3.1 - Aesthetics, Light, and Glare

3.1.1 - Introduction

This section describes the existing aesthetics, light, and glare setting and potential effects from project implementation on visual resources and the site and its surroundings. Descriptions and analysis in this section are based on site reconnaissance by FCS, as well as review of the Chico 2030 General Plan, Chico Municipal Code, the City of Chico Design Guidelines Manual, and project plans.

3.1.2 - Environmental Setting

Visual Character

Regional Setting

The City of Chico, population 89,634, is located in the eastern portion of the Sacramento Valley at the transition from the valley floor to the foothills. Chico is the largest city in Butte County, as well as in the region between the Sacramento metro area and Redding. The City is characterized by a traditional grid-pattern downtown area that features a number of historic buildings, with more modern development at the periphery.

The City is bisected northeast-to-southwest by several waterways, including Butte Creek, Big Chico Creek, Little Chico Creek, Comanche Creek/Edgar Slough, and Mud Creek/Sycamore Creek, that empty into the Sacramento River west of the city limits. The State Route 99 (SR-99) corridor and the Union Pacific Railroad cross the City in a northwest-to-southeast direction. Notable landmarks in Chico include Bidwell Park, Chico State University, and the Senator Theater.

Project Site

The project site contains Walmart Store No. 2044 and associated parking and landscaped areas, and a 10.62-acre parcel to the south that contains undeveloped land. The existing Walmart store opened in 1994 and is 131,302 square feet in total area (indoor and outdoor). The store retails general merchandise and a limited amount of food and beverage items, and operates between 6 a.m. and 12 a.m. midnight, 7 days a week. The parking lot is landscaped with mature ornamental trees, including Chinese pistache, Chinese hackberry, London planetree, pin oak, cork oak, and crepe myrtle.

Vehicular access is taken from three driveways on Baney Lane (two of which allow full access and the third which allows only left-in, right-in, and right-out turning movements); a right-in, right-out driveway on Forest Avenue; and a service driveway from the Business Lane cul-de-sac. A Butte Regional Transit bus stop is located on Forest Avenue near the driveway entrance.

The undeveloped parcel contains two wooden freeway billboards that face SR-99, ornamental landscaping, weedy vegetation, and wetlands. Two utility boxes and associated concrete pad are located near the Forest Avenue/Wittmeier Drive intersection. Approximately 0.02 acre of depressional seasonal wetland is located near the SR-99 frontage in the southwestern corner of the site.

A Class I bicycle/pedestrian path is located around the western, southern, and eastern perimeter of the Walmart store and parking lot. The path begins at the Business Lane cul-de-sac and continues around the perimeter of the Walmart parking area to the intersection of Forest Avenue/Baney Lane. A seating area with picnic tables is located adjacent to the path near the Walmart store.

Two existing, overhead Pacific Gas and Electric Company (PG&E) electrical lines parallel the path. The lines are 115 kilovolt (kv) and 15 kv.

Site photographs are provided in Exhibit 2-3.

Surrounding Land Uses

West

Business Lane, a two-lane privately owned roadway, and SR-99, a four-lane freeway, form the western boundary of the project site. West of Business Lane are two quick-serve restaurants. West of SR-99 are regional commercial uses. Views of the project site from Business Lane and the quick-serve restaurants are mostly unobstructed.

North

Baney Lane, a two-lane privately owned roadway, forms the northern boundary of the project site. North of Baney Lane are a multi-story hotel, undeveloped land, and a gas station/sandwich shop. Views of the project site from Baney Lane and the land uses to the east are unobstructed.

East

Forest Avenue, a four-lane divided arterial roadway, forms the eastern boundary of the project site. East of Forest Avenue are a bank and an office complex. Views of the project site from Forest Avenue and the land uses to the east are unobstructed.

South

An auto dealership and Wittmeier Drive, a public cul-de-sac, form the southern boundary of the project site. The auto dealership continues south of Wittmeier Drive. Views of the project site from Wittmeier Drive and the auto dealership are unobstructed.

Light and Glare

The project site contains existing sources of light and glare including freestanding parking lot lights (mounted at 42 feet above finished grade), building-mounted lighting, and illuminated signage associated with the existing Walmart store. The main “Walmart” wall sign over the store entrance is illuminated; the other existing signs are non-illuminated.

3.1.3 - Regulatory Framework

Local

City of Chico

General Plan

The Chico 2030 General Plan establishes the following goals and policies relevant to aesthetics, light, and glare:

- **Goal CD-2:** Enhance edges and corridors that represent physical boundaries, transitions and connections throughout the community.
- **Policy CD-2.3 (Corridor Improvements):** Improve corridors traversing the City to enhance their aesthetics and accessibility.
- **Goal CD-3:** Ensure project design that reinforces a sense of place with context sensitive elements and a human scale.
- **Policy CD-3.1 (Lasting Design and Materials):** Promote architectural design that exhibits timeless character and is constructed with high quality materials.
- **Goal CD-5:** Support infill and redevelopment compatible with the surrounding neighborhood.
- **Policy CD-5.1 (Compatible Infill Development):** Ensure that new development and redevelopment reinforces the desirable elements of its neighborhood including architectural scale, style, and setback patterns.
- **Policy OS-1.2 (Light Pollution):** Reduce excessive nighttime light and glare.
- **Action S-5.5.1 (Crime Deterring Design):** Consider the incorporation of design features such as strategic window placement, lighting techniques, and landscaping into development projects to discourage criminal activity

Municipal Code

The Chico Municipal Code contains several provisions that are relevant to aesthetics, light, and glare:

- **Chapter 19.18 (Site Design and Architectural Review):** All new commercial and non-single-family residential development is subject to design review. The City's Design Guidelines Manual provides site design, architecture, exterior lighting, and signage guidance and is intended to ensure that new development maintains a quality appearance over time.
- **Chapter 19.60.50 (Exterior Lighting):** Exterior lighting shall be architecturally integrated with the character of all structures, energy-efficient, and shielded or recessed so that direct glare and reflections are confined, to the maximum extent feasible, within the boundaries of the site. Exterior lighting shall be directed downward and away from adjacent properties and public rights-of-way. Shielded shall mean that the light rays are directed onto the site and the light source, whether bulb or tube, is not visible from an adjacent property. All parking and security lighting shall consist of full cutoff fixtures, unless a different cutoff classification is specifically authorized through the architectural review process. This section does not apply to sign illumination, traffic safety lighting, or public street lighting. No permanently installed lighting shall blink, flash, or be of unusually high intensity or brightness. All lighting fixtures shall be appropriate in scale, intensity, and height to the use they are serving.

Design Guidelines Manual

The City of Chico Design Guidelines Manual serves to guide the aesthetic qualities of development in Chico and maintain its dignified visual character by integrating timeless architectural and landscape design with the natural beauty of its surrounding environment. Applicants who observe the design guidance that the Manual offers can rely on a speedier and more predictable design review and approval process. However, the recommended design practices in the Design Guidelines Manual are non-binding and applicants may propose alternate solutions not identified in the Manual.

3.1.4 - Methodology

FirstCarbon Solutions evaluated aesthetics, light, and glare impacts through site reconnaissance in October 2015, review of project plans, and review of the Chico 2030 General Plan, Chico Municipal Code, and the City of Chico Design Guidelines Manual.

3.1.5 - Thresholds of Significance

According to the Environmental Checklist found in Appendix G of the CEQA Guidelines, aesthetics impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Have a substantial adverse effect on a scenic vista? (Refer to Section 7, Effects Found not to be Significant.)

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway? (Refer to Section 7, Effects Found not to be Significant.)

c) Substantially degrade the existing visual character or quality of the site and its surroundings?

d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

3.1.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Visual Character

Impact AES-1:	**The proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings.**

Impact Analysis

The proposed project consists of the expansion of the existing Walmart store and the development of a new fuel station and commercial uses in the southern portion of the site, as well as infrastructure improvements. In total, up to 120,000 square feet of new commercial uses (including the expanded Walmart) would be developed on the project site, which equates to a near doubling of building square footage on the site. The expanded project would have a Floor Area Ratio (FAR) of 0.22, which is within, and at the lower end of the FAR range of 0.2 to 2.0 established by the Chico 2030 General Plan for the Regional Commercial land use designation.

The project site is located within a Regional Center Opportunity Site, as defined by the Chico 2030 General Plan. The Opportunity Site generally extends along both sides of E. 20th Street between SR-99 and Forest Avenue. The General Plan description for the E. 20th Street Opportunity Site states in part that "[i]ts convenient location near an exit from State Route 99 increases its revitalization potential as a thriving regional commercial center." This area is characterized by a number of

regionally oriented commercial nodes such as the Chico Mall, Target, Kohl's, and the Wittmeier Auto Center, as well as highway oriented commercial uses (e.g., gas stations, hotels, and quick-serve restaurants). The project site and surrounding properties in this Opportunity Site are designated Regional Commercial by the Chico 2030 General Plan and zoned "CR—Regional Commercial" by the Chico Zoning Ordinance.

The proposed Walmart expansion would be similar in design and massing to the existing building. The roofline would range from 16 feet to 34 feet, 8 inches above finished grade. Additions to the west and east side would provide articulation to the sides of the building and avoid long, straight walls and seek to minimize the "big box" look. The stated intent of the design is to provide a pleasant and distinctive setting that strengthens the site plan, enhances building elevations, softens parking areas by providing additional landscaping, buffers service areas and maintains continuity with the public right-of-way. Elevations of the expanded Walmart store are provided in Exhibit 2-6a and Exhibit 2-6b.

