.0 miles northwest of the planned South Supercenter expansion. S&S Produce is a smaller grocery store specializing in organic goods and prepared foods. The store offers a fresh butcher shop, fresh seafood, organic produce, vitamins, bulk oats and grains, and a health book section. In addition to the prepared foods at the butcher counter, there is a small take out window specializing in barbeque-style food. The store is open from 6 a.m. until 9 p.m. and is closed on Sunday.

Chico Natural Foods: The Chico Natural Foods store is 5,760 square feet and located on the southern border of Downtown Chico on the west side of Main Street between 8th and 9th streets. Chico Natural Foods is approximately 2.5 miles west of the planned South Supercenter expansion. Chico Natural Foods is a smaller grocery store specializing in organic produce, dry goods, vitamins, and aromatherapy. The store includes a dairy case, some frozen foods, but no meat or poultry. The store offers senior discount of four percent and an annual membership, but one is not required for shopping there.

Asian Market: Smaller than all of the other food stores, the Asian Market store is located in a small office park on Nord Avenue near Stewart Street. The Asian Market has very little signage or identification indicating its location or goods. The Asian Market specializes in Asian-themed foods and sundries, some frozen goods, and a small selection of produce.

Market Performance

Sedway Group obtained aggregate sales tax data from the City of Chico Finance Department for the aforementioned major grocery stores (see Exhibit 16). After adjusting for total sales, the major grocery stores and niche markets (aggregated) average estimated sales of $393 per square foot for fiscal year 2003/04. This is just slightly above the 2004 national median for supermarkets published by the Urban Land Institute of $390 per square foot, but significantly lower than the western region median of $482.[8] These sales suggest that in 2004, Chico food stores in aggregate were performing consistently with the national median, but were under-performing relative to the regional median. Without access to confidential individual store sales data it is difficult to identify which stores might be contributing most to this underperformance. However, based upon the fieldwork findings it

[8] Median sales of supermarket tenants in community shopping centers as defined by the Urban Land Institute's "Dollars and Cents of Shopping Centers: 2004."

appears the very likeliest underperformers include Grocery Outlet and Asian Market. Other relative underperformance could possibly come from one or more conventional store.

Wal-Mart South Supercenter Store Impacts

The preceding analytical approach suggested a maximum sales impact on the City of Chico food stores of $8.3 million. This level of sales is equivalent to support for approximately 15,000 to 19,000 square feet of food store space.[9] The cumulative retail demand estimates due to population growth documented in Exhibit 13 indicate that $8.3 million of Chico food sales will be generated by new growth in less than two years following the assumed 2008 full-year operations of the South Supercenter Store. This time period could be expedited if the City of Chico increases its share of secondary market area sales or if sales increase due to the added attraction of the South Supercenter Store. However, if stores cannot withstand a temporary downturn in sales, it is possible that one existing conventional grocery or, less likely, a price-impact warehouse store, may close. The niche markets are quite distinct from a Wal-Mart Supercenter and are not believed to be impacted by the South Supercenter Store.

That said, the stores most likely to experience the greatest risk of initial competition from the South Supercenter Store include the existing Safeway stores, due to their 24-hour operations, the Winco, due to its 24-hour operations as well as its discount orientation, and the Food Maxx, also due to its discount orientation. Currently, only the Safeway stores, Food Maxx, and Winco are open 24 hours a day in Chico. Thus, any after hours South Supercenter Store food sales that occur to the detriment of existing food stores could impact these stores. The Winco and Food Maxx are susceptible to negative impacts from the South Supercenter Store due to their comparable budget orientation (i.e., price-impact warehouse stores). However, they are both relatively well positioned given their established discount orientation and strong complement of products targeted to the Latino market. In addition, Winco in particular is well experienced with the notion of competing with Wal-Mart Supercenters. For example, in Tracy, California, an existing Wal-Mart Discount Store is proposing to expand to a Supercenter Store while Winco is simultaneously trying to open a new store within three blocks of the Wal-Mart Supercenter. This suggests a corporate philosophy of head to head competition with Wal-Mart Supercenters, and an underlying belief in market coexistence.

COMPETITIVE GENERAL MERCHANDISE STORE SALES

The adjusted leakage analysis indicated that in 2008 dollars, a maximum of $11.1 million in sales may be diverted away from existing general merchandise stores in the City of Chico, comprising only 3.1 percent of estimated 2008 general merchandise sales of $351.5 million (see Exhibit 11).[10] This level of diverted sales and the associated percentage share of sales assume the South Supercenter Store achieves full stabilization in 2008, which is unlikely.

There are several major general merchandise stores existing in Chico. These include the following: Big Lots, JC Penney, K-Mart, Costco, Sears, and Target. Each of these stores has already withstood the competitive influence of the existing Wal-Mart Discount Store, which is within one-half mile of all of these stores. While the South Supercenter Store will have more floor space devoted to general merchandise sales, the overall type of goods will likely not change. Thus, the South Supercenter Store will only be more competitive than the Discount Store by virtue of its increased sales rather than any enhanced mix of goods.

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[9] Assuming sales performance at the national and regional averages of $390 and $482 cited in Exhibit 16, respectively, increased at 3.0 percent a year to $439 and $542 in 2008 dollars.

[10] This sales figure excludes the influence of the Supercenter Store sales.

Market Performance

Sedway Group obtained aggregate sales tax data from the City of Chico Finance Department for the existing general merchandise stores, excluding the existing Wal-Mart (see Exhibit 16). After adjusting for total sales, the general merchandise retailers averaged sales of $248 per square foot. This is well above the national median for discount department stores published by the Urban Land Institute of $184 per square foot and above the western region median of $228.[11] Using these figures as benchmarks, Chico's general merchandise stores were performing above the regional median in the amount of $12.0 million and above the national median by $40.0 million in 2008 dollars.

Wal-Mart South Supercenter Store Impacts

The preceding analysis estimated a maximum sales impact on these and other City of Chico general merchandise stores of $11.1 million. This level of sales is equivalent to support for approximately 43,000 to 54,000 square feet of general merchandise store space.[12] However, this level of sales is also equivalent to the low end of the estimated major general merchandise over-store performance. Therefore, these stores should be able to sustain a temporary reduction in sales, at least until new demand is generated by population growth. The cumulative retail demand estimates due to population growth documented in Exhibit 13 indicate that $11.1 million of Chico general merchandise sales will be generated by new growth within three years following the assumed 2008 full year operation of the South Supercenter Store. Sedway Group believes the existing stores should be able to sustain a temporary downturn for up to this length of time.

COMPETITIVE STAND-ALONE CONVENIENCE STORE SALES

At the request of the City of Chico, Sedway Group visited many stand-alone convenience stores in Chico to qualitatively assess their performance, to determine their market niche, and to assess the degree to which they may actually incur impacts resulting from the South Supercenter expansion. Sedway Group, with assistance provided by City of Chico staff, identified existing stand-alone convenience stores via store location information provided by InfoUSA. The list of competitive grocery stores includes the following existing stores in Chico: 5th and Ivey Liquor, three 7-Eleven stores, ABC Market, Bear Country Market, California Park Market, Chinca's Market, Laurel Street Grocery, Nord Avenue Market, Quick Check Market, Tony's Market, U.S. Market, and Warner Street Grocery. Sedway Group attempted to obtain aggregate taxable sales data from the City of Chico Finance Department for these stores; however the information could not be provided due to confidentiality issues.

Store Locations

The stand-alone convenience stores included in this inventory are identified on the map in Exhibit 15. As Exhibit 15 indicates, the stand-alone convenience stores are dispersed throughout Chico, but concentrated primarily near downtown and the Chico State campus. Of the stores included in this analysis, none are located within less than 1.8 miles of the planned South Supercenter expansion. All of the stores listed are either west or northwest of the planned South Supercenter expansion.

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[11] Median sales of discount department store tenants in community shopping centers as defined by the Urban Land Institute's "Dollars and Cents of Shopping Centers: 2004." Most of Chico's general merchandisers do have a discount orientation.

[12] Assuming sales performance at the national and regional averages of $184 and $228 cited in Exhibit 16, respectively, increased at 3.0 percent a year to $207 and $257 in 2008 dollars.

Market Niche

The stores were classified as stand-alone convenience stores for the following reasons: the stores are smaller format; they are located primarily in close proximity to residential neighborhoods; and they are convenience-oriented. The goods offered are neighborhood-oriented in nature and do not directly compete with the broad draw of Wal-Mart. While the stand-alone convenience stores may sell some of the same items as Wal-Mart (primarily drinks, snacks, and some small household goods), they are providing goods to the residents of the immediate area on a convenience basis.

Wal-Mart South Supercenter Store Impacts

Sedway Group believes that existing City of Chico stand-alone convenience stores are not competitive with the planned Wal-Mart expansion and will not experience any short- or long-term negative impacts due to the South Supercenter Store. Each of these stores has already withstood the competitive influence of the existing Wal-Mart Discount Store. Further, the existing stand-alone convenience stores are well positioned relative to existing residential neighborhoods and have well-established market niches. Although many of the stand-alone convenience stores appear marginal, any operational changes are not expected to have much to do with the opening of the South Supercenter Store.

V. CUMULATIVE IMPACTS

An additional charge of this study was to analyze the South Supercenter store in the context other Wal-Mart plans in Chico. This includes a new Supercenter north of Chico, in the Northwest Chico planning area. This store is also undergoing the environmental review process, with an Environmental Impact Report (EIR) being prepared under the auspices of Design, Community & Environment (DC&E). This chapter also includes analysis of select other planned retail projects, especially in the City of Chico (primary market area).

IDENTIFIED PROJECTS

Primary Market Area

Sedway Group identified selected retail projects of significance in the City of Chico. The selected retail projects are identified in Exhibit 17 and include the planned North Supercenter, a Costco expansion, and a planned Kohl's.

The North Supercenter Store would be located west of Highway 99 and east of Esplanade in Butte County, and would require annexation into the City of Chico. It is 0.5 miles northwest of the City of Chico, but within the City's sphere of influence. The proposed North Supercenter will result in an addition of 231,115 square feet of store space (inclusive of the outdoor garden center). Approximately 58,000 square feet of this space will be dedicated to food sales, as the North Supercenter will include a full-service grocery component (see Exhibit 18).

In addition, the existing Costco located along Whitman Avenue is planning to tear down its existing building and rebuild a new, larger building on the same site, resulting in a net increase of 25,687 square feet of retail space. The planned use for this incremental space is not identified. The City is reviewing the Environmental Impact Report for this project and approvals are expected in mid-2006. Completion of the new Costco building is expected in mid-2007. Furthermore, Kohl's is constructing an approximately 96,077-square-foot store with an additional 38,086 square feet of retail space in four pads.