The fuel station would consist of a canopy over eight pumps and a 1,500-square-foot kiosk. The design of the buildings that would occupy Parcels 2 and 3 is undetermined at this time; however, they would be expected to employ a contemporary architectural design theme, similar to the expanded Walmart store.

The existing wall signage on the Walmart store would be removed and replaced with 1,501.28 square feet of new signage, including two illuminated "Walmart" signs totaling 800 square feet. The Pharmacy/Merchandise drive-thru canopy and kiosk would have 91.06 square feet of signage. The fuel station would have 119.64 square feet of illuminated signage. A new 12-foot-high monument sign would be installed along the Baney Avenue frontage with 74 square feet of signage on each face, including a 45-square-foot sign panel and digital price signs for the fuel station. Signage associated with Parcels 2 and 3 will be established by the Planned Development Permit.

The Design Guidelines Manual call for minimizing views of automobiles from the public right-of-way by placing buildings close to streets and screening views of parking areas. Additionally, the Manual sets forth policies that call for a dominant element that is obvious from the street, and safe and convenience pedestrian and bicycle connectivity.

The proposed project's site plan seeks to emphasize the anchor use (Walmart) as seen from Forest Avenue, while also making the fuel station and Parcel 2 and Parcel 3 commercial uses complementary to the anchor. The fuel station and Parcel 2 and 3 uses would be set against the Forest Avenue and Wittmeier Drive street frontages. The main parking area in front of the Walmart store would be softened and screened by landscaping and a bicycle/pedestrian path along the Forest Avenue frontage. Finally, the proposed project would provide bicycle and pedestrian facilities including the aforementioned off-street path, as well as pedestrian connections between buildings, and bicycle racks and lockers in front of buildings. Collectively, these design practices are consistent with the guidance set forth in the Design Guidelines Manual. Note that the proposed project would be subject to Site Design and Architectural Review by the City's Architectural Review and Historic Preservation Board.

Overall, the proposed project represents the expansion of an existing retail use and the introduction of new complimentary commercial uses on a site with low aesthetic sensitivity that has been designated for Regional Commercial uses. The proposed site design and structures will be subject to the City's design review process, which will ensure that project details are consistent with City policies, development regulations, and design guidelines established by the General Plan, Municipal Code, and Design Guidelines Manual, respectively. The proposed project would not obstruct or interfere with scenic vistas, or damage scenic resources such as trees, rocks, or outcroppings because the project is located in an area where such scenic resources do not exist. Therefore, the proposed project would not substantially degrade the visual character of the project site or its surroundings. Impacts to the visual character or quality of the site would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Light and Glare

Impact AES-2:	**The proposed project would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.**

Impact Analysis

The project site contains existing sources of light and glare, including freestanding parking lot lights (mounted at 42 feet above finished grade), building mounted lighting, and illuminated signage associated with the existing Walmart store. Although the store is open for business between the hours of 6 a.m. and 12 a.m. (midnight), 7 days a week, parking lot lights and building-mounted lighting are illuminated at times when the store is closed for business for safety and security purposes.

As part of the Walmart store expansion, the existing building-mounted lighting and illuminated signage would be removed and replaced. The existing 42-foot freestanding parking lot lights are proposed to remain as is. Illuminated signage on the expanded Walmart store would total 800 square feet and be limited to the "Walmart" signs over the main entrance and on the rear and left elevations (400 square feet for each sign). Overall, there would not be a significant increase in light and glare on the Walmart portion of the project site relative to existing conditions.

The development of the fuel station (including kiosk) and Parcels 2 and 3 would result in new freestanding parking lot lights, building-mounted lighting, and illuminated signage. The fuel station canopy would feature illuminated signs totaling 119.64 square feet displaying the brand name of the operator and fuel prices. This type of lighting and illuminated signage would be similar to other fuel

stations in the project vicinity (e.g., the Sinclair gas station). Signage associated with Parcels 2 and 3 will be established by the Planned Development Permit.

Additionally, a new 12-foot-high monument sign would be installed along the Baney Avenue frontage. The sign would have 74 square feet of signage on each face, including a 45-square-foot sign panel and digital price signs for the fuel station.

All exterior lighting fixtures would be subject to the provisions of Municipal Code 19.60.50, which requires that new lighting must be architecturally integrated with the character of all structures, energy efficient, and shielded or recessed to prevent light and glare spillover onto neighboring properties.

Additionally, the Design Guidelines Manual calls for designing architecturally integrated, energy-efficient, and shielded or recessed exterior lighting so that direct glare and reflections are minimized and confined within the boundaries of the site. The Manual indicates that parking lot light fixtures should be below the tree canopy and discourages new fixtures that are taller than 18 feet above grade.

The proposed project's new exterior lighting fixtures would consist of light-emitting diodes and employ cut off shielding that directs lighting downward; thus, it would be consistent with the applicable Municipal Code and Design Guidelines Manual provisions. Additionally, new parking lot light fixtures would be no more than 18 feet above grade. (The existing 42-foot parking lot lights are proposed to remain unchanged and only new parking lot lights would be 18 feet in height.)

For these reasons, light and glare impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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3.2 - Air Quality/Greenhouse Gas Emissions

This section describes the existing air quality setting and potential effects from project implementation on the site and its surrounding area. FirstCarbon Solutions performed air quality analysis for the proposed project, which included construction and operational criteria pollutant modeling, a Health Risk Assessment, and greenhouse gas emissions modeling. The air quality modeling assumptions and Health Risk Assessment, including model outputs, are provided in **Appendix B**.

3.2.1 - Environmental Setting

Air Basin Overview

The proposed project is located within the City of Chico in Butte County within the Sacramento Valley Air Basin (Air Basin). The Air Basin covers 11 counties, including all of Sacramento, Yolo, Yuba, Sutter, Colusa, Glenn, Butte, Tehama, and Shasta counties and parts of Solano and Placer counties. The climate in the Air Basin is characterized by hot, dry summers and cool, wet winters. Chico's annual average temperature is 61 degrees Fahrenheit, with summer highs usually in the 90s and winter lows usually in the 30s. Rainfall in Chico averages about 26 inches per year, with about 55 percent of rainfall occurring in winter and 2 percent during summer. Prevailing winds are moderate in strength and vary from dry land flows from the north to moist ocean breezes from the south. The mountains surrounding the Air Basin create a barrier to airflow, which under certain meteorological conditions trap pollutants in the Air Basin.

Air Pollutants

Criteria Air Pollutants

For reasons described below in the Regulatory Framework section, the criteria pollutants of greatest concern for the project area are ozone, particulate matter with aerodynamic diameter of 10 microns or less and particulate matter with aerodynamic diameter of 2.5 microns or less (PM_{10}, and $PM_{2.5}$). Carbon monoxide is of less concern in the Air Basin because it is classified as an attainment area for this criteria pollutant.

Toxic Air Contaminants

In addition to the criteria pollutants, toxic air contaminants (TACs), many of which are also hazardous air pollutants (HAPs), are another group of pollutants of concern. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria pollutants for which acceptable levels of exposure can be determined and for which the state and federal governments have set ambient air quality standards.

According to the California Almanac of Emissions and Air Quality, the majority of the estimated health risk from TACs for the State of California can be attributed to relatively few compounds, the most important of which is diesel particulate matter (DPM) from diesel-fueled engines.

Diesel Particulate Matter

The California Air Resources Board (ARB) identified the PM emissions from diesel-fueled engines as a TAC in August 1998 under California's TAC program. The State of California, after a 10-year research program, determined in 1998 that DPM from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic (long-term) health risk. The California Office of Environmental Health Hazard Assessment (OEHHA) recommends using a 70-year exposure duration for determining residential cancer risks. DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled vehicles contribute approximately 40 percent of the statewide total, with an additional 57 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units.

Asbestos

Asbestos is listed as a TAC by the California ARB and as a Hazardous Air Pollutant (HAP) by the United States Environmental Protection Agency (EPA). Naturally occurring asbestos areas are identified by the type of rock found in the area. Asbestos-containing rocks found in California are ultramafic rocks, including serpentine rocks. Crushing or breaking these rocks, through construction or other means, can release asbestiform fibers into the air. Asbestos emissions can result from the sale or use of asbestos-containing materials, road surfacing with such materials, grading activities, and surface mining. The risk of disease is dependent upon the intensity and duration of exposure. When inhaled, asbestos fibers may remain in the lungs and with time may be linked to such diseases as asbestosis, lung cancer, and mesothelioma.

Greenhouse Gases (GHGs)

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. There is a general scientific consensus that global climate change is occurring, caused in whole or in part by increased emissions of GHGs that keep the Earth's surface warm by trapping heat in the Earth's atmosphere, in much the same way as glass traps heat in a greenhouse. The Earth's climate is changing because human activities, primarily the combustion of fossil fuels, are altering the chemical composition of the atmosphere through the buildup of GHGs. GHGs are released by the combustion of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[1]

Carbon Dioxide (CO_2)

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic outgassing, decomposition of organic matter and evaporation from the oceans. Anthropogenic sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production and deforestation. Anthropogenic sources of CO_2 amount to over 30 billion tons per year, globally. Natural sources release substantially larger amounts of CO_2. Nevertheless, natural removal

[1] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the naturally occurring greenhouse effect is necessary to keep our planet at a comfortable temperature.

processes, such as photosynthesis by land and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.

Methane (CH_4)

Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California.

Nitrous Oxide (N_2O)

Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion produce N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California.

Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF_6)

HFCs are primarily used as substitutes for ozone depleting substances regulated under the Montreal Protocol.[2] PFCs and SF_6 are emitted from various industrial processes including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no primary aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs.

The magnitude of the impact on global warming differs among the GHGs. The effect each GHG has on climate change is measured as a combination of the volume of its emissions, and its global warming potential, expressed as a function of how much warming would be caused by the same mass of CO_2. Thus, GHG emissions are typically measured in terms of pounds or tons of CO_2 equivalents (CO_2e). HFCs, PFCs, and SF_6 have a greater global warming potential than CO_2. In other words, these other GHGs have a greater contribution to global warming than CO_2 on a per mass basis. However, CO_2 has the greatest impact on global warming because of the relatively large quantities of CO_2 emitted into the atmosphere.

Local Air Quality

Meteorology acts on the emissions released into the atmosphere to produce pollutant concentrations. These airborne pollutant concentrations are measured throughout California at air quality monitoring sites. The ARB operates a statewide network of monitors. Data from this network are supplemented with data collected by local air districts, other public agencies, and private contractors.

[2] The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to project the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

The air quality monitoring station closest to the project site is the Chico-East Avenue Monitoring Station (Chico Station), which is located approximately 7.0 miles north of the project site at 984 East Avenue, Chico. Table 3.2-1 summarizes the recorded ambient air data at the Chico Station for years 2012 through 2014. As shown in Table 3.2-1, the recorded data show exceedances of the California standards for ozone (O_3) (1-hour and 8-hour) and PM_{10} (24-hour and annual), and federal standards for O_3 (8-hour) and $PM_{2.5}$ (24-hour), on one or more occasions from 2012 through 2014. No exceedances of either the state or national standards were recorded for nitrogen dioxide (NO_2).

Table 3.2-1: Ambient Air Monitoring Data

Air Pollutant	Averaging Time	Item	2012	2013	2014
Ozone	1 Hour	Max 1 Hour (ppm)	0.077	0.086	0.096
		Days > State Standard (0.09 ppm)	0	0	1
	8 Hour	Max 8 Hour (ppm)	0.070	0.076	0.077
		Days > State Standard (0.07 ppm)	0	1	2
		Days > National Standard (0.075 ppm)	0	1	1
Nitrogen dioxide (NO_2)	Annual	Annual Average (ppb)	ND	8	7
		Days > National Standard (9 ppb)	0	0	0
	1 Hour	Max 1 Hour (ppb)	39.1	42.3	42.7
		Days > National Standard (100 ppb)	0	0	0
Inhalable coarse particles (PM_{10})	24 hour	24 Hour ($\mu g/m^3$)	55.6	59.0	40.1
		Days > State Standard (50 $\mu g/m^3$)	1	1	0
		Days > National Standard (150 $\mu g/m^3$)	0	0	0
	Annual	Annual Average ($\mu g/m^3$)	16.8	24.3	19.4
		Annual > State Standard (20 $\mu g/m^3$)	0	Yes	0
Fine particulate matter ($PM_{2.5}$)	24 Hour	24 Hour ($\mu g/m^3$)	22.5	38.8	58.6
		Days > National Standard (35 $\mu g/m^3$)	0	2	1
	Annual	Annual Average ($\mu g/m^3$)	ND	10.0	8.8
		Annual > State Standard (12 $\mu g/m^3$)	0	0	0

Notes:
> = exceed
ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
ppb = parts per billion
ND = no data
max = maximum
State Standard = California Ambient Air Quality Standard
National Standard = National Ambient Air Quality Standard
Measurements are from the Chico-East Avenue Station
Source: ARB 2016a.

Local Sources of Air Pollution

Exhaust gas from motor vehicles that travel along the nearby roadways constitute a major source of ambient air pollutants within the project area. Nearby sources of air pollution include State Route 99 and Forest Avenue as well as emissions created from the other nearby commercial retail uses.

Sensitive Receptors

Some population groups such as children, the elderly, and persons with pre-existing respiratory or cardiovascular illness are more sensitive to air pollution than others. BCAQMD defines sensitive receptor locations as schools, parks and playgrounds, day care centers, nursing homes, hospitals, and residential dwelling units. Residential areas are considered sensitive to air pollution because residents, including children and the elderly, tend to be at home for extended periods of time, resulting in sustained exposure to pollutants. Sensitive receptors may also be impacted by fugitive dust and emissions generated by construction activities.

The nearest sensitive receptors to the project site are single-family homes located as near as 330 feet east of the project site. The nearest school is Butte College Chico Center that is located 1,100 feet to the south and the nearest K-12 school is Chapman Elementary School located 0.35 mile (1,850 feet) to the northwest.

Attainment Status

The United States Environmental Protection Agency (EPA) and the ARB designate air basins where ambient air quality standards are exceeded as "nonattainment" areas. If standards are met, the area is designated as an "attainment" area. If there are inadequate or inconclusive data to make a definitive attainment designation, they are considered "unclassified." National nonattainment areas are further designated as marginal, moderate, serious, severe, or extreme as a function of deviation from standards.

Each standard has a different definition, or "form" of what constitutes attainment, based on specific air quality statistics. For example, the federal 8-hour CO standard is not to be exceeded more than once per year; therefore, an area is in attainment of the CO standard if no more than one 8-hour ambient air monitoring values exceeds the threshold per year. In contrast, the federal annual $PM_{2.5}$ standard is met if the 3-year average of the annual average $PM_{2.5}$ concentration is less than or equal to the standard.

The current attainment designations for the Butte County portion of the Air Basin are shown in Table 3.2-2. The Butte County portion of the Air Basin is designated as nonattainment for the state and federal ozone and $PM_{2.5}$ standards and the PM_{10} state standards.

Table 3.2-2: Butte County Portion of Sacramento Air Basin Attainment Status

Pollutant	Designation	
	State	Federal
Ozone—1-hour	Nonattainment	No Federal Standard
Ozone—8-hour	Nonattainment	Nonattainment

Table 3.2-2 (cont.): Butte County Portion of Sacramento Air Basin Attainment Status

Pollutant	Designation	
	State	Federal
Carbon monoxide	Attainment	Attainment
Nitrogen dioxide	Attainment	Attainment
Sulfur dioxide	Attainment	Attainment
PM_{10}—24 hour	Nonattainment	Attainment
PM_{10}—Annual	Nonattainment	No Standard
$PM_{2.5}$—24 hour	No State Standard	Nonattainment
$PM_{2.5}$—Annual	Nonattainment	Attainment
Source: BCAQMD, 2014.		

GHG Emissions

Potential Effects of Human Activity on Global Climate Change

Globally, climate change has the potential to impact numerous environmental resources through anticipated, though uncertain, impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of about 0.2 Celsius (°C) (0.36°F) per decade is projected, and there are identifiable signs that global warming is taking place, including substantial loss of ice in the Arctic.[3]

However, the understanding of GHG emissions, particulate matter, and aerosols on global climate trends is complex and involves varying uncertainties and a balance of different effects. In addition to uncertainties about the extent to which human activity rather than solar or volcanic activity is responsible for increasing warming, there is also evidence that some human activity has cooling, rather than warming, effects, as discussed in detail in numerous publications by the International Panel on Climate Change (IPCC), such as the Fifth Assessment Report (AR5) Working Group 1 Report "The Physical Science Basis."[4,5] Nonetheless, when all effects and uncertainties are considered together, the consensus is that human activity has contributed significantly to global warming. As stated in the AR5 discussion of Attribution of Climate Change, "It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century."[6]

[3] IPCC Fifth Assessment Report. Climate Change 2013: Working Group I Report: The Physical Science Basis. 2013. Website: http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf. Accessed December 2014.

[4] The IPCC was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme to assess scientific, technical and socio-economic information relevant for the understanding of climate change, its potential impacts and options for adaptation and mitigation. The IPCC has produced a series of Assessment Reports comprised of full scientific and technical assessments of climate change. The first assessment report (FAR), was developed in 1990.

[5] IPCC Fifth Assessment Report. Climate Change 2013: Working Group I Report: The Physical Science Basis. 2013. Figure SPM.5. Website: http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf. Accessed December 2014.

[6] IPCC Fifth Assessment Report. Climate Change 2013: Working Group I Report: The Physical Science Basis. Summary for Policymakers. Detection and Attribution of Climate Change. Website: http://www.climatechange2013.org/images/report /WG1AR5_SPM_FINAL.pdf. Accessed: December 2014.