Secondary Market Area

Within the secondary market area, Sedway Group identified the following planned retail projects: Wal-Mart Supercenter expansion in the City of Willows (Glenn County), a Wal-Mart Supercenter expansion in the City of Red Bluff (Tehama County), and a new retail center in the Town of Paradise (Butte County) (see Exhibit 17). The Willows Supercenter Store is a planned expansion of the existing Willows Discount Store. If approved, the Willows Supercenter expansion will result in an incremental addition of 109,929 square feet of store space. The Willows Supercenter Store will include a full-service grocery component, which is not present in the existing Willows Discount Store. If approved, the Red Bluff Supercenter Store is a planned expansion of the existing Red Bluff Discount Store. The Red Bluff Supercenter expansion will result in an incremental addition of approximately 96,100 square feet of store space. The Red Bluff Supercenter Store will also include a full-service grocery component, which is not present in the existing Red Bluff Discount Store. Both the Willows and Red Bluff Wal-Mart stores are currently in the process of environmental review.

A 60-acre site adjacent to the Town of Paradise has been approved for a General Plan Amendment and Zone Change to allow for a retail center of approximately 290,000 square feet. According to

the City of Paradise Planning Department the project is in the approvals process with a conceptual layout prepared for the General Plan Amendment. A Wal-Mart Supercenter is proposed as the anchor store, but no other potential tenants have been identified. The project site will require approval for annexation into the Town of Paradise.

PRIMARY MARKET AREA STORE SALES ANALYSIS

Proposed North Supercenter Store

The estimation of sales by category for the North Supercenter Store is presented in Exhibit 18. The North Supercenter store is anticipated to open in 2008. Assuming the same $460 per square foot average sales for Wal-Mart cited in Chapter 2 of this analysis, the North Supercenter Store sales are forecasted in 2008 to total $106.3 million, assuming store stabilization at this time. Stabilized sales are not expected to occur the first year of store operations, but rather the second or third year, which is typical of new retail operations. However, for analytical purposes, these sales are assumed to occur in 2008. As the North Supercenter Store will be new, all these sales will comprise new sales. Exhibit 18 identifies estimates of sales by type of category, derived from published information as well as information provided by PacLand, the project developer. The results indicate that the North Supercenter store will have the potential to generate up to $69.8 million in new general merchandise sales, $26.7 million in new food sales, and $9.8 million in other new sales, comprising the total new sales estimate of $106.3 million.

Of these new sales, $95.7 million are estimated to be generated by primary and secondary market area residents, per the previous market split assumptions. All other sales new to Wal-Mart are expected to originate from outside this area, i.e., the tertiary market area. The new sales in general merchandise and food sales attributable to primary and secondary market area residents totals $86.9 million (see Exhibit 19).

Utilizing the same analytic approach discussed in Chapter 3, Sedway Group has estimated the maximum impact of the North Supercenter Store on existing retailers. This approach is analytically displayed in Exhibit 20, which takes into account the following factors for the two relevant retail sales categories:

- New South Supercenter Store sales by major category;
- Estimated new North Supercenter Store sales by major category generated by primary and secondary market area residents;
- Chico's new baseline retail sales after development of the South Supercenter Stores;
- The primary and secondary market areas' new baseline retail sales after development of the South Supercenter Store;
- Chico's share of primary and secondary market area sales after development of the South Supercenter Store;
- The share of North Supercenter Store sales estimated, at maximum, to be diverted from existing City of Chico retailers upon stabilization; and
- The minimum net new sales achieved by the North Supercenter Store not diverted away from existing City of Chico retailers.

These results indicate that, at worst, $49.2 million in sales captured by the North Supercenter Store upon stabilization will comprise sales diverted away from existing City of Chico general merchandise and food retailers. The diverted sales total is equal to $39.6 million in diverted general merchandise sales and $9.6 million in diverted food stores sales. The balance of new general merchandise and

food sales, comprising $47.4 million, is the minimum estimate of North Supercenter Store sales new to Chico. Additional sales will also occur in the "other" category. Although most of Wal-Mart's sales are attributed to the general merchandise retail category, some of those sales will likely be spread among other retail categories, including apparel, home furnishings and appliances, and "other" retail. Therefore, the economic impacts in the general merchandise category are likely overstated.

Proposed Costco Expansion

Costco sales estimates are detailed in Exhibit 21. According to the Costco Wholesale Corporation. 2004 Form 10-K, average sales per square foot of all Costco stores are $862 per square foot. Adjusted for inflation, the year 2008 equivalent is $942 per square foot. Total new sales resulting from the 25,687-square-foot expansion are estimated to total $24.2 million. Costco sales are classified by the State of California, Board of Equalization as general merchandise, the same as Wal-Mart. However, as with Wal-Mart, a portion of Costco floor space is devoted to food sales. Based upon public information, Sedway Group estimates the allocation of space between general merchandise and food sales at 60/40 percent. Sedway Group further estimates that the expansion will result in $14.5 million in general merchandise sales and $9.7 million in food sales in year 2008 dollars. Like Wal-Mart, although most of Costco's sales are attributed to the general merchandise retail category, some of those sales will likely be spread among other retail categories, including apparel, home furnishings and appliances, and "other" retail. Therefore, the economic impacts in the general merchandise category are likely overstated.

Of these new sales, assuming the same market area demand allocations applied to Wal-Mart, $21.8 million are estimated to be generated by primary and secondary market area residents. All other sales new to Costco are expected to originate from outside this area. The new sales attributable to primary and secondary market area residents totals $13.1 million for general merchandise and $8.7 million for food stores (see Exhibit 22).

Utilizing the same analytic approach discussed in Chapter 3 and the South Supercenter Expansion in the preceding section, Sedway Group has estimated the maximum impact of the Costco expansion on existing retailers. This approach is analytically displayed in Exhibit 22, which takes into account the development of the North and South Supercenter stores. These results indicate that, at worst, $11.7 million in sales captured by the Costco expansion upon stabilization will comprise sales diverted away from existing City of Chico general merchandise and food retailers. The diverted sales total is equal to $8.2 million in diverted general merchandise sales and $3.5 million in diverted food stores sales. The balance of new sales, comprising $12.5 million, is the minimum estimate of Costco expansion sales new to Chico, representing $6.3 million in general merchandise and $6.2 million in food stores categories.

Proposed Kohl's

According to the Kohl's 2004 Annual Report, average sales per square foot of all Kohl's stores are $238 per square foot. Adjusted for inflation, the year 2008 equivalent is $260 per square foot. Total new sales resulting from the new store are therefore estimated to total $25.0 million. Kohl's sales are classified by the State of California, Board of Equalization as apparel. As detailed in Exhibit 7, Chico is projected in 2008 to have attracted $25.6 million in the apparel category. However, the combined primary and secondary market area is projected to experience significant apparel leakage of $39.0 million in 2008 (see Exhibit 9). Therefore Kohl's is not projected to have any detrimental effect on existing primary or secondary market area retailers. The additional 38,086 square feet of retail space planned pads adjacent to Kohl's is also not anticipated to have a negative effect on existing retailers, as the combined primary and secondary market areas have demonstrated leakage

in several additional key retail categories (home furnishings and appliances and restaurants) and Chico is a major regional shopping hub.

PRIMARY MARKET AREA CUMULATIVE SALES IMPACTS

South and North Supercenter Stores

Exhibits 23 and 24 summarize the maximum diverted sales impacts resulting from development of the South and North Supercenter stores. These results indicate that, at worst, $68.5 million in sales will comprise sales diverted away from existing City of Chico general merchandise and food retailers. The diverted sales impact estimate is $50.6 million on general merchandise stores, and $17.9 million on food stores.

General Merchandise. Net of the over performance in general merchandise (referenced in Chapter 4 and detailed in Exhibit 16) of $12.0 to $40.0 million in 2008 dollars, the maximum sales diversion of $50.6 million is reduced to $10.7 to $38.6 million. Chico is projected to require two and one half or more years to generate this level of additional demand, which is equivalent to the support of roughly 42,000 to 187,000 square feet of space.[13] Thus, it appears at minimum one mid-sized store in Chico is at risk of closing, with the maximum potential of three or more stores, depending upon their size.

Food Stores. The estimated $17.9 million in diverted food store sales is equivalent to 33,000 to 41,000 square feet of supportable space.[14] Population growth is anticipated to generate this level of new food sales demand in Chico in three to four years. If the existing stores are not strong enough to withstand a potential three- to four-year downturn in sales, then one existing conventional grocery or price-impact warehouse store may close.

South and North Supercenters, and Costco Store

Exhibits 23 and 24 summarize the maximum diverted sales impacts resulting from development of the South and North Supercenter stores and the Costco expansion. These results indicate that, at worst, $80.2 million in sales will comprise sales diverted away from existing City of Chico general merchandise and food retailers. The diverted sales impact estimate is $58.9 million on general merchandise stores, and $21.3 million on food stores.

General Merchandise. Net of the referenced over performance ($12.0 to $40.0 million in 2008 dollars), the maximum sales diversion of $58.9 million is reduced to $18.9 to $46.8 million. Chico is projected to require four or more years to generate this level of additional demand, which is equivalent to the support of roughly 74,000 to 226,000 square feet of space. Thus, it appears at minimum one mid-sized store is at risk of closing, with the maximum potential of three or more stores, depending upon their size.

Food Stores. The estimated $21.3 million in diverted food store sales is equivalent to around 39,000 to 49,000 square feet of supportable space. If the existing stores are not strong enough to withstand a potential two- to three-year downturn in sales, then one existing conventional grocery or

[13] This assumes the national ($184) and regional ($228) general merchandise store sales medians cited in Exhibit 16, inflated 3.0 percent per year to 2008 dollars, resulting in $207 per square foot for the national median and $257 per square foot for the regional median.

[14] This assumes the national ($390) and regional ($482) food store sales medians cited in Exhibit 16, inflated 3.0 percent per year to 2008 dollars, resulting in $439 per square foot, for the national median and $542 per square foot for the regional median.

price-impact warehouse store may close. This could instead include two of the city's smaller more conventional stores. It is unlikely any niche market will close due to these impacts.

These cumulative impact figures are conservative and are presented as an analytical benchmark. They are considered conservative for several reasons. Foremost, they assume the maximum diversion away from existing retailers upon stabilization of the South and North Supercenter Store as well as Costco. Thus, they do not take into account any prospective market corrections or enhancements following the introduction of the Supercenters and the expanded Costco into the marketplace, including competitive retailer repositioning.

SECONDARY MARKET AREA CUMULATIVE SALES IMPACTS

The identified projects in the secondary market area include two proposed existing Wal-Mart Discount Store expansions to Supercenters and a retail development in Paradise with a proposed Wal-Mart Supercenter anchor tenant. The Wal-Mart Supercenters may dilute some demand away from Chico retailers given the broader range and mix of non-food goods that will be available closer to home, reducing their need to shop in Chico. However, this would likely not include food stores, as food purchases are typically more local-oriented unless they are wrapped in with a larger shopping trip for other goods. Therefore, the food offerings at these additional stores are likely to have no incremental impacts on food stores in the primary market area. Even with a Supercenter available in their local market, there will still be a strong need to shop for more regional goods in Chico. Thus, any incremental negative effects attributable to these projects are likely to be minimal in the primary market area, mitigated by new or expanded retailer demand and the previously analyzed population growth.