Acknowledging uncertainties regarding the rate at which anthropogenic GHG emissions would continue to increase (based upon various factors under human control, such as future population growth and the locations of that growth; the amount, type, and locations of economic development; the amount, type, and locations of technological advancement; adoption of alternative energy sources; legislative and public initiatives to curb emissions; and public awareness and acceptance of methods for reducing emissions), and the impact of such emissions on climate change, the IPCC devises emission scenarios which utilize various assumptions about the rates of economic development, population growth, and technological advancement over the course of the next century. For the AR5, a set of four new scenarios, denoted Representative Concentration Pathways (RCP), were developed. RCPs are based on a combination of integrated assessment models, simple climate models, atmospheric chemistry and global carbon cycle models. The four RCPs include a mitigation scenario, two stabilizing scenarios, and one scenario with very high GHG emissions. "The RCPs can thus represent a range of 21st century climate policies, as compared with the no-climate policy of the Special Report on Emissions Scenarios (SRES) used in the AR3 and the AR4."[7]

The projected effects of global warming on weather and climate are likely to vary regionally, but are expected to include the following direct effects, according to the IPCC:[8]

- It is *very likely* that the Arctic sea ice cover will continue to shrink and thin and that Northern Hemisphere spring snow cover will decrease during the 21st century as global mean surface temperature rises. Global glacier volume will further decrease;
- It is virtually certain that there will be more frequent hot and fewer cold temperature extremes over most land areas on daily and seasonal timescales as global mean temperatures increase. It is very likely that heat waves will occur with a higher frequency and duration. Occasional cold winter extremes will continue to occur;
- Global surface temperature change for the end of the 21st century is *likely* to exceed 1.5°C relative to 1850 to 1900 for all RCP scenarios except the mitigation scenario. It is *likely* to exceed 2°C for the highest forcing scenario and one stabilizing scenario, and *more likely than not* to exceed 2°C for the remaining stabilizing scenario. Warming will continue beyond 2100 under all RCP scenarios except the mitigation scenario;
- The global ocean will continue to warm during the 21st century. Heat will penetrate from the surface to the deep ocean and affect ocean circulation;
- Climate change will affect carbon cycle processes in a way that will exacerbate the increase of CO_2 in the atmosphere (*high confidence*). Further uptake of carbon by the ocean will increase ocean acidification;
- Changes in the global water cycle in response to the warming over the 21st century will not be uniform. The contrast in precipitation between wet and dry regions and between wet and dry

[7] IPCC Fifth Assessment Report. Climate Change 2013: Working Group I Report: The Physical Science Basis. Summary for Policymakers. Detection and Attribution of Climate Change. Box SPM.1. Website: http://www.climatechange2013.org/images /report/WG1AR5_SPM_FINAL.pdf. Accessed: December 2014.

[8] IPCC Fifth Assessment Report. Climate Change 2013: Working Group I Report: The Physical Science Basis. Summary for Policymakers. Website: http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf. Accessed: December 2014.

seasons will increase, although there may be regional exceptions; Global mean sea level will continue to rise during the 21st century.

Cumulative emissions of CO_2 largely determine global mean surface warming by the late 21st century and beyond. Most aspects of climate change will persist for many centuries even if emissions of CO_2 are stopped.

Potential secondary effects from global warming include global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Potential Effects of Climate Change on State of California

According to the California Air Resources Board (ARB), some of the potential impacts in California of global warming may include loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years.[9] Several recent studies have attempted to explore the possible negative consequences that climate change, left unchecked, could have in California. These reports acknowledge that climate scientists' understanding of the complex global climate system, and the interplay of the various internal and external factors that affect climate change, remains too limited to yield scientifically valid conclusions on such a localized scale. Substantial work has been done at the international and national level to evaluate climatic impacts, but far less information is available on regional and local impacts. In addition, projecting regional impacts of climate change and variability relies on large-scale scenarios of changing climate parameters, using information that is typically at too general a scale to make accurate regional assessments.[10]

Below is a summary of some of the potential effects reported in an array of studies that could be experienced in California as a result of global warming and climate change.

Air Quality

Higher temperatures, conducive to air pollution formation, could worsen air quality in California. Climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. For other pollutants, the effects of climate change and/or weather are less well studied, and even less well understood. If higher temperatures are accompanied by drier conditions, the potential for large wildfires could increase, which, in turn, would further worsen air quality. However, if higher temperatures are accompanied by wetter, rather than drier conditions, the rains would tend to temporarily clear the air of particulate pollution and reduce the incidence of large wildfires, thus ameliorating the pollution associated with wildfires. Additionally, severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the State.[11]

[9] ARB. 2006. Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions. December.

[10] Kiparsky, M. and P.H. Gleick, 2003. Climate Change and California Water Resources: A Survey and Summary of the Literature. Oakland, CA: Pacific Institute for Studies in Development. July.

[11] California Climate Change Center (CCCC), 2006. Our Changing Climate: Assessing the Risks to California, CEC500-2006-077. July.

Water Supply

Uncertainty remains with respect to the overall impact of global climate change on future water supplies in California. For example, models that predict drier conditions (e.g., parallel climate model [PCM]) suggest decreased reservoir inflows and storage and decreased river flows, relative to current conditions. By comparison, models that predict wetter conditions (e.g., HadCM2) project increased reservoir inflows and storage, and increased river flows.[12]

A July 2006 technical report prepared by the California Department of Water Resources (DWR) addresses the State Water Project (SWP), the Central Valley Project, and the Sacramento-San Joaquin Delta. Although the report projects that "climate change will likely have a significant effect on California's future water resources . . . [and] future water demand," it also reports that "there is much uncertainty about future water demand, especially those aspects of future demand that will be directly affected by climate change and warming. While climate change is expected to continue through at least the end of this century, the magnitude and, in some cases, the nature of future changes is uncertain. This uncertainty serves to complicate the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood."[13] DWR adds that "it is unlikely that this level of uncertainty will diminish significantly in the foreseeable future."[14] Still, changes in water supply are expected to occur, and many regional studies have shown that large changes in the reliability of water yields from reservoirs could result from only small changes in inflows.[15]

Water purveyors, such as the California Water Service Company (CWSC) that services the City of Chico, are required by state law to prepare Urban Water Management Plans (UWMPs) (discussed below, under Regulatory Context for Greenhouse Gas Emissions and Climate Change) that consider climatic variations and corresponding impacts on long-term water supplies.[16] DWR has published a 2005 SWP Delivery Reliability Report, which presents information from computer simulations of the SWP operations based on historical data over a 73-year period (1922–1994). The DWR notes that the results of those model studies "represent the best available assessment of the delivery capability of the SWP." In addition, the DWR is continuing to update its studies and analysis of water supplies. The City's most recent UWMP (required 5 five years per the California Water Code), was adopted in June 2011 and incorporates this information from DWR.[17] Information from the UWMP can be incorporated into Water Supply Assessments (WSAs) and Water Verifications prepared for certain development projects in accordance with Cal. Water Code Section 10910, et seq. and Cal. Government Code Section 66473.7, et seq.

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[12] Brekke, L.D., et al. 2004. Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California. Journal of the American Water Resources Association (AWRA). 40(2): 149–164.

[13] DWR. 2006. Progress on Incorporating Climate Change into Management of California Water Resources. July.

[14] Ibid.

[15] Kiparsky 2003, op. cit; DWR, 2005, op. cit.; Cayan, D., et al, 2006. Scenarios of Climate Change in California: An Overview (White Paper, CEC-500-2005-203-SF). February.

[16] California Water Code, Section 10631(c).

[17] EBMUD. Urban Water Management Plan 2010. http://www.ebmud.com/sites/default/files/pdfs/UWMP-2010-2011-07-21-web-small.pdf. Accessed: December 2014.

Hydrology

As discussed above, climate change could potentially affect the following: the amount of snowfall, rainfall, and snow pack; the intensity and frequency of storms; flood hydrographs (flash floods, rain or snow events, coincidental high tide and high runoff events); sea level rise and coastal flooding; coastal erosion; and the potential for salt water intrusion. Sea level rise can be a product of global warming through two main processes—expansion of seawater as the oceans warm and melting of ice over land. A rise in sea levels could result in coastal flooding and erosion and could also jeopardize California's water supply. In particular, saltwater intrusion would threaten the quality and reliability of the state's major fresh water supply that is pumped from the southern portion of the Sacramento/San Joaquin River Delta. Increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Ecosystems and Wildlife

Increases in global temperatures and the potential resulting changes in weather patterns could have ecological effects on a global and local scale. In 2004, the Pew Center on Global Climate Change released a report examining the possible impacts of climate change on ecosystems and wildlife.[18] The report outlines four major ways in which it is thought that climate change could affect plants and animals: (1) timing of ecological events, (2) geographic range, (3) species' composition within communities, and (4) ecosystem processes such as carbon cycling and storage.

Local GHG Emissions

A community-wide baseline and projected GHG emissions inventory was conducted for the City of Chico (City of Chico 2008) and have been summarized in the City of Chico's 2020 Climate Action Plan (City of Chico 2011). The business-as-usual (BAU) GHG emissions projections for the City of Chico are shown in Table 3.2-3.

Table 3.2-3: City of Chico Business-As-Usual GHG Emissions Projections

Emissions Sector	Aggregate Emissions ($MTCO_2e$)				Percent of Total 2020 Emissions
	2005 Emissions	2012 Emissions	2015 Emissions	2020 Emissions	
Transportation	332,602	390,258	417,932	468,485	67.36
Waste	19,987	22,367	23,471	25,435	3.66
Residential Energy	84,039	93,657	98,109	106,004	15.24
Commercial Energy	77,313	85,157	88,757	95,100	13.67
Industrial Energy	391	431	449	481	0.07
Total Aggregate Emissions	514,332	591,869	628,718	695,505	100

Note:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source: City of Chico, 2011; City of Chico, 2015

[18] Parmesan, C. and H. Galbraith. 2004. Observed Impacts of Global Climate Change in the U.S., Arlington, VA: Pew Center on Global Climate Change. November.

Following adoption of the City's Climate Action Plan in 2011, the City's GHG emissions from 2005 to 2012 were estimated in a Community-Wide Greenhouse Gas Emissions Inventory, prepared by the Institute for Sustainable Development at California State University Chico in Summer 2015 (City of Chico 2015). This subsequent study found that between 2005 and 2012, the community-wide GHG emissions decreased by approximately 11.5 percent. The study notes that much of this reduction, however, is likely attributable to the global economic recession that occurred during the interim years, and as the nation and the State recover from the recession, and considering sharp decreases in fuel costs during 2014–2015, some of the reductions will likely be reversed. Overall, the study found that GHG emissions have been decreasing community-wide as a result of utility-level actions, implementation of state-wide regulations, and macro-economic conditions, but also as a result of local actions taken by a range of independent actors in the community and the City itself. These decreases occurred despite a population growth of 10.8 percent during the 8-year period inventoried. The study concludes that the City appears to be on track to meet the CAP's interim target of 10 percent below 2005 levels.

3.2.2 - Regulatory Framework

Air pollutants are regulated at the national, state, and air basin level; each agency has a different level of regulatory responsibility. The United States Environmental Protection Agency (EPA) regulates at the national level. The California Air Resources Board (ARB) regulates at the state level and the Butte County Air Quality Management District (BCAQMD) regulates air pollutants within the County.

Federal and State

The EPA handles global, international, national, and interstate air pollution issues and policies. The EPA sets national vehicle and stationary source emission standards, oversees approval of all State Implementation Plans, provides research and guidance for air pollution programs, and sets National Ambient Air Quality Standards, also known as federal standards or national standards. There are national standards for six common air pollutants, called criteria air pollutants, which were identified from provisions of the Clean Air Act of 1970. The criteria pollutants are:

- Ozone
- Particulate matter (PM_{10} and $PM_{2.5}$)
- Nitrogen dioxide
- Carbon monoxide (CO)
- Lead
- Sulfur dioxide

The national standards were set to protect public health, including that of sensitive individuals; thus, the standards continue to change as more medical research is available regarding the health effects of the criteria pollutants. Primary national standards are the levels of air quality necessary, with an adequate margin of safety, to protect public health, as discussed in Ambient Air Quality Standards summary prepared by the ARB.

A State Implementation Plan is a document prepared by each state describing existing air quality conditions and measures that will be followed to attain and maintain national standards. The State Implementation Plan for the State of California is administered by the ARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. The ARB also administers California Ambient Air Quality Standards for the 10 air pollutants designated in the

California Clean Air Act. The 10 state air pollutants are the six national standards listed above as well as the following: visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride.

The national and state ambient air quality standards, the most relevant effects, the properties, and sources of the pollutants are summarized in Table 3.2-4.

Table 3.2-4: Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Ozone	1 Hour	0.09 ppm	—	Irritate respiratory system; reduce lung function; breathing pattern changes; reduction of breathing capacity; inflame and damage cells that line the lungs; make lungs more susceptible to infection; aggravate asthma; aggravate other chronic lung diseases; cause permanent lung damage; some immunological changes; increased mortality risk; vegetation and property damage.	Ozone is a photochemical pollutant as it is not emitted directly into the atmosphere, but is formed by a complex series of chemical reactions between reactive organic gases (ROG), which is also called volatile organic compounds (VOC), nitrous oxides (NO_x), and sunlight. Ozone is a regional pollutant that is generated over a large area and is transported and spread by the wind.	Ozone is a secondary pollutant; thus, it is not emitted directly into the lower level of the atmosphere. The primary sources of ozone precursors (VOC and NO_x) are mobile sources (on-road and off-road vehicle exhaust).
	8 Hour	0.070 ppm	0.075 ppm			
Carbon monoxide (CO)	1 Hour	20 ppm	35 ppm	Ranges depending on exposure: slight headaches; nausea; aggravation of angina pectoris (chest pain) and other aspects of coronary heart disease; decreased exercise tolerance in persons with peripheral vascular disease and lung disease; impairment of central nervous system functions; possible increased risk to fetuses; death.	CO is a colorless, odorless, toxic gas. CO is somewhat soluble in water; therefore, rainfall and fog can suppress CO conditions. CO enters the body through the lungs, dissolves in the blood, replaces oxygen as an attachment to hemoglobin, and reduces available oxygen in the blood.	CO is produced by incomplete combustion of carbon-containing fuels (e.g., gasoline, diesel fuel, and biomass). Sources include motor vehicle exhaust, industrial processes (metals processing and chemical manufacturing), residential wood burning, and natural sources.
	8 Hour	9.0 ppm	9 ppm			
Nitrogen dioxide[b] (NO_2)	1 Hour	0.18 ppm	0.100 ppm	Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; contributions to atmospheric discoloration; increased visits to hospital for respiratory illnesses.	During combustion of fossil fuels, oxygen reacts with nitrogen to produce nitrogen oxides—NO_x (NO, NO_2, NO_3, N_2O, N_2O_3, N_2O_4, and N_2O_5). NO_x is a precursor to ozone, PM_{10}, and $PM_{2.5}$ formation. NO_x can react with compounds to form nitric acid and related small particles and result in PM related health effects.	NO_x is produced in motor vehicle internal combustion engines and fossil fuel-fired electric utility and industrial boilers. Nitrogen dioxide forms quickly from NO_x emissions. NO_2 concentrations near major roads can be 30 to 100 percent higher than those at monitoring stations.
	Annual	0.030 ppm	0.053 ppm			

Table 3.2-4 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfur dioxide[c] (SO_2)	1 Hour	0.25 ppm	0.075 ppm	Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient sulfur dioxide levels. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.	Sulfur dioxide is a colorless, pungent gas. At levels greater than 0.5 ppm, the gas has a strong odor, similar to rotten eggs. Sulfur oxides (SO_x) include sulfur dioxide and sulfur trioxide. Sulfuric acid is formed from sulfur dioxide, which can lead to acid deposition and can harm natural resources and materials. Although sulfur dioxide concentrations have been reduced to levels well below state and federal standards, further reductions are desirable because sulfur dioxide is a precursor to sulfate and PM_{10}.	Human caused sources include fossil-fuel combustion, mineral ore processing, and chemical manufacturing. Volcanic emissions are a natural source of sulfur dioxide. The gas can also be produced in the air by dimethylsulfide and hydrogen sulfide. Sulfur dioxide is removed from the air by dissolution in water, chemical reactions, and transfer to soils and ice caps. The sulfur dioxide levels in the State are well below the maximum standards.
	3 Hour	—	0.5 ppm			
	24 Hour	0.04 ppm	0.14 (for certain areas)			
	Annual	—	0.030 ppm (for certain areas)			
Particulate matter (PM_{10})	24 hour	50 µg/m^3	150 µg/m^3	• Short-term exposure (hours/days): irritation of the eyes, nose, throat; coughing; phlegm; chest tightness; shortness of breath; aggravate existing lung disease, causing asthma attacks and acute bronchitis; those with heart disease can suffer heart attacks and arrhythmias. • Long-term exposure: reduced lung function; chronic bronchitis; changes in lung morphology; death.	Suspended particulate matter is a mixture of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} refers to particulate matter that is between 2.5 and 10 microns in diameter, (one micron is one-millionth of a meter). $PM_{2.5}$ refers to particulate matter that is 2.5 microns or less in diameter, about one-thirtieth the size of the average human hair.	Stationary sources include fuel or wood combustion for electrical utilities, residential space heating, and industrial processes; construction and demolition; metals, minerals, and petrochemicals; wood products processing; mills and elevators used in agriculture; erosion from tilled lands; waste disposal, and recycling. Mobile or transportation related sources are from vehicle exhaust and road dust. Secondary particles form from reactions in the atmosphere.
	Mean	20 µg/m^3	—			
Particulate matter ($PM_{2.5}$)	24 Hour	—	35 µg/m^3			
	Annual	12 µg/m^3	12.0 µg/m^3			
Visibility reducing particles	8 Hour	See note below[d]				

Table 3.2-4 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Sulfates	24 Hour	25 µg/m^3	—	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardio-pulmonary disease; (d) vegetation damage; (e) degradation of visibility; (f) property damage.	The sulfate ion is a polyatomic anion with the empirical formula SO42−. Sulfates occur in combination with metal and/or hydrogen ions. Many sulfates are soluble in water.	Sulfates are particulates formed through the photochemical oxidation of sulfur dioxide. In California, the main source of sulfur compounds is combustion of gasoline and diesel fuel.
Lead[e]	30-day	1.5 µg/m^3	—	Lead accumulates in bones, soft tissue, and blood and can affect the kidneys, liver, and nervous system. It can cause impairment of blood formation and nerve conduction, behavior disorders, mental retardation, neurological impairment, learning deficiencies, and low IQs.	Lead is a solid heavy metal that can exist in air pollution as an aerosol particle component. Leaded gasoline was used in motor vehicles until around 1970. Lead concentrations have not exceeded state or federal standards at any monitoring station since 1982.	Lead ore crushing, lead-ore smelting, and battery manufacturing are currently the largest sources of lead in the atmosphere in the United States. Other sources include dust from soils contaminated with lead-based paint, solid waste disposal, and crustal physical weathering.
	Quarter	—	1.5 µg/m^3			
	Rolling 3-month average	—	0.15 µg/m^3			
Vinyl chloride [e]	24 Hour	0.01 ppm	—	Short-term exposure to high levels of vinyl chloride in the air causes central nervous system effects, such as dizziness, drowsiness, and headaches. Epidemiological studies of occupationally exposed workers have linked vinyl chloride exposure to development of a rare cancer, liver angiosarcoma, and have suggested a relationship between exposure and lung and brain cancers.	Vinyl chloride, or chloroethene, is a chlorinated hydrocarbon and a colorless gas with a mild, sweet odor. In 1990, ARB identified vinyl chloride as a toxic air contaminant and estimated a cancer unit risk factor.	Most vinyl chloride is used to make polyvinyl chloride plastic and vinyl products, including pipes, wire and cable coatings, and packaging materials. It can be formed when plastics containing these substances are left to decompose in solid waste landfills. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites.