The project in Paradise is likely to enter the market substantially after any of the other identified development projects. Moreover, as this project will be located in Paradise, it will primarily serve the retail shopping needs of Paradise residents. Paradise residents are included in the secondary market area analyzed in this study, and therefore are considered part of the identified demand base. The location of a Wal-Mart Supercenter at the shopping center, if approved, may reduce some of the secondary market area demand for the North Wal-Mart store, but until the Wal-Mart is confirmed or more information is available regarding the other prospective tenants, it is difficult to truly assess the likely impacts of this development on the Chico primary market area. There is leakage in the combined primary and secondary market areas that these stores could fill. Therefore, based upon the current project information available, it is anticipated that this project will not have a significant impact on Chico's retail market or the identified cumulative impacts analysis.

VI. URBAN DECAY DETERMINATION

The purpose of this chapter is to assess the degree to which development of the South Supercenter Store will or will not contribute to urban decay in the City of Chico. This includes impacts associated with the cumulative impacts of the South Supercenter store and other planned primary market area retail developments. Urban decay could theoretically result from development of the South Supercenter Store and other known primary market area planned retail developments through the closure of other stores due to negative economic impacts and physical deterioration of these properties. This chapter discusses market findings relative to what these impacts might be and their blight implications.

STUDY DEFINITION OF URBAN DECAY

For the purpose of this study, urban decay is defined as physical deterioration that is so prevalent and substantial it impairs the proper utilization of affected real estate or the health, safety, and welfare of the surrounding community. Physical deterioration includes, but is not limited to, abnormally high business vacancies, abandoned buildings and industrial sites, boarded doors and windows, parked trucks and long term unauthorized use of properties and parking lots, extensive gang or offensive graffiti painted on buildings, dumping of refuse or overturned dumpsters on properties, dead trees or shrubbery and uncontrolled weed growth or homeless encampments.

APPROACH TO DETERMINING URBAN DECAY POTENTIAL

Sedway Group engaged in several tasks to assess the probability of urban decay ensuing from development of the South Supercenter Store or the identified cumulative store impacts. These tasks revolved around assessing the potential for closed Chico store spaces, if any, to remain vacant for a prolonged period of time or to be leased to other retailers within a reasonable marketing period. Several commercial real estate brokers active in Chico were contacted regarding the health of the Chico retail market and the depth of prospective demand for retail space. The purpose of this research was to determine if sufficient retailer demand exists to absorb vacated space in the event existing Chico retailers close due to the negative impacts of the South Supercenter Store and the other identified planned projects.

RETAILER DEMAND IN THE CITY OF CHICO

Sedway Group conducted telephone interviews with four real estate brokers experienced in the Chico market, with experience dating back 25 years.[15] The brokers have experience throughout Chico, with some specializing in downtown and others specializing in the general region as well, or with certain types of retailers (e.g., big box). All have experience working with retailers locating in Chico and have an understanding of the regulatory issues involved in siting commercial development. Two of the brokers interviewed were highly recommended by both City staff and other real estate professionals in Chico for their experience and knowledge of the local market. In the course of the interviews, the brokers shared some proprietary information with Sedway Group. As a professional

[15] These interviews were conducted in late-2004 and early-2005. To retain confidentiality, the names and contact information are maintained in Sedway Group's project records.

courtesy, and upon request, the overall gist of this information is summarized below, but not the detail.

The above anecdotal broker information is supported by the results of the combined primary and secondary leakage analysis (see Exhibits 8 and 9). The combined primary and secondary leakage analysis shows leakage in several retail categories. Those retail categories with projected leakage include apparel stores ($39.0 million), eating and drinking places ($29.7 million), and home furnishings and appliances ($8.4 million).

Market Characterization

The real estate brokers contacted for this study all spoke very favorably about the Chico retail market. They indicated that the market is strong, growing, and has the attention of many national retailers. In all cases, the brokers generally characterized the market as "constrained," indicating there is not enough land or acceptable space to meet retailer demands. Meanwhile, the brokers anticipate the market will continue to grow, with new residential development boosting the market outlook.

The brokers generally believe the South Supercenter expansion in particular will have no negative impact in the Chico retail market or downtown Chico. The planned South Supercenter expansion is located in the southeast area of Chico, which is designated for regional retail uses and will not impact existing grocery stores or general merchandise retailers. In addition, the brokers confirmed the more analytical findings of the leakage analysis, which is that the City of Chico is the regional hub for retail sales in the three-county area.

Retailer Interest

According to the real estate brokers, many national retailers, both big box and smaller format, have expressed interest in locating in Chico. These include mid-sized and big box retailers not already in the market. Examples of the types of retailers include sporting goods, grocery, general merchandise, and electronics. Kohl's recently submitted an application to the City of Chico for consideration of a site near the planned South Supercenter expansion. Further, existing retailers have expressed interest in expanding their current operations but are limited because of existing site constraints.

Retenanting Potential

The real estate brokers collectively believe that if any major existing retail operations close due to the introduction of the South Supercenter Store, then it would be possible to backfill or even redevelop the space without damaging the Chico retail market. Their beliefs are supported by the retailer inquiries they frequently receive and the retail market activity. A recent example of retail retenanting is the site of the former Home Base on Whitman Avenue. The former Home Base building was divided into three spaces and occupied by Cost Plus, Bed Bath and Beyond, and Ashley Furniture Homestore. Another example of reuse is the former Fred Meyers building which was demolished to build the new Lowe's. While such backfilling might take up to two years, to facilitate tenant outreach, business negotiations, tenant improvements, and ultimately store opening (all of these steps are time-consuming regardless of location), they have a strong belief that it would occur in the short-term. While the brokers were asked specifically regarding the impacts of the South Supercenter store, there appears to be sufficient demand to counter any impacts of the North Supercenter store and the Costco expansion as well. In fact, opportunities for new tenants to enter a market like Chico will help keep the market current, ensuring its maximum ability to meet consumer demands. In addition, market vacancies provide an opportunity for existing tenants to relocate and/or expand to better serve their customers.

URBAN DECAY CONCLUSION

Sedway Group's retail market research indicated that the retail market in Chico is strong and getting stronger. This suggests that any retail spaces vacated as a result of the Supercenter Store and other identified cumulative impacts will be successfully retenanted, including by tenants new to Chico and the regional market. This retenanting will only serve to benefit the market and expand local and regional shopping opportunities. Thus, Sedway Group concludes that the development of the Supercenter Store and the identified cumulative impacts will not contribute to urban decay in Chico.

ASSUMPTIONS AND GENERAL LIMITING CONDITIONS

Fieldwork for this study was completed in July 2004. Market research was conducted in late-2004 and early-2005. Accordingly, CBRE Consulting assumes no responsibility for market events pertinent to the primary or secondary market area occurring after that time.

Sedway Group has made extensive efforts to confirm the accuracy and timeliness of the information contained in this study. Such information was compiled from a variety of sources, including interviews with government officials, review of City and County documents, and other third parties deemed to be reliable. Although Sedway Group believes all information in this study is correct, it does not warrant the accuracy of such information and assumes no responsibility for inaccuracies in the information by third parties. We have no responsibility to update this report for events and circumstances occurring after the date of this report. Further, no guarantee is made as to the possible effect on development of present or future federal, state or local legislation, including any regarding environmental or ecological matters.

The accompanying projections and analyses are based on estimates and assumptions developed in connection with the study. In turn, these assumptions, and their relation to the projections, were developed using currently available economic data and other relevant information. It is the nature of forecasting, however, that some assumptions may not materialize, and unanticipated events and circumstances may occur. Therefore, actual results achieved during the projection period will likely vary from the projections, and some of the variations may be material to the conclusions of the analysis.

Contractual obligations do not include access to or ownership transfer of any electronic data processing files, programs or models completed directly for or as by-products of this research effort, unless explicitly so agreed as part of the contract.

This report may not be used for any purpose other than that for which it is prepared. Neither all nor any part of the contents of this study shall be disseminated to the public through publication advertising media, public relations, news media, sales media, or any other public means of communication without prior written consent and approval of Sedway Group.

APPENDIX A: EXHIBITS

EXHIBIT 1
BREAKDOWN OF SALES FLOOR AREA BY CATEGORY
EXISTING DISCOUNT STORE AND SUPERCENTER EXPANSION

Floor Area	Existing Discount Store Sq. Ft. (1)	Planned Supercenter Store Sq. Ft. (2)	Incremental Square Feet
Dedicated to Grocery Sales and Stockroom			
Grocery Sales	3,000	36,197	
Stockroom	980	19,532	
Sub-total	3,980	55,729	51,749
Dedicated to General Merchandise and Stockroom			
General Merchandise Sales	90,384	138,402	
Office/Stockroom	29,528	24,139	
Sub-total	119,912	162,541	42,629
Dedicated to Other Uses			
Other	1,997	5,175	
Outdoor Garden Center	5,512	20,602	
Sub-total	7,509	25,777	18,268
Total Building Area	**131,401**	**244,047**	**112,646**

Notes
(1) Data provided by PacLand.
(2) Data provided by PacLand. Estimated distribution of stockroom space based on Sedway Group assumptions.

Sources: PacLand; and Sedway Group.
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EXHIBIT 2
ESTIMATE OF SALES PER SQUARE FOOT
ALL WAL-MART STORES
FISCAL YEAR 2004, 2005, AND 2008 ESTIMATE

All Wal-Mart Stores (1)	
Net Sales	$174,200,000,000
Total Square Feet	422,910,170
Average Sales Per Square Foot 2004 Dollars (2)	$412
All Wal-Mart Stores (3)	
Net Sales	$191,826,000,000
Total Square Feet	455,537,000
Average Sales Per Square Foot 2005 Dollars (2)	$421
Average Sales per Square Foot (2005$s)	$421
Average Sales per Square Foot (2008$s) (4)	$460

Notes
(1) United States Securities and Exchange Commission, Wal-Mart Stores, Inc. 2005 Form 10-K.
(2) Average sales per square foot are spread across all space evenly although not all space is devoted exclusively to sales, e.g., stockroom and office. This is the most efficient approach to estimating average sales per square foot.
(3) United States Securities and Exchange Commission, Wal-Mart Stores, Inc. 2005 Form 10-K.
(4) Adjusted for inflation. Inflation estimated to be 3.0% per year.

Sources: United States Securities and Exchange Commission, Wal-Mart Stores, Inc. 2004 and 2005 Form 10-K; U.S. Department of Labor, Bureau of Labor Statistics; and Sedway Group.
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EXHIBIT 3
INCREMENTAL NEW SALES
PROPOSED WAL-MART SUPERCENTER STORE EXPANSION
COMPARED TO EXISTING DISCOUNT STORE
2008 DOLLARS

	Size (Sq. Ft.) (1)	Average Sales Per Sq. Ft. (2)	Estimated Total Sales
Existing Wal-Mart Discount Store	**131,401**	**$460**	**$60,444,460**
Dedicated to Grocery Sales and Stockroom	3,980		$1,830,843
Dedicated to General Merchandise Sales and Stockroom	119,912		$55,159,625
Dedicated to Other	7,509		$3,453,993
Proposed Wal-Mart Supercenter Expansion	**244,047**	**$460**	**$112,261,620**
Dedicated to Grocery Sales and Stockroom	55,729		$25,635,340
Dedicated to General Merchandise and Stockroom	162,541		$74,768,860
Dedicated to Other	25,777		$11,857,420
Net New Addition (Expansion)	**112,646**	**$460**	**$51,817,160**
Dedicated to Grocery Sales and Stockroom	51,749		$23,804,497
Dedicated to General Merchandise and Stockroom	42,629		$19,609,235
Dedicated to Other	18,268		$8,403,427

Notes:
(1) Refer to Exhibit 1.
(2) Refer to Exhibit 2.

Sources: United States Securities and Exchange Commission, Wal-Mart Stores, Inc. 2004 Form 10-K; PacLand; and Sedway Group
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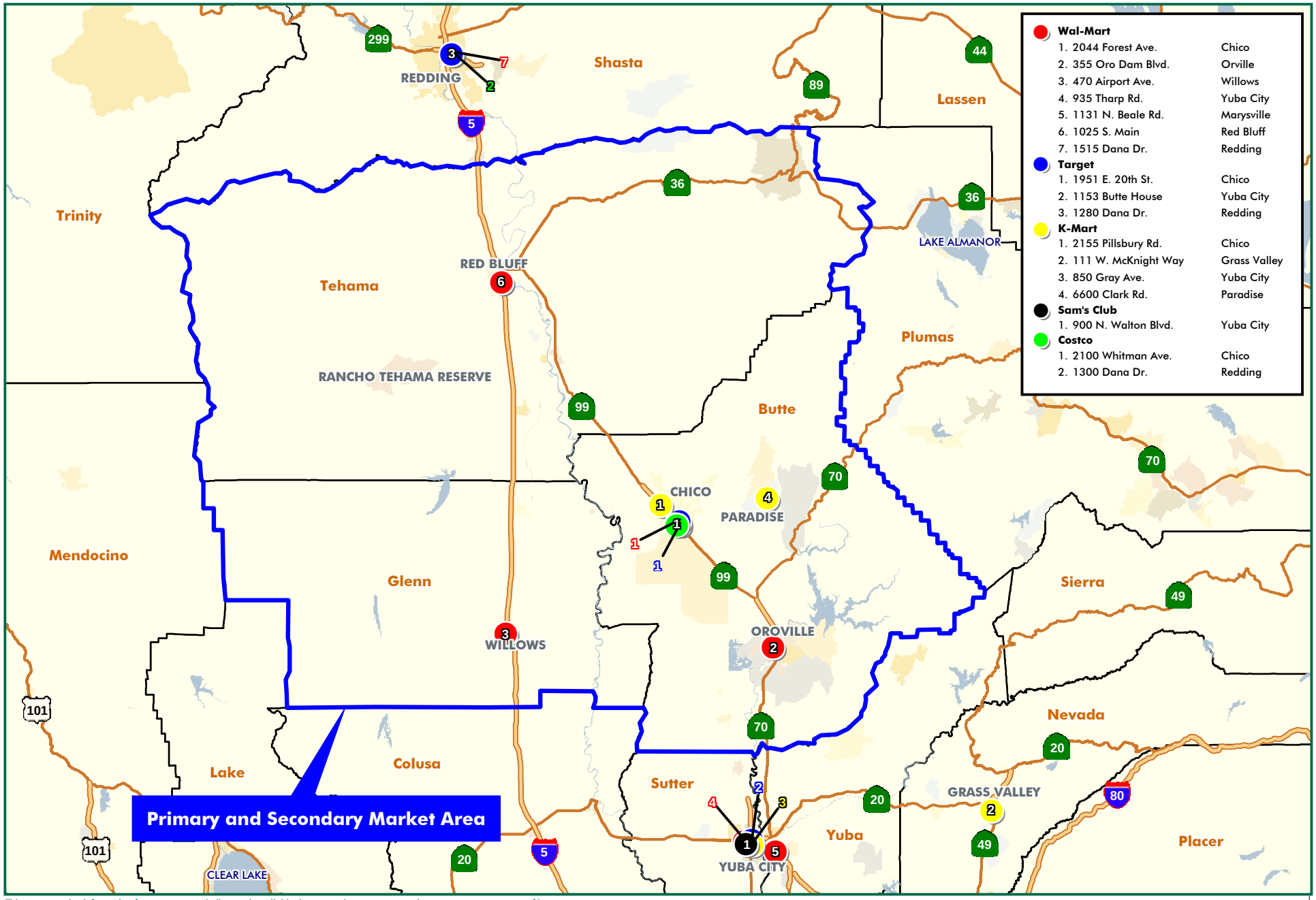
Exhibit 4: Primary and Secondary Market Area and Selected General Merchandise Retailers



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SEDWAY GROUP
Real Estate and Urban Economics

EXHIBIT 5
POPULATION ASSUMPTIONS
PRIMARY AND SECONDARY MARKET AREAS (1)
2000 - 2015

Chico (Primary Market Area)	Actual (2)				Projections (3)								Compound Average Annual Growth Rate		
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2015	2000 - 2003	2003 - 2015	N/A
City of Chico	95,466	97,421	99,375	100,675	103,326	106,047	108,840	111,707	114,649	117,668	120,767	137,529	1.8%	2.6%	N/A

Primary and Secondary Market Area	Actual (4)				Projections (5)								Compound Average Annual Growth Rate		
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2015	2000 - 2005	2005 - 2010	2010 - 2015
Butte County	204,672	206,100	208,600	210,800	212,237	214,119	216,830	219,575	222,354	225,169	228,020	243,827	0.9%	1.3%	1.3%
Glenn County	26,718	26,800	27,000	27,400	27,824	28,197	28,424	28,652	28,882	29,114	29,348	30,621	1.1%	0.8%	0.9%
Tehama County	56,042	56,100	56,900	57,900	59,208	60,019	60,496	60,977	61,461	61,950	62,442	65,316	1.4%	0.8%	0.9%
Total	287,432	289,000	292,500	296,100	298,761	302,335	305,749	309,203	312,698	316,233	319,810	339,765	1.0%	1.1%	1.2%

Notes:

(1) City of Chico (Primary Market Area) population estimates represent the "planning area" as defined by the Chico General Plan.

(2) Actual population estimates provided by the City of Chico (2000, 2002, and 2003) based on California Department of Finance data representative of the planning area defined in the Chico General Plan. Intermediate year (2001) estimated by Sedway Group.

(3) Projection for 2014 provided by the City of Chico based on information contained in the General Plan, which estimates the planning area population at 134,000 in 2014. Intermediate years (2004 to 2013) and the subsequent year 2015, estimated by Sedway Group based on the 2003 to 2014 projection and estimated annual growth rate.

(4) Actual population estimates reported by the California Department of Finance.

(5) Projections for 2010 and 2020 provided by California Department of Finance. Intermediate years (2005 to 2009 and 2011 to 2015), estimated by Sedway Group based on the 2010 and 2020 projections.

Sources: City of Chico, General Plan; California Department of Finance; and Sedway Group.

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EXHIBIT 6
RETAIL SALES LEAKAGE ANALYSIS (1)
CITY OF CHICO (PRIMARY MARKET AREA)
2003

Type of Retailer	PER CAPITA (2)			TOTAL		
	Control Area Average Sales (3)	Chico Spending	Chico Sales	Chico Spending	Chico Sales	Attraction/ (Leakage)
Apparel Stores	$426	$322	$513	$32,367,084	$51,674,000	$19,306,916
General Merchandise Stores (4)	$1,492	$1,144	$2,642	$115,213,273	$265,983,040	$150,769,767
Food Stores (5)	$1,817	$1,629	$2,366	$164,000,081	$238,203,333	$74,203,253
Eating and Drinking Places	$1,125	$881	$1,205	$88,688,438	$121,358,000	$32,669,562
Home Furnishings and Appliances	$424	$331	$624	$33,324,428	$62,796,000	$29,471,572
Building Materials (6)	$862	$643	$1,557	$64,757,126	$156,748,000	$91,990,874
Auto Dealers and Auto Supplies	$1,883	$1,474	$2,116	$148,385,064	$212,979,000	$64,593,936
Service Stations	$778	$676	$693	$68,056,569	$69,718,000	$1,661,431
Other Retail Stores (7)	$1,529	$1,173	$1,992	$118,060,910	$200,593,000.0	$82,532,090
Totals	$10,336	$8,273	$13,708	$832,852,972	$1,380,052,373	$547,199,401

Notes:
(1) All figures are expressed in constant 2003 dollars.
(2) Chico planning area population as of 2003 estimated at 100,675, per Exhibit 5. Assumes a 2003 average household income of $52,174 for Chico and $77,045 for the control area.
(3) Control area defined as the State of California.
(4) Includes general merchandise and drug stores. Drug stores are assumed to comprise 12 percent of total general merchandise sales based on Sedway Group's analysis of control area averages. Taxable drug stores sales are assumed to represent 70 percent of total sales and were adjusted upward to include non-taxable sales.
(5) Taxable grocery store sales as reported by the BOE are assumed to represent 30 percent of total sales and have been adjusted upward to include non-taxable sales.
(6) Building materials group includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, farm implement dealers, and lumber.
(7) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

Sources: State Board of Equalization "Taxable Sales in California - 2003"; California Department of Finance; Claritas, Inc.; City of Chico; and Sedway Group.
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EXHIBIT 7
PROJECTED RETAIL SALES LEAKAGE
CITY OF CHICO (PRIMARY MARKET AREA)
2008 ESTIMATE

Type of Retailer	Chico Annual Per Capita					2008 Estimated Total (2)		
	2003			2008 Estimate (1)				Attraction /
	Spending	Sales	Sales	Spending	Sales	Chico Spending	Chico Sales	(Leakage)
Apparel Stores	$322	$513	$578.3	$373	$596	$42,763,905	$68,330,530	$25,566,624
General Merchandise Stores (3)	$1,144	$2,642	$2,977	$1,328	$3,066	$152,253,261	$351,512,424	$199,259,163
Food Stores (4)	$1,629	$2,366	$2,666	$1,890	$2,746	$216,685,741	$314,824,891	$98,139,150
Eating and Drinking Places	$881	$1,205	$1,358	$1,022	$1,399	$117,170,808	$160,393,308	$43,222,500
Home Furnishings and Appliances	$331	$624	$703	$384	$724	$44,025,039	$83,005,543	$38,980,504
Building Materials (5)	$643	$1,557	$1,754	$746	$1,807	$85,527,811	$207,169,912	$121,642,101
Auto Dealers and Auto Supplies	$1,474	$2,116	$2,384	$1,710	$2,455	$196,049,004	$281,462,166	$85,413,162
Service Stations	$676	$693	$780	$785	$804	$89,999,104	$92,177,426	$2,178,322
Other Retail Stores (6)	$1,173	$1,992	$2,245	$1,361	$2,312	$156,036,663	$265,067,425	$109,030,762
Totals	$8,273	$13,708	$15,445	$9,601	$15,908	$1,100,511,337	$1,823,943,626	$723,432,289

Notes:
(1) Adjusted for inflation based on the consumer price index for all urban consumers in California, as defined by the U.S. Department of Labor Bureau of Labor Statistics. Inflation for the annual period 2003 - 2004 was 3.11%. Inflation for the periods 2004 - 2008 estimated to be 3.00% per year.
(2) Estimated 2008 Chico planning area population of 114,649, per Exhibit 5.
(3) Includes general merchandise and drug stores. Drug stores are assumed to comprise 12 percent of total general merchandise sales based on Sedway Group's analysis of control area averages. Taxable drug stores sales are assumed to represent 70 percent of total sales and were adjusted upward to include non-taxable sales.
(4) Taxable grocery store sales as reported by the BOE are assumed to represent 30 percent of total sales and have been adjusted upward to include non-taxable sales.
(5) Building materials group includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, farm implement dealers, and lumber.
(6) Other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores. It is especially relevant to note for this analysis that this category includes garden supply stores.