Table 3.2-4 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Hydrogen sulfide	1 Hour	0.03 ppm	—	High levels of hydrogen sulfide can cause immediate respiratory arrest. It can irritate the eyes and respiratory tract and cause headache, nausea, vomiting, and cough. Long exposure can cause pulmonary edema.	Hydrogen sulfide (H2S) is a flammable, colorless, poisonous gas that smells like rotten eggs.	Manure, storage tanks, ponds, anaerobic lagoons, and land application sites are the primary sources of hydrogen sulfide. Anthropogenic sources include the combustion of sulfur containing fuels (oil and coal).
Volatile organic compounds (VOC)		There are no State or federal standards for VOCs because they are not classified as criteria pollutants.		Although health-based standards have not been established for VOCs, health effects can occur from exposures to high concentrations because of interference with oxygen uptake. In general, concentrations of VOCs are suspected to cause eye, nose, and throat irritation; headaches; loss of coordination; nausea; and damage to the liver, the kidneys, and the central nervous system. Many VOCs have been classified as toxic air contaminants.	Reactive organic gases (ROGs), or VOCs, are defined as any compound of carbon—excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate—that participates in atmospheric photochemical reactions. Although there are slight differences in the definition of ROGs and VOCs, the two terms are often used interchangeably.	Indoor sources of VOCs include paints, solvents, aerosol sprays, cleansers, tobacco smoke, etc. Outdoor sources of VOCs are from combustion and fuel evaporation. A reduction in VOC emissions reduces certain chemical reactions that contribute to the formulation of ozone. VOCs are transformed into organic aerosols in the atmosphere, which contribute to higher PM_{10} and lower visibility.
Benzene		There are no ambient air quality standards for benzene.		Short-term (acute) exposure of high doses from inhalation of benzene may cause dizziness, drowsiness, headaches, eye irritation, skin irritation, and respiratory tract irritation, and at higher levels, loss of consciousness can occur. Long-term (chronic) occupational exposure of high doses has caused blood disorders, leukemia, and lymphatic cancer.	Benzene is a VOC. It is a clear or colorless light-yellow, volatile, highly flammable liquid with a gasoline-like odor. The EPA has classified benzene as a "Group A" carcinogen.	Benzene is emitted into the air from fuel evaporation, motor vehicle exhaust, tobacco smoke, and from burning oil and coal. Benzene is used as a solvent for paints, inks, oils, waxes, plastic, and rubber. Benzene occurs naturally in gasoline at one to two percent by volume. The primary route of human exposure is through inhalation.

Table 3.2-4 (cont.): Description of Air Pollutants

Air Pollutant	Averaging Time	California Standard	Federal Standard[a]	Most Relevant Effects from Pollutant Exposure	Properties	Sources
Diesel particulate matter (DPM)		There are no ambient air quality standards for DPM.		Some short-term (acute) effects of DPM exposure include eye, nose, throat, and lung irritation, coughs, headaches, light-headedness, and nausea. Studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Human studies on the carcinogenicity of DPM demonstrate an increased risk of lung cancer, although the increased risk cannot be clearly attributed to diesel exhaust exposure.	Diesel PM is a source of $PM_{2.5}$—diesel particles are typically 2.5 microns and smaller. Diesel exhaust is a complex mixture of thousands of particles and gases that is produced when an engine burns diesel fuel. Organic compounds account for 80 percent of the total particulate matter mass, which consists of compounds such as hydrocarbons and their derivatives, and polycyclic aromatic hydrocarbons and their derivatives. Fifteen polycyclic aromatic hydrocarbons are confirmed carcinogens, a number of which are found in diesel exhaust.	Diesel exhaust is a major source of ambient particulate matter pollution in urban environments. Typically, the main source of DPM is from combustion of diesel fuel in diesel-powered engines. Such engines are in on-road vehicles such as diesel trucks, off-road construction vehicles, diesel electrical generators, and various pieces of stationary construction equipment.

Notes:
ppm = parts per million (concentration) μg/m^3 = micrograms per cubic meter Annual = Annual Arithmetic Mean 30-day = 30-day average Quarter = Calendar quarter

[a] Federal standard refers to the primary national ambient air quality standard, or the levels of air quality necessary, with an adequate margin of safety to protect the public health. All standards listed are primary standards except for 3-Hour SO_2, which is a secondary standard. A secondary standard is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[b] To attain the 1-hour nitrogen dioxide national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (0.100 ppm).

[c] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[d] Visibility reducing particles: In 1989, ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

[e] ARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source of effects, properties, and sources: South Coast Air Quality Management District 2007a; California Environmental Protection Agency 2002; California Air Resources Board 2009; United States Environmental Protection Agency 2003, 2009a, 2009b, 2010, 2011a, and 2012; National Toxicology Program 2011a and 2011b. Source of standards: California Air Resources Board 2013c.

Local

City of Chico General Plan

The Chico 2030 General Plan establishes the following goals and policies relevant to air quality and greenhouse gas emissions:

- **Goal SUS-1:** Balance the environment, economy and social equity, as defined in the General Plan, to create a sustainable Chico.
- **Policy SUS-1.1 (General Plan Consistency):** Ensure proposed development projects, policies, and programs are consistent with the General Plan.
- **Goal SUS-4:** Promote green development.
- **Policy SUS-4.2 (Water Efficient Landscaping):** Promote drought tolerant landscaping.
- **Policy SUS-4.3 (Green Development Practices):** Promote green development practices in private projects.
- **Goal SUS-5:** Increase energy efficiency and reduce non-renewable energy and resource consumption Citywide.
- **Goal SUS-6:** Reduce the level of greenhouse gas emissions Citywide.
- **Policy SUS-5.2 (Energy Efficient Design):** Support the inclusion of energy efficient design and renewable energy technologies in public and private projects.
- **Policy SUS-6.3 (Greenhouse Gas Emissions and CEQA):** Analyze and mitigate potentially significant increases in greenhouse gas emissions during project review, pursuant to the California Environmental Quality Act.
- **Policy SUS-6.4 (Community Trees):** Continue to support the planting and maintenance of trees in the community to increase carbon sequestration.
- **Goal CIRC-2:** Enhance and maintain mobility with a complete streets network for all modes of travel.
- **Policy CIRC-2.1 (Complete Streets):** Develop an integrated, multimodal circulation system that accommodates transit, bicycles, pedestrians, and vehicles; provides opportunities to reduce air pollution and greenhouse gas emissions; and reinforces the role of the street as a public space that unites the City.
- **Goal OS-4:** Improve air quality for a healthy City and region.
- **Policy OS-4.1 (Air Quality Standards):** Work to comply with state and federal ambient air quality standards and to meet mandated annual air quality reduction targets.
- **Policy OS-4.3 (Greenhouse Gas Emissions):** Implement and periodically update the Climate Action Plan to achieve incremental greenhouse gas emissions reductions.

City of Chico Climate Action Plan

The City of Chico adopted the City of Chico 2020 Climate Action Plan in 2012, which sets forth objectives and actions that will be undertaken to meet the City's GHG emission reduction target of 25 percent below 2005 base-year emissions levels by the year 2020. The GHG inventory completed by the City identified the 2005 baseline emissions level as 514,332 $MTCO_2e$ and that by 2020 for the BAU forecast is 695,504 $MTCO_2e$ per year. Therefore, the Climate Action Plan was developed to reach a target emission level of 385,749 $MTCO_2e$ by the year 2020. This is equivalent to a 44.5 percent reduction over BAU 2020 greenhouse gas emissions rates by the year 2020. Below is a list of

measures from the Climate Action Plan for new development projects to meet and which aid in implementing the CAP:

- Consistency with key General Plan goals, policies, and actions that address sustainability, smart growth principles, multi-modal circulation improvements, and quality community design;
- Compliance with California's Title 24 Building Energy Efficiency Standards for Residential and Non-Residential Buildings;
- Compliance with the City's tree preservation ordinance;
- Incorporation of street trees and landscaping consistent with the City's Municipal Code;
- Consistency with the City's Design Guidelines Manual;
- Consistency with the State's Water Efficient Landscape Ordinance (Assembly Bill [AB] 1881);
- Compliance with the City's Residential Energy Conservation Ordinance, which requires energy and water efficiency upgrades at the point-of-sale, prior to transfer of ownership (e.g., attic insulation, programmable thermostats, water heater insulation, hot water pipe insulation, etc.);
- Provision of bicycle facilities and infrastructure as may be required by the City's Bicycle Master Plan;
- Installation of bicycle and vehicle parking consistent with the City's Municipal Code;
- Coordination with the Butte County Association of Governments to provide high quality transit service and infrastructure, where appropriate;
- Consistency with the Butte County Air Quality Management District's CEQA Handbook;
- Adherence to Butte County Air Quality Management District mitigation requirements for construction sites (e.g., dust suppression measures, reducing idling equipment, maintenance of equipment per manufacturer specs, etc.);
- Requirement for new employers of 100+ employees to submit a Transportation Demand Management Plan;
- Diversion of fifty percent (50%) of construction waste;
- Compliance with the City's Capital Improvement Plan, which identifies new multi-modal facilities and connections;
- Option to incorporate solar arrays in parking areas in lieu of tree shading requirements;
- Consistency with the City's Storm Drainage Master Plan.