Sources: State Board of Equalization "Taxable Sales in California - 2003"; California Department of Finance; Claritas, Inc.; U.S. Department of Labor Bureau of Labor Statistics; City of Chico; and Sedway Group.

EXHIBIT 8
RETAIL SALES LEAKAGE ANALYSIS (1)
CHICO PRIMARY AND SECONDARY MARKET AREAS
2003

Type of Retailer	PER CAPITA (2)			TOTAL		
	Control Area Average Sales (3)	Primary and Secondary Market Areas Spending	Primary and Secondary Market Areas Sales	Primary and Secondary Market Areas Spending	Primary and Secondary Market Areas Sales	Attraction/ (Leakage)
Apparel Stores	$426	$316	$209	$93,590,053	$61,748,000	($31,842,053)
General Merchandise Stores (4)	$1,492	$1,127	$1,199	$333,654,698	$354,940,206	$21,285,508
Food Stores (5)	$1,817	$1,620	$2,239	$479,643,371	$663,080,000	$183,436,629
Eating and Drinking Places	$1,125	$868	$786	$257,131,644	$232,831,000	($24,300,644)
Home Furnishings and Appliances	$424	$326	$303	$96,577,913	$89,839,000	($6,738,913)
Building Materials (6)	$862	$633	$939	$187,325,590	$278,050,000	$90,724,410
Auto Dealers and Auto Supplies	$1,883	$1,453	$1,662	$430,276,723	$492,046,000.0	$61,769,277
Service Stations	$778	$671	$709	$198,734,372	$210,056,000	$11,321,628
Other Retail Stores (7)	$1,529	$1,155	$1,513	$341,901,383	$447,872,000	$105,970,617
Totals	$10,336	$8,169	$9,559	$2,418,835,747	$2,830,462,206	$411,626,458

Notes:
(1) All figures are expressed in constant 2003 dollars.
(2) Primary and secondary areas population as of 2003 estimated at 296,100, per Exhibit 5. Assumes a 2008 average household income of $50,912 for the primary and secondary market areas and $77,045 for the control area.
(3) Control Area defined as the State of California.
(4) Includes general merchandise and drug stores. Drug stores are assumed to comprise 12 percent of total general merchandise sales based on Sedway Group's analysis of control area averages. Taxable drug stores sales are assumed to represent 70 percent of total sales and were adjusted upward to include non-taxable sales. Due to disclosure issues, per the California State Board of Equalization, the general merchandise category for Glenn and Tehama counties is combined with the "other retail stores" category. As a result, the combined primary and secondary market area general merchandise sales figures are reflective of only Butte County.
(5) Taxable grocery store sales as reported by the BOE are assumed to represent 30 percent of total sales and have been adjusted upward to include non-taxable sales.
(6) Building materials group includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, farm implement dealers, and lumber.
(7) In addition to the general merchandise category data for Glenn and Tehama counties noted above, other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores.

Sources: State Board of Equalization "Taxable Sales in California - 2003"; California Department of Finance; Claritas, Inc.; and Sedway Group.
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EXHIBIT 9
PROJECTED RETAIL SALES LEAKAGE
CHICO PRIMARY AND SECONDARY MARKET AREAS
2008 ESTIMATE

Type of Retailer	Primary and Secondary Market Areas Annual Per Capita					2008 Estimated Total (2)		
	2003			2008 Estimate (1)		Primary and Secondary Market Area Spending	Primary and Secondary Market Area Sales	Attraction / (Leakage)
	Spending	Sales	Sales	Spending	Sales			
Apparel Stores	$316	$209	$235	$367	$242	$114,726,920	$75,693,491	($39,033,429)
General Merchandise Stores (3)	$1,127	$1,199	$1,351	$1,308	$1,391	$409,102,474	$435,062,341	$25,959,866
Food Stores (4)	$1,620	$2,239	$2,523	$1,880	$2,599	$588,006,614	$812,887,867	$224,881,253
Eating and Drinking Places	$868	$786	$886	$1,008	$913	$315,271,631	$285,558,531	($29,713,100)
Home Furnishings and Appliances	$326	$303	$342	$379	$352	$118,539,631	$110,094,855	($8,444,776)
Building Materials (5)	$633	$939	$1,058	$734	$1,090	$229,572,795	$340,918,728	$111,345,933
Auto Dealers and Auto Supplies	$1,453	$1,662	$1,872	$1,686	$1,928	$527,329,336	$603,019,549	$75,690,213
Service Stations	$671	$709	$799	$779	$823	$243,647,422	$257,409,278	$13,761,857
Other Retail Store (6)	$1,155	$1,513	$1,704	$1,340	$1,755	$419,111,097	$548,910,430	$129,799,332
Totals	$8,169	$9,559	$10,770	$9,481	$11,093	$2,965,307,921	$3,469,555,071	$504,247,150

Notes:
(1) Adjusted for inflation based on the consumer price index for all urban consumers in California, as defined by the U.S. Department of Labor Bureau of Labor Statistics. Inflation for the annual period 2003 - 2004 was 3.11%. Inflation for the periods 2004 - 2008 estimated to be 3.00% per year.
(2) Primary and secondary areas population as of 2008 estimated at 312,698, per Exhibit 5.
(3) Includes general merchandise and drug stores. Drug stores are assumed to comprise 12 percent of total general merchandise sales based on Sedway Group's analysis of control area averages. Taxable drug stores sales are assumed to represent 70 percent of total sales and were adjusted upward to include non-taxable sales. Due to disclosure issues, per the California State Board of Equalization, the general merchandise category for Glenn and Tehama counties is combined with the "other retail stores" category. As a result, the combined primary and secondary market area general merchandise sales figures are reflective of only Butte County.
(5) Building materials group includes hardware stores, plumbing and electrical supplies, paint and wallpaper products, glass stores, farm implement dealers, and lumber.
(6) In addition to the general merchandise category data for Glenn and Tehama counties noted above, other retail stores includes packaged liquor stores, gifts, art goods and novelties, sporting goods, florists, photographic equipment and supplies, musical instruments, stationary and books, jewelry, office and school supplies, second-hand merchandise, farm and garden supply stores, mobile homes/trailers and campers, boat and motorcycle dealers, and miscellaneous other retail stores.

Sources: State Board of Equalization "Taxable Sales in California- 2003"; California Department of Finance; Claritas, Inc.; U.S. Department of Labor Bureau of Labor Statistics; and Sedway Group.

EXHIBIT 10
MAXIMUM SUPERCENTER SALES IMPACTS
ON CHICO RETAIL SALES
2008 ESTIMATE (IN MILLIONS)

		Source of Sales (2)		Retail Sales								
Type of Retailer	Net New Supercenter Sales (1)	Primary and Secondary Market Areas	Tertiary Market Area	City of Chico (Primary Market Area)		Primary and Secondary Markets Area (4)		Chico Percent of Primary and Secondary Market Areas	Maximum Sales Diverted From Chico Retailers (5)	Minimum Net New Sales to Chico (6)
	[A]	[B = A x 90%]	[C = A x 10%]	[D]		[E]		[F = D / E]	[G = B x F x -1]	[H = A + G]
General Merchandise	$19.6	$17.6	$2.0	$616.6	(7)	$984.0	(7)	62.7%	($11.1)	$8.6
Food Stores	$23.8	$21.4	$2.4	$314.8		$812.9		38.7%	($8.3)	$15.5
Total	$43.4	$39.1	$4.4	$931.4		$1,796.9		51.8%	($19.4)	$24.1

Notes:
(1) These figures are from Exhibit 3, and comprise the incremental Supercenter Store sales in excess of estimated sales at the existing Discount Store.
(2) Sedway Group estimates that 90% of sales will be generated from primary and secondary market area residents, with the 10% balance of sales generated by tertiary market area residents. This tertiary market area is not defined, but extends beyond the boundaries of Butte, Glenn, and Tehama counties.
(3) City of Chico sales figures (Exhibit 7, 2008 Leakage Projection).
(4) Primary and secondary market area sales figures (Exhibit 9, 2008 Leakage Projection).
(5) The figures in this column comprise the maximum amount of net new primary and secondary market area Wal-Mart Supercenter Store sales diverted from existing City of Chico retailers, assuming sales in excess of any leakage (of which there is none) will be diverted away from existing Chico retailers in proportion to the Chico retailers' estimated contribution to primary market area sales. This implies that any negative impacts of the Supercenter Store's sales will be spread proportionally among all the like retailers in the primary market area. It is equal to the primary and secondary market areas sales by category, multiplied by the Chico percent of the combined primary and secondary market area sales for that category.
(6) This column comprises all net new Supercenter sales less the maximum sales diverted from Chico retailers. Figures may not total due to rounding. It is equal to the incremental net new Supercenter Sales, net of the maximum diverted sales from Chico retailers.
(7) Due to disclosure issues in the data reported by the California Board of Equalization, the general merchandise category includes the "other retail stores" category. The adjustment is necessary to accurately capture the general merchandise sales in the secondary market area.

Sources: Sedway Group.
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EXHIBIT 11
MAXIMUM DIVERTED SALES AS A PERCENT
OF ESTIMATED CITY OF CHICO SALES
2008 ESTIMATE (IN MILLIONS)

Type of Retailer	Maximum Sales Diverted From Chico Retailers (1)	Estimated Retail Sales Chico (2)	Diverted Sales as a Percent of Estimated Sales
General Merchandise	($11.1)	$351.5	3.1%
Food Stores	($8.3)	$314.8	2.6%
Total	($19.4)	$666.3	2.9%

Notes:
(1) Refer to Exhibit 10.
(2) Refer to Exhibit 7.

Sources: Sedway Group.
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EXHIBIT 12
NEW POPULATION RETAIL DEMAND (ANNUAL)
PRIMARY AND SECONDARY MARKET AREAS (1)
2008 - 2013
2008 DOLLARS (IN MILLIONS)

Area	Annual Population Growth (2)					Annual New Retail Demand ($ in millions) (3)									
						2008 - 2009		2009 - 2010		2010 - 2011		2011 - 2012		2012 - 2013	
	2008 - 2009	2009 - 2010	2010 - 2011	2011 - 2012	2012 - 2013	Gen. Merch.	Food Stores	Gen. Merch.	Food Stores	Gen. Merch.	Food Stores	Gen. Merch.	Food Stores	Gen. Merch.	Food Stores
City of Chico (Primary Market Area)	3,019	3,099	3,180	3,264	3,350	$4.0	$5.7	$4.1	$5.9	$4.2	$6.0	$4.3	$6.2	$4.4	$6.3
Secondary Market Area	516	478	712	677	640	$0.7	$1.0	$0.6	$0.9	$0.9	$1.3	$0.9	$1.3	$0.9	$1.2
Total Primary and Secondary Market Areas	3,535	3,577	3,892	3,941	3,990	$4.6	$6.6	$4.7	$6.7	$5.1	$7.3	$5.2	$7.4	$5.2	$7.5
Projected Chico Capture of New Retail Demand (4)						$4.2	$5.7	$4.3	$5.9	$4.5	$6.0	$4.6	$6.2	$4.7	$6.3

Notes:
(1) The Chico Wal-Mart Supercenter store primary and secondary market areas are defined as the counties of Butte, Glenn, and Tehama.
(2) Refer to Exhibit 5.
(3) City of Chico annual per capita spending for 2008 is estimated at $1,328 for general merchandise and $1,890 for food stores. Primary and secondary market area annual per capita spending for 2008 is estimated at $1,308 for general merchandise and $1,880 for food stores. Refer to Exhibits 7 and 9. This is used in the analysis as a proxy for the secondary market area alone.
(4) As a result of the population growth occurring primarily within the City of Chico, Chico's potential capture rate of the general merchandise category is assumed to include 100 percent of Chico's demand and 33 percent of the secondary market area demand. Chico's potential capture rate of the food stores category is assumed to include 100 percent of Chico's demand and none of the secondary market area's food stores demand.

Sources: State Board of Equalization "Taxable Sales in California - 2003"; California Department of Finance; City of Chico; and Sedway Group.
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EXHIBIT 13
NEW POPULATION RETAIL DEMAND (CUMULATIVE)
PRIMARY AND SECONDARY MARKET AREAS (1)
2008 - 2013
2008 DOLLARS (IN MILLIONS)

Area	Cumulative Population Growth (2)					Cumulative New Retail Demand ($ in millions) (3)									
						2008 - 2009		2008 - 2010		2008 - 2011		2008 - 2012		2008 - 2013	
	2008 - 2009	2008 - 2010	2008 - 2011	2008 - 2012	2008 - 2013	Gen. Merch.	Food Stores	Gen. Merch.	Food Stores	Gen. Merch.	Food Stores	Gen. Merch.	Food Stores	Gen. Merch.	Food Stores
City of Chico (Primary Market Area)	3,019	6,118	9,299	12,563	15,913	$4.0	$5.7	$8.1	$11.6	$12.3	$17.6	$16.7	$23.7	$21.1	$30.1
Secondary Market Area	516	994	1,706	2,382	3,023	$0.7	$1.0	$1.3	$1.9	$2.3	$3.2	$3.2	$4.5	$4.0	$5.7
Total Primary and Secondary Market Area	3,535	7,112	11,004	14,945	18,936	$4.6	$6.6	$9.3	$13.4	$14.4	$20.7	$19.5	$28.1	$24.8	$35.6
Projected Chico Capture of New Retail Demand (4)						$4.2	$5.7	$8.6	$11.6	$13.1	$17.6	$17.7	$23.7	$22.5	$30.1

Notes:
(1) The Chico Wal-Mart Supercenter store primary and secondary market areas are defined as the counties of Butte, Glenn, and Tehama.
(2) Refer to Exhibit 5.
(3) City of Chico annual per capita spending for 2008 is estimated at $1,328 for general merchandise and $1,890 for food stores. Primary and secondary market area annual per capita spending for 2008 is estimated at $1,308 for general merchandise and $1,880 for food stores. Refer to Exhibits 7 and 9. This is used in the analysis as a proxy for the secondary market area alone.
(4) As a result of the population growth occurring primarily within the City of Chico, Chico's potential capture rate of the general merchandise category is assumed to include 100 percent of Chico's demand and 33 percent of the secondary market area demand. Chico's potential capture rate of the food stores category is assumed to include 100 percent of Chico's demand and none of the secondary market area's food stores demand.

Sources: State Board of Equalization "Taxable Sales in California - 2003"; California Department of Finance; City of Chico; and Sedway Group.
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EXHIBIT 14
NEW RESIDENTIAL DEVELOPMENT (1)
CITY OF CHICO
AS OF OCTOBER 2005

Development Status	Projects	Total Units	Estimated Population (2)
Application in Process	18	5,974	14,397
Tentative Map Approved	17	493	1,188
Recorded Map, Under Construction	31	2,827	6,813
Totals	66	9,294	22,399
Northwest Chico Specific Plan	NA	2,055	4,953

Notes:
(1) Data provided by the City of Chico Planning Department and reflects the October 1, 2005 Residential Development Activity report and map.
(2) Population estimate based on Chico average household size of 2.41, per the U.S. Census 2000.

Sources: City of Chico, Planning Department; U.S. Census 2000; and Sedway Group.
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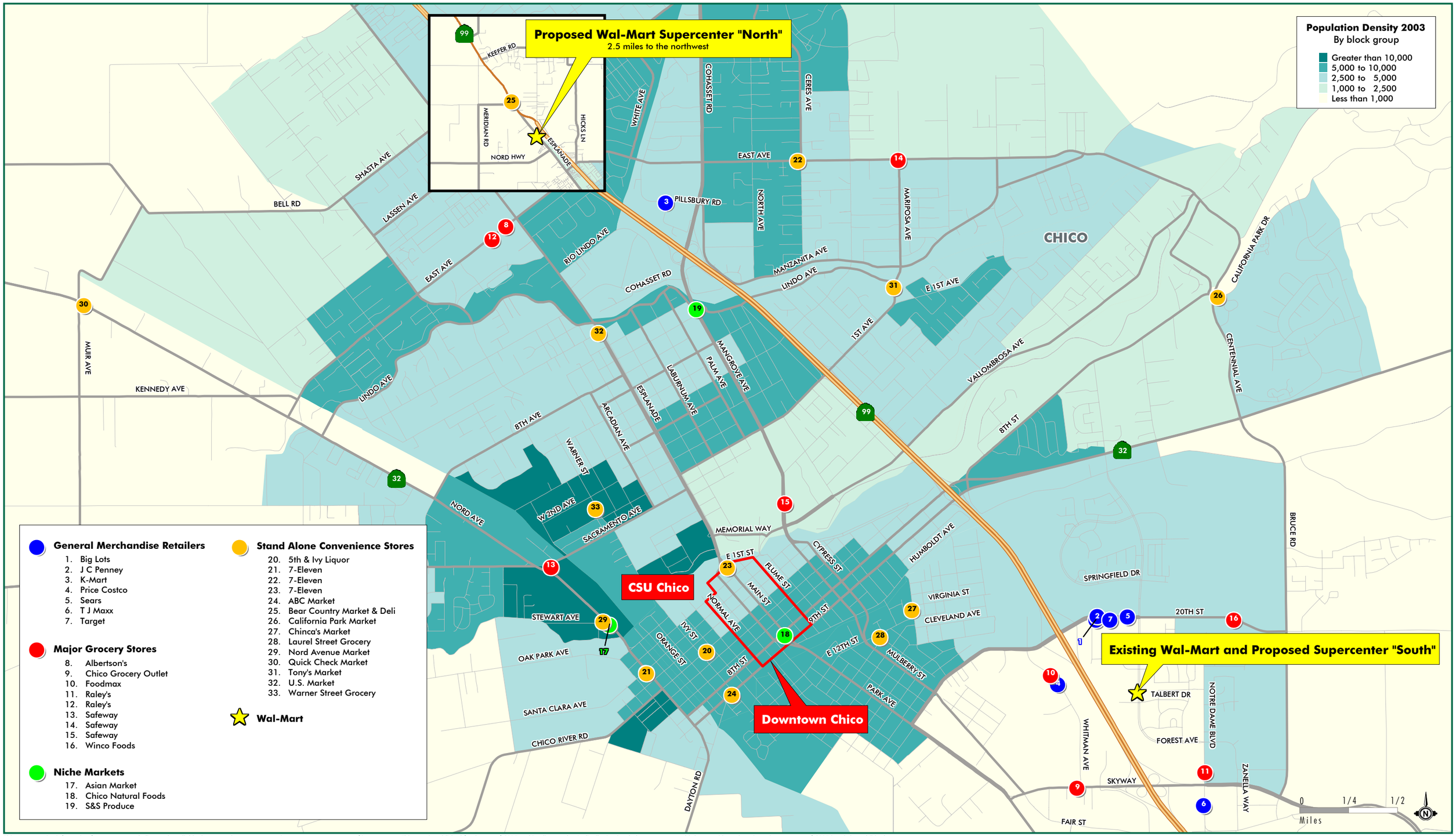
Exhibit 15: Selected General Merchandise & Food Stores

Chico, CA



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SEDWAY GROUP
Real Estate and Urban Economics

EXHIBIT 16
EXISTING SELECTED RETAILERS
AVERAGE SALES PER SQUARE FOOT
CITY OF CHICO

Retail Type Retailer	Total Square Feet (1)	Fiscal Year 2003 - 2004 Sales Tax (2)	Total Taxable Sales (3)	Total Sales (4)	Total Sales Per Sq. Foot	Urban Land Institute 2004 Estimate (5) National	Western
General Merchandise							
Big Lots	24,392	N/A	N/A	N/A	N/A		
JC Penny	104,106	N/A	N/A	N/A	N/A		
Kmart	84,000	N/A	N/A	N/A	N/A		
Price Costco	123,226	N/A	N/A	N/A	N/A		
Sears	85,116	N/A	N/A	N/A	N/A		
TJ Maxx (6)	30,000	N/A	N/A	N/A	N/A		
Target	106,064	N/A	N/A	N/A	N/A		
Total	556,904	$1,378,898	$137,889,800	$137,889,800	$248	$184 -	$228
Major Grocery Stores and Niche Markets							
Albertson's	42,630	N/A	N/A	N/A	N/A		
Grocery Outlet	16,800	N/A	N/A	N/A	N/A		
Food Maxx	55,458	N/A	N/A	N/A	N/A		
Raley's	61,000	N/A	N/A	N/A	N/A		
Raley's	64,221	N/A	N/A	N/A	N/A		
Safeway	25,000	N/A	N/A	N/A	N/A		
Safeway	54,990	N/A	N/A	N/A	N/A		
Safeway	49,117	N/A	N/A	N/A	N/A		
Winco	79,120	N/A	N/A	N/A	N/A		
Chico Natural Foods	5,760	N/A	N/A	N/A	N/A		
S&S Produce	8,256	N/A	N/A	N/A	N/A		
Total	462,352	$544,524	$54,452,400	$181,508,000	$393	$390 -	$482