3.2.3 - Thresholds of Significance

According to the CEQA Guidelines' Appendix G Environmental Checklist, to determine whether impacts to air quality are significant environmental effects, the following questions are analyzed and evaluated.

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

c) 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)?

d) Expose sensitive receptors to substantial pollutant concentrations?

e) Create objectionable odors affecting a substantial number of people?

On February 16, 2010, the Office of Administrative Law filed the CEQA Guideline Amendments with the Secretary of State. The Amendments became effective on March 18, 2010. The CEQA Guidelines amendments included two new checklist questions pertaining to greenhouse gas emissions, listed below:

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

This analysis will follow the guidance in the CEQA Guideline Amendments.

While the final determination of whether or not a project is significant is within the purview of the lead agency pursuant to CEQA Guidelines Section 15064(b), the BCAQMD recommends that its quantitative and qualitative air pollution thresholds be used to determine the significance of project emissions.

On November 30, 2015, the California Supreme Court in *Center for Biological Diversity v. California Department of Fish and Wildlife* ("*Newhall Ranch*") invalidated the GHG analysis for a large, master-planned residential development in Los Angeles County consisting of over 20,000 residential dwelling units and other uses, determining that the GHG significance finding was "not supported by a reasoned explanation based on substantial evidence." In particular, the Court upheld: (1) use of the statewide emissions reduction goal in AB 32 as a significance criterion, (2) use of the Scoping Plan's BAU model "as a comparative tool for evaluating efficiency and conservation efforts" of the Project, and (3) a comparison of the project's expected emissions to a BAU model rather than a baseline of pre-project conditions.

Notwithstanding, the Court invalidated the GHG analysis on the grounds that the "administrative record discloses no substantial evidence that the Newhall Ranch's project-level reduction of 31 percent in comparison to [BAU] is consistent with achieving AB 32's statewide goal of a 29 percent reduction from [BAU] . . . ." ("Nor is Justice Corrigan correct that our analysis 'assumes project-level reduction in greenhouse gas emissions must be greater than the reduction California is seeking to achieve statewide.' [internal citations omitted] . . . . [W]e only hold that DFW erred in failing to substantiate its assumption that the Scoping Plan's statewide measure of emissions reduction can also serve as the criterion for an individual land use project.") In so doing, the Court stated that the EIR failed to contain sufficient evidence to conclude that the "land use density" assumptions used in the EIR's GHG emissions model were comparable to the land use density assumptions used in the Scoping Plan's BAU model. To the extent the Scoping Plan's BAU scenario assumes population densities greater than the local density assumed in the EIR's BAU projection, the Court felt that the EIR's comparison of project reductions from BAU to reductions demanded in the Scoping Plan would be misleading. The Court also questioned whether "a greater degree of reduction may be needed" from new versus existing development to achieve the statewide goal set forth in AB 32.

Although the Court concluded that the Newhall Ranch EIR was inadequate, the Court outlined "potential pathways to compliance" that future EIRs could use to determine if GHG emissions from a given project are significant. The Court provided a few methods to meet compliance, including utilization of an adopted climate action plan or a greenhouse gas emission reduction plan to provide a basis for the tiering or streamlining of project-level CEQA analysis, which has been utilized in this analysis.

These thresholds are discussed under each impact section below.

3.2.4 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the proposed project and provides mitigation measures where appropriate.

Consistency with Air Quality Management Plan

Impact AIR-1:	**The project may conflict with or obstruct implementation of the applicable air quality plan.**

Impact Analysis

The Butte County portion of the Sacramento Air Basin is currently designated non-attainment for the state and federal ozone and $PM_{2.5}$ standards and the PM_{10} state standards. The current applicable air quality plan for the BCAQMD is the Northern Sacramento Valley Planning Area 2012 Triennial Air Quality Plan (Sacramento Valley Air Quality Engineering and Enforcement Professionals, 2013). A project would be judged to conflict with or obstruct implementation of the regional air quality plan if it would result in or induce growth in population, employment, land use, or regional vehicle miles traveled (VMT) that is inconsistent with the growth (and therefore the emissions projections) assumptions in the applicable attainment plan.

Although the adopted 2012 Air Quality Plan provides estimated ROG and NO_x emissions from 2006 to 2020 for the entire Northern Sacramento Valley, they are not apportioned by local air district, county, or municipality. Baseline and projected population and vehicle miles travelled data are also not provided by the 2012 Air Quality Plan. The BCAQMD CEQA Handbook recommends utilizing the Butte County Association of Governments (BCAG) Long-Term Regional Growth Forecasts (2014) to assess if the proposed project's growth in population, employment, or regional VMT are consistent with the growth assumptions utilized in the 2012 Air Quality Plan.

The BCAG Long-Term Regional Growth Forecasts provide growth forecasts for housing, population, and employment. Since the proposed project would consist of expansion of an existing shopping center, no housing would be constructed and therefore, no growth in population would occur from the proposed project and the only applicable growth forecast is employment. The Growth Forecasts found that in 2014 the employment of Butte County is 74,100 persons. For the medium scenario forecast, the employment of Butte County will be 81,998 persons by year 2020, or an increase of 7,898 persons. Since no employment assumptions have been provided for the proposed project, a standard employment rate of one job per 500 square feet has been utilized, which results in the proposed project generating 240 employees. This would represent 3.0 percent of the anticipated employment growth between 2014 and 2020. Over 32 projects of this size could be accommodated without exceeding the employment forecast for year 2020. Therefore, the proposed project would not exceed the growth forecasts utilized in the 2012 Air Quality Plan.

Since many of the BCAQMD's Rules were developed to meet the attainment goals of the 2012 Air Quality Plan, the BCAQMD CEQA Handbook recommends the inclusion of a conformity analysis of the applicable BCAQMD Rules. The applicable BCAQMD Rules to construction of the proposed project would include, Rule 205—Fugitive Dust Emissions, Rule 230—Architectural Coatings, and Rule 231—Emulsified Asphalt. The BCAQMD CEQA Handbook also recommends that applicants include in their project descriptions the various Best Management Practices (BMPs) that would minimize construction vehicle emissions and dust during construction. No such BMP measures were included with the project description for the project. Therefore, Mitigation Measure AIR-1 has been included to ensure that the construction phase of the project would not conflict with existing BCAQMD Rules and would meet the baseline assumptions associated with the modeling and mitigation of project-specific air quality construction impacts included under subsequent analysis in this section.

For operational emissions, the only anticipated source that is subject to BCAQMD's Rules is the proposed gas station. The applicable rules for gas stations include Rule 400—Permit Requirements, Rule 220—Hold Open Latch Requirements for Service Stations, Rule 221—Phase I Vapor Requirements for Storage Tanks, and Rule 222—Phase 2 Vapor Requirements for Storage Tanks. Pursuant to Rule 400, the project applicant will be required to obtain a BCAQMD permit for the proposed gas station prior to start of construction of the gas station. Compliance with Rules 220, 221, and 222, will be a condition detailed in the BCAQMD permit for the proposed gas station. Therefore, operation of the proposed project would not exceed any air emission standards provided in the BCAQMD Rules.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-1 During construction activities, the applicant shall:

(1) Adhere to the provisions of Butte County Air Quality Management District Rules 205, 230, and 231; and

(2) Incorporate specific Best Practices to minimize diesel exhaust and fugitive dust emissions during construction, as specified in Appendix C of the Butte County Air Quality Handbook, October 23, 2014, available at: http://bcaqmd.shasta.com/wp-content/uploads/CEQA-Handbook-Appendices-2014.pdf. Examples of these types of measures include, but are not limited to:

- Limiting idling of construction vehicles to 5 minutes or less.
- Ensuring that all small engines are tuned to the manufacturer's specifications.
- Powering diesel equipment with Air Resources Board-certified motor vehicle diesel fuel.
- Utilizing construction equipment that meets ARB's 2007 certification standard or cleaner.
- Using electric powered equipment when feasible.
- The applicant shall prepare and submit documentation (e.g., equipment plan or certification) to the City of Chico verifying compliance as part of the grading permit application.