Notes:
(1) Data provided by First American Real Estate Solutions and the City of Chico.
(2) Aggregate city share of sales tax collected in fiscal year 2003-2004, provided by the City of Chico.
(3) Total sales adjustment based on City of Chico collecting 1.0 percent of total taxable sales.
(4)Total taxable transactions for general merchandise retailers have not been adjusted. Taxable transactions for major grocery stores and niche markets have been adjusted by 0.30 to account for non-taxable sales. Taxable transactions for drug stores have been adjusted by 0.70 to account for non-taxable sales.
(5) Based on information contained in the Urban Land Institute Dollars and Cents of Shopping Centers: 2004. Figures are based on survey data for retailers located in "Community Shopping Centers" and represent the National (low end figure) and Western (high end figure) median sales per gross leasable square foot. Community Shopping Centers convenience goods and personal services, as a well as a wide range of soft lines (apparel) and hard lines (hardware and appliances).
(6) TJ Maxx sales are classified by the California Board of Equalization as apparel; however, the data we received from the City of Chico included them in the general merchandise category. Due to legal requirements regarding disclosure, the City cannot provide a revised figure excluding this store.

Sources: First American Real estate Solutions; City of Chico, Finance Department; State Board of Equalization; Sedway Group.
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EXHIBIT 17
SELECTED SURVEY OF OTHER
POTENTIAL RETAIL DEVELOPMENT ACTIVITY
CHICO PRIMARY AND SECONDARY MARKET AREAS
2008 DOLLARS
FEBRUARY 2006

Area Project	Location	Net New Sq. Ft. (1)	Status/Information
City of Chico (Primary Market Area)			
Wal-Mart Supercenter (North)	Chico	231,115	A new Wal-Mart Supercenter store is proposed in North Chico. The environmental impact review process is underway. Refer to Exhibit 18 for sales estimates.
Costco (expansion)	Chico	25,687	Costco is proposing to construct a new, 148,663-square-foot building, which is to replace its existing, 122,976-square-foot building. The new building will result in an incremental addition of 25,687 square feet of retail space. The approvals process is expected to conclude in mid-2006 and completion of the new building is expected in mid-2007. Costco sales are estimated in Exhibit 21 and are based on average sales per square foot of $862 (2005 dollars), as detailed in the Costco 2005 Form 10-K on file with the Securities and Exchange Commission.
Kohl's	Chico	96,077	Kohl's is constructing a 96,077-square-foot store with an additional 38,086 square feet of retail in four stores, known as the Kohl's Shopping Center. The shopping center is expected to open in late-2006. Based on data contained in Kohl's 2004 Annual Report, their sales averaged $238 per square foot. Adjusted for inflation the 2008 equivalent is $260 per square foot. In 2008 dollars, the planned Kohl's annual sales are estimated at $25.0 million.
Secondary Market Area			
Wal-Mart (expansion) (2)	Willows	110,333	Existing Wal-Mart Discount Store (86,453 sq. ft.) to be replaced by a Supercenter Store (196,786 sq. ft.) on the same site; thus, the existing Discount Store will be demolished resulting in a net expansion of 110,333 square feet. Currently preparing Administrative Draft EIR for project.
Wal-Mart (expansion) (3)	Red Bluff	126,016	Existing Wal-Mart Discount Store (100,457 sq. ft.) to be replaced by a Supercenter Store (198,786 sq. ft., plus 19,318 square foot attached garden center and 8,369 square foot seasonal sales area in parking lot) on an adjacent site. The existing Discount Store will be vacated and is in contract to be sold, pending approval of the Supercenter. Development requires General Plan amendment, Zone Change, Tentative Parcel Map, Administrative Use Permit, Design Review, Parking Reduction, Compliance with Tree Replacement Ordinance, and Encroachment Permit. Currently preparing Administrative Final EIR for project. It is estimated that the project will be considered at public hearing in 2006.
Retail Center (4)	Paradise	290,000	A 60-acre site adjacent to the Town of Paradise is undergoing the approvals process. A Wal-Mart Supercenter has been proposed as the anchor tenant; however, the store has not been approved. Other tenants have not been confirmed. The project site will require annexation approval into the Town Paradise.

Notes:
(1) New incremental square feet.
(2) Data provided by the City of Willows and Applied Development Economics.
(3) Data provided by the City of Red Bluff and Applied Development Economics.
(4) Data provided by the Town of Paradise, Planning Department.

Sources: City of Chico; City of Willows; City of Red Bluff; Town of Paradise; Applied Development Economics; and Sedway Group.
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EXHIBIT 18
BREAKDOWN OF SALES FLOOR AREA BY CATEGORY
PLANNED CHICO WAL-MART SUPERCENTER "NORTH"
2008

Floor Area	Planned Supercenter North Store Sq. Ft. (1)	Average Sales Per Sq. Ft. (2)	Estimated Total Sales
Dedicated to Grocery Sales and Stockroom			
Grocery Sales	46,000		
Stockroom	11,998		
Sub-total	57,998	$460	$26,678,894
Dedicated to General Merchandise and Stockroom			
General Merchandise Sales	120,400		
Office/Stockroom	31,402		
Sub-total	151,802	$460	$69,829,106
Dedicated to Other Uses			
Other	0		
Outdoor Garden Center	21,315		
Sub-total	21,315	$460	$9,804,900
Total Building Area	**231,115**	**$460**	**$106,312,900**

Notes
(1) Data provided by PacLand.
(2) Refer to Exhibit 3.

Sources: PacLand; and Sedway Group.
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EXHIBIT 19
NORTH SUPERCENTER SALES ALLOCATION
2008 ESTIMATE (IN MILLIONS)

Type of Retailer	New North Supercenter Sales (1)	Source of Sales (2)	
		Primary and Secondary Market Areas	Tertiary Market Area
General Merchandise	$69.8	$62.8	$7.0
Food Stores	$26.7	$24.0	$2.7
Total	$96.5	$86.9	$9.7

Notes:
(1) These figures are from Exhibit 18, and comprise the new North Supercenter Store sales.
(2) Sedway Group estimates that 90% of sales will be generated from primary and secondary market area residents, with the 10% balance of sales generated by tertiary market area residents. This tertiary market area is not defined, but extends beyond the boundaries of Butte, Glenn, and Tehama counties.

Sources: Sedway Group.
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EXHIBIT 20
MAXIMUM NORTH SUPERCENTER SALES IMPACTS
ON CHICO RETAIL SALES
2008 ESTIMATE (IN MILLIONS)

	New Chico Baseline			New Primary and Secondary Market Areas Baseline					
Type of Retailer	City of Chico Retail Chico Sales (1) [A]	Minimum Net New Sales to Chico (2) [B]	New Chico (Primary Market Area) Baseline Retail Sales (3) [C =A + B]	Primary and Secondary Market Area Retail Sales (4) [D]	Minimum Net New Sales to Chico (2) [E]	New Market Areas Baseline Retail Sales (5) [F = D + E]	Chico Percent of New Primary And Secondary Market Area [G = C / F]	Maximum Sales Diverted From Chico Retailers (6) [H]	Minimum Net New Sales to Chico (7) [I]
General Merchandise	$616.6 (8)	$8.6	$625.1	$984.0 (8)	$8.6	$992.5	63.0%	($39.6)	$30.2
Food Stores	$314.8	$15.5	$330.3	$812.9	$15.5	$828.4	39.9%	($9.6)	$17.1
Total	$931.4	$24.1	$955.5	$1,796.9	$24.1	$1,820.9	52.5%	($49.2)	$47.4

Notes:
(1) Forecasted City of Chico sales figures (Exhibit 7).
(2) Minimum new sales to the City of Chico (Exhibit 10)
(3) The new Chico baseline is the City of Chico retail sales plus the minimum new sales to Chico from development of the Wal-Mart Supercenter expansion.
(4) Market Areas sales figures (Exhibit 10).
(5) The new market area baseline is the primary and secondary market area retail sales plus the minimum new sales to Chico from development of the Wal-Mart Supercenter expansion.
(6) The figures in this column comprise the maximum amount of net new primary market area Wal-Mart North Supercenter Store sales diverted from existing City of Chico retailers, assuming sales in excess of any leakage (of which there is none) will be diverted away from existing Chico retailers in proportion to the Chico retailers' estimated contribution to primary and secondary market area sales. This implies that any negative impacts of the North Supercenter Store's sales will be spread proportionally among all the like retailers in the primary market area. It is equal to the primary and secondary market area sales by category, multiplied by the Chico percent of the sales for that category.
(7) This column comprises all new North Supercenter sales less the maximum sales diverted from Chico retailers. Figures may not total due to rounding. It is equal to the incremental new North Supercenter Sales, net of the maximum diverted sales from Chico retailers.
(8) Due to disclosure issues in the data reported by the California Board of Equalization, the general merchandise category includes the "other retail stores" category. The adjustment is necessary to accurately capture the general merchandise sales in the secondary market area.

Sources: Sedway Group.
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EXHIBIT 21
ESTIMATE OF SALES PER SQUARE FOOT
ALL COSTCO STORES
2005 AND 2008 ESTIMATE

Category		Data
All Costco Stores: 2005 Dollars (1)		
Annual Net Sales		$51,862,072,000
Total Number of Stores		433
Average Annual Sales per Store (2)		$119,773,838
Average Square Feet per Store		139,000
Average Sales Per Square Foot (2)		$862
Average Sales per Square Foot (2008$s) (3)		$942
Proposed Chico Costco Expansion (4)		
Total Square Feet		25,687
Average Sales per Square Foot (2008 $s)		$942
Total Annual Sales		$24,186,455
General Merchandise	60.0%	$14,511,873
Food Stores	40.0%	$9,674,582

Notes
(1) United States Securities and Exchange Commission, Costco Wholesale Corp., 2005 Form 10-K.
(2) Estimated by Sedway Group.
(3) Adjusted for inflation. Inflation estimated to be 3.0% per year.
(4) Refer to Exhibit 17.

Sources: United States Securities and Exchange Commission, Costco Wholesale Corp., 2005 Form 10-K; City of Chico, Planning Department; and Sedway Group.
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EXHIBIT 22
MAXIMUM COSTCO EXPANSION SALES IMPACTS
ON CHICO RETAIL SALES
2008 ESTIMATE (IN MILLIONS)

Type of Retailer	Costco Expansion Sales (1)	Source of Sales (2)		Chico Percent of New Primary And Secondary Market Area (3)	Maximum Sales Diverted From Chico Retailers (4)	Minimum Net New Sales to Chico (5)
		Primary and Secondary Market Area	Tertiary Market Area			
	[A]	[B =A x 90%]	[C = A x 10%]	[D]	[E = B x D x -1]	[F = A + E]
General Merchandise	$14.5	$13.1	$1.5	63.0%	($8.2)	$6.3
Food Stores	$9.7	$8.7	$1.0	39.9%	($3.5)	$6.2
Total	$24.2	$21.8	$2.4	52.5%	($11.7)	$12.5

Notes:
(1) Refer to Exhibit 21.
(2) Sedway Group estimates that 90% of sales will be generated from primary and secondary market area residents, with the 10% balance of sales generated by tertiary market area residents.
(3) Refer to Exhibit 20.
(4) The figures in this column comprise the maximum amount of net new primary market area Costco expansion sales diverted from existing City of Chico retailers, assuming sales in excess of any leakage (of which there is none) will be diverted away from existing Chico retailers in proportion to the Chico retailers' estimated contribution to primary market area sales. This implies that any negative impacts of the Costco's expansion sales will be spread proportionally among all the like retailers in the primary and secondary market areas. It is equal to the primary and secondary market area sales by category, multiplied by the Chico percent of sales for that category.
(5) This column comprises all new Costco expansion sales less the maximum sales diverted from Chico retailers. Figures may not total due to rounding. It is equal to the incremental new Costco sales, net of the maximum diverted sales from Chico retailers.

Sources: Sedway Group.
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EXHIBIT 23
MAXIMUM DIVERTED SALES IMPACTS AND EQUIVALENT SUPPORTABLE RETAIL SQUARE FEET
SOUTH CHICO SUPERCENTER AND CUMULATIVE PRIMARY MARKET AREA STORES
2008 ESTIMATE

Store Category	Maximum Sales Diversion	Estimated Store Over-Performance (1)		Revised Diverted Sales (2)		Sales Averages (3)		Supportable Square Feet				Cited Range (4)
								National		Regional		
		Low	High	Low	High	National	Western	Low	High	Low	High	
South Supercenter Store												
General Merchandise	$11,058,836 (5)	$12,034,983	$39,958,939	N/A (6)	N/A (6)	$207	$257	N/A (6)	N/A (6)	N/A (6)	N/A (6)	N/A (6) - N/A (6)
Food Stores	$8,297,360 (5)	N/A	N/A	$8,297,360	$8,297,360	$439	$542	18,891	18,891	15,305	15,305	15,000 - 19,000
Totals	$19,356,196											
South and North Supercenter Stores												
General Merchandise	$50,641,849 (7)	$12,034,983	$39,958,939	$10,682,910	$38,606,866	$207	$257	51,627	186,574	41,557	150,183	42,000 - 187,000
Food Stores	$17,872,024 (7)	N/A	N/A	$17,872,024	$17,872,024	$439	$542	40,689	40,689	32,965	32,965	33,000 - 41,000
Totals	$68,513,873											
South and North Supercenters, and Costco Expansion												
General Merchandise	$58,867,984 (8)	$12,034,983	$39,958,939	$18,909,045	$46,833,001	$207	$257	91,381	226,329	73,557	182,183	74,000 - 226,000
Food Stores	$21,344,090 (8)	N/A	N/A	$21,344,090	$21,344,090	$439	$542	48,594	48,594	39,370	39,370	39,000 - 49,000
Totals	$80,212,074											

Notes:
(1) Estimated store over performance based on the difference between existing average store sales per square foot in Exhibit 16 and the national and western region medians for discount department stores. Estimates from Exhibit 16 adjusted for inflation at 3.0 percent per year.
(2) Maximum sales diversion less estimated store over-performance.
(3) Refer to Exhibit 16. Adjusted for inflation at 3.0 percent per year.
(4) These findings are cited in Exhibit 24 and the report.
(5) Refer to Exhibit 10 for maximum sales diversion figures.
(6) Under this scenario Chico's existing general merchandise stores are open to be able to withstand the competitive impact of the Supercenter store with no resultant store closures.
(7) Maximum sales diversion equivalent to maximum diversion for the South Supercenter noted above, and maximum diversion in Exhibit 20 for the North Supercenter Store.
(8) Maximum sales diversion equivalent to maximum diversion for the South and North Supercenter noted above, and the maximum diversion in Exhibit 22 for the Costco expansion.

Source: Sedway Group.
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EXHIBIT 24
MAXIMUM DIVERTED SALES IMPACTS
SOUTH CHICO SUPERCENTER AND CUMULATIVE
2008 ESTIMATE (IN MILLIONS)

Store Category	Maximum Diversion	Number of Years to Mitigate (1)	Comments
South Supercenter Store (2)			
General Merchandise	($11.1)	0-3	General Merchandise stores were performing above the regional median in the amount of $12.0 million and above the national median by $40.0 million in 2008. Thus, Chico's general merchandise stores should be able to weather a temporary reduction in store sales totaling an equivalent of the lower estimate (i.e., $12.0 million). These sales are anticipated to be replaced through population growth within three years.
Food Stores	($8.3)	2-3	Food Stores in 2004 were performing at the national median but were under performing relative to the regional median. While an $8.3 million sales impact will likely be mitigated within two years because of population growth, this level of sales is equivalent to support for approximately 15,000 to 19,000 square feet.(3) Thus, if Chico food stores cannot withstand a temporary downturn in sales, it is possible that one existing conventional grocery or less likely, a price-impact warehouse store, may close. It is unlikely any niche market will close due to these impacts.
Total	($19.4)		
Total South and North Supercenter Cumulative			
General Merchandise (5)	($50.6)	2.5-5+	Net of the above-referenced over performance ($12.0 to $40.0 million in 2008 dollars), the maximum sales diversion is reduced to $10.7 to $38.6 million. Chico is projected to require 2.5 or more years to generate this level of additional demand, which is equivalent to the support of roughly 42,000 to 187,000 square feet of space. (4) Thus, it appears at minimum one mid-sized store is at risk of closing, with the maximum potential of two to three stores, depending upon their size.
Food Stores (6)	($17.9)	3-4	The estimated $17.9 million in diverted food store sales is equivalent to around 33,000 to 41,000 square feet of supportable space.(3) If the existing stores are not strong enough to withstand a potential two- to three-year downturn in sales, then one existing conventional grocery or price-impact warehouse store may close. This could instead include two of the City's smaller more conventional stores. It is unlikely any niche market will close due to these impacts.
Total	($68.5)		

Continued…

EXHIBIT 24
MAXIMUM DIVERTED SALES IMPACTS
SOUTH CHICO SUPERCENTER AND CUMULATIVE
2008 ESTIMATE (IN MILLIONS)

Store Category	Maximum Diversion	Number of Years to Mitigate (1)	Comments
South and North Supercenters, and Costco Expansion			
General Merchandise (7)	($58.9)	4-5+	Net of the referenced over performance ($12.0 to $40.0 million in 2008 dollars), the maximum sales diversion is reduced to $18.9 to $46.8 million. Chico is projected to require four to more than five years to generate this level of additional demand, which is equivalent to the support of roughly 74,000 to 226,000 square feet of space. Thus, it appears at minimum one mid-sized store is at risk of closing, with the maximum potential of three or more stores, depending upon their size.
Food Stores (8)	($21.3)	3-4	The estimated $21.3 million in diverted food store sales is equivalent to around 39,000 to 49,000 square feet of supportable space. If the existing stores are not strong enough to withstand a potential two- to three-year downturn in sales, then one existing conventional grocery or price-impact warehouse store may close. This could instead include two of the City's smaller more conventional stores. It is unlikely any niche market will close due to these impacts.
Total	($80.2)		

Notes:
(1) Refer to Exhibit 13 for estimated sales generated by new population growth and Chico's estimated sales capture.
(2) Refer to Exhibit 10 for maximum sales diversion figures.
(3) This assumes the national ($390) and regional ($482) sales medians cited in Exhibit 16, inflated 3.0 percent per year to 2008 dollars, resulting in $439 per square foot, for the national median and $542 per square foot for the regional median.
(4) This assumes the national ($184) and regional ($228) sales medians cited in Exhibit 16, inflated 3.0 percent per year to 2008 dollars, resulting in $207 per square foot, for the national median and $257 per square foot for the regional median.
(5) General Merchandise impact equivalent to maximum diversion for the South Supercenter noted above, and maximum diversion in Exhibit 20 for the North Supercenter Store.
(6) Food Stores impact equivalent to maximum diversion for the South Supercenter noted above, and maximum diversion in Exhibit 20 for the North Supercenter Store.
(7) General Merchandise impact is equivalent to maximum diversion for the South and North Supercenter note above, and the maximum diversion in Exhibit 22 for the Costco expansion.
(8) Food Stores impact is equivalent to maximum diversion for the South and North Supercenter note above, and the maximum diversion in Exhibit 22 for the Costco expansion.

Sources: Sedway Group.
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APPENDIX B:
COMPARATIVE FOOD SALES ANALYSIS

APPENDIX B
ESTIMATE OF WAL-MART SUPERCENTER
GROCERY SALES BASED ON PROGRESSIVE GROCER DATA
2004 AND 2008

Category	Data
Progressive Grocer: 2004 Selling Area Assumptions (1)	
Estimated Annual Sales (as of 2/2004)	$66,465,100,000
Total Selling Area Sq. Ft. (2)	95,938,000
Average Sales per Sq. Ft. of Selling Area	$693
Progressive Grocer Data Applied to Gross Supercenter Grocery Area: 2004	
Total Net Grocery Sq. Ft. of Selling Area (3)	36,197
Progressive Grocer Estimated Sales per Sq. Ft.	$693
Total Grocery Sales Based on Selling Area	$25,077,000
Total Gross Grocery Sq. Ft., Selling Area and Stockroom (4)	55,729
Average Sales per Gross Sq. Ft.	$450
Progressive Grocer Data, 2008	
Average Sales per Gross Sq. Ft. (2008 Dollars) (5)	$506
Sedway Group Estimated Sales, 2008	
Per Gross Sq. Ft. Sales Estimate Included in Report (6)	$460

Notes:
(1) Based on information provided by the Progressive Grocer, The Super 50 report date May 2004. Includes sales estimates for supermarket type merchandise only, per Progressive Grocer.
(2) Square footage is only for public selling area, and not gross-leaseable or storage space.
(3) Refer to Exhibit 1.
(4) Refer to Exhibit 1.
(5) Inflated from 2004 by 3.0 percent per year.
(6) Refer to Exhibit 2.

Sources: Progressive Grocer, The Super 50, May 2004; and Sedway Group.
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