Pursuant to the above, the developer shall prepare and submit a dust control plan consistent with Rule 205 prior to or in conjunction with building and/or grading permits, subject to approval by city staff, and shall note and demonstrate on the construction plans that architectural coatings and asphalt to be used for the project shall meet the standards set forth by District Rules 230 and 231. Additionally, the developer shall maintain material safety data sheets or other records at the construction site that document the content of volatile organic compounds (VOCs) of the architectural coatings and asphalt used at the project site, in compliance with District Rules 230 and 231.

Level of Significance After Mitigation

Less than significant impact.

Air Quality Standard Violation

Impact AIR-2: The project may violate an air quality standard or contribute substantially to an existing or projected air quality violation.

Impact Analysis

This analysis assesses the effects of the project's criteria pollutant emissions in comparison to BCAQMD thresholds of significance for short-term construction activities and long-term operation of

the project. The primary pollutants of concern during project construction and operation are the ozone precursors (ROG, NO_x), PM_{10}, and $PM_{2.5}$. The BCAQMD's CEQA Handbook has developed project level construction and operational thresholds for ROG, NO_x, and PM that can be utilized to determine if a project may violate an air quality standard or contribute substantially to an existing air quality violation.

Ozone is a secondary pollutant that can be formed miles away from the source of emissions through reactions of ROG and NO_x emissions in the presence of sunlight. Therefore, ROG and NO_x are termed ozone precursors. The Air Basin often exceeds the state and national ozone standards. Therefore, if the project emits a substantial quantity of ozone precursors, the project may contribute to an exceedance of the ozone standard. The Air Basin also exceeds air quality standards for PM_{10}, and $PM_{2.5}$; therefore, substantial project emissions may contribute to an exceedance for these pollutants. Projects within Butte County with regional emissions in excess of any of the thresholds presented in Table 3.2-5 for construction and operations are considered to have a significant air quality impact.

Table 3.2-5: BCAQMD Criteria Pollutant Thresholds of Significance

Pollutant	Construction		Operation (pounds per day)
	Pounds per Day	Tons per Year	
Reactive organic gases (ROG)	137	4.5	25
Oxides of nitrogen (NO_x)	137	4.5	25
Particulate matter (PM_{10})	80	—	80
Particulate matter ($PM_{2.5}$)	80	—	80
Source: BCAQMD, 2014			

Construction Emissions

Project construction activities were modeled using CalEEMod to determine the maximum daily emissions and annual emissions for comparison to the BCAQMD construction thresholds. As shown in Table 3.2-6, the project would exceed the maximum daily threshold for ROG during application of architectural coatings and would exceed the maximum annual threshold for NO_x. This would be considered a significant impact.

Table 3.2-6: Construction Criteria Air Pollutants Emissions Prior to Mitigation

Construction Phase	Air Pollutants (Average Daily Rates in pounds)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Demolition	8.34	86.42	4.88	4.11
Grading	9.36	105.17	18.33	10.07
Building Construction	5.68	45.18	4.12	2.97
Paving	3.50	26.77	1.71	1.43

Table 3.2-6 (cont.): Construction Criteria Air Pollutants Emissions Prior to Mitigation

Construction Phase	Air Pollutants (Average Daily Rates in pounds)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Architectural Coating	**145.17**	2.30	0.35	0.22
Maximum Daily Emissions	**145.17**	105.17	18.33	10.07
Significance Threshold[1]	137	137	80	80
Significant Impact?	**Yes**	No	No	No
Maximum Annual Emissions (Tons)	2.16	**6.14**	0.62	0.42
Significance Threshold	4.5	4.5	—	—
Significant Impact?	No	**Yes**	—	—

Notes:
ROG = reactive organic gases NO_x = oxides of nitrogen
PM_{10} = particulate matter 10 microns in diameter
$PM_{2.5}$ = particulate matter 2.5 microns in diameter
[1] The BCAQMD only provides a daily threshold for PM. The PM threshold was utilized for both PM_{10} and $PM_{2.5}$.
Source: FirstCarbon Solutions 2016, Appendix B.

Mitigation Measure AIR-2a has been provided that requires the applicant to use low VOC paint for the interior of all proposed structures and Mitigation Measure AIR-2b has been provided that requires the applicant to utilize off-road diesel equipment that meets the Tier 3 emission standards for all off-road equipment that is greater than 50 horsepower.

The project construction activities were recalculated based on implementation of Mitigation Measures AIR-2a and AIR-2b through use of the CalEEMod to determine the maximum daily emissions and annual for comparison to the BCAQMD construction thresholds and a summary of the results are shown in Table 3.2-7. Table 3.2-7 indicates that with implementation of Mitigation Measures AIR-2a and AIR-2b, the construction-related criteria pollutant emissions would be reduced to within the BCAQMD thresholds and would result in a less than significant impact.

Table 3.2-7: Mitigated Construction Criteria Air Pollutants Emissions

Construction Phase	Air Pollutants (Average Daily Rates in pounds)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Demolition	2.14	38.55	2.39	1.91
Grading	2.48	45.45	15.34	7.48
Building Construction	2.58	26.51	2.81	1.83
Paving	1.71	14.65	1.01	0.85
Architectural Coating	100.86	1.47	0.28	0.15
Maximum Daily Emissions	100.86	45.45	15.34	7.48

Table 3.2-7 (cont.): Mitigated Construction Criteria Air Pollutants Emissions

Construction Phase	Air Pollutants (Average Daily Rates in pounds)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Significance Threshold[1]	137	137	80	80
Significant Impact?	No	No	No	No
Maximum Annual Emissions (Tons)	1.30	3.39	0.44	0.27
Significance Threshold	4.5	4.5	—	—
Significant Impact?	No	No	—	—

Notes:
ROG = reactive organic gases NO_x = oxides of nitrogen
PM_{10} = particulate matter 10 microns in diameter
$PM_{2.5}$ = particulate matter 2.5 microns in diameter
[1] The BCAQMD only provides a daily threshold for PM. The PM threshold was utilized for both PM_{10} and $PM_{2.5}$.
Source: FirstCarbon Solutions 2016, Appendix B

Operational Emissions

Operational emissions occur over the lifetime of the project and are from three main sources: area sources, energy usage, and motor vehicles, or mobile sources. The emissions shown are represented in CalEEMod as mitigated emissions; however, the reductions in emissions come through compliance with regulatory measures and locational features such as construction of pedestrian facilities, location near a bus stop, and incorporation of the project design sustainability features detailed in Section 2, Project Description of the Draft EIR. For assumptions in estimating the emissions, please refer to Appendix B. The operational emissions have been analyzed for the project opening year of 2018 and are shown in Table 3.2-8.

Table 3.2-8: Operational Criteria Air Pollutant Emissions Prior to Mitigation

Source	Air Pollutants (Average Daily Rates in pounds)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area Sources[1]	6.33	0.00	0.00	0.00
Energy Usage[2]	0.03	0.27	0.02	0.02
Mobile Sources[3]	39.59	32.23	45.57	12.34
Total Daily Emissions	**45.95**	**32.50**	45.59	12.36
Significance Threshold[1]	25	25	80	80
Significant Impact?	**Yes**	**Yes**	No	No

Notes:
ROG = reactive organic gases NO_x = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
[1] Area source emissions include emissions from consumer products, landscape, and painting.
[2] Energy usage consists of emissions from electricity and natural gas usage.
[3] Mobile sources consist of emissions from vehicles and road dust.
Source: FirstCarbon Solutions 2016, Appendix B

As shown in Table 3.2-8, the operational emissions from the proposed project would emit ROG and NO_x emissions above the adopted BCAQMD significance thresholds and, therefore, would result in a potentially significant impact.

The BCAQMD CEQA Handbook details that on-site mitigation measures (project specific mitigation) are preferred over an off-site mitigation measure program (payment into a mitigation program) and provides the following list of on-site mitigation measures shown in Table 3.2-9 for commercial uses that would reduce ozone emissions. Table 3.2-9 also provides an analysis of the applicability of each mitigation measure to the proposed project, and where possible, details how implementation of the mitigation measure is quantified for the calculation of the mitigated operational criteria pollutant emissions conditions.

Table 3.2-9: BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Site design, transportation	Improve job/housing balance opportunities within communities.	The project would provide additional jobs near existing housing.	No emissions reductions were taken.
Site design	Orient buildings toward streets with automobile parking in the rear to promote a pedestrian friendly environment.	The project consists of expansion of an existing building and creation of out parcels away from existing streets. Mitigation Measure AIR-2c has been provided to ensure the outparcels are designed to promote a pedestrian friendly environment.	No emissions reductions were taken.
Site design	Provide good access to/from the development for pedestrian, bicyclists, and transit users.	The project site includes a bike path, sidewalks on the nearby roads and a bus stop on Forest Avenue.	Increase Transit Accessibility in CalEEMod set to 0.05 miles and Improve Pedestrian Network on Project Site selected.
Site design	Incorporate outdoor electrical outlets to encourage the use of electric appliances and tools.	Mitigation Measure AIR-2d has been provided to ensure outdoor electrical outlets are provided on all new structures.	No emissions reductions were taken.
Site design	Provide shade tree planting in parking lots to reduce evaporative emissions from parked vehicles. Design should provide 50 percent tree coverage within 10 years of construction using low ROG emitting, low maintenance native drought resistant trees.	Mitigation Measures AIR 2e has been provided to ensure the Landscape Plan provides enough trees for 50 percent tree coverage of parking spaces and use of specified trees.	No emissions reductions were taken.

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Site design	Development is within ¼ mile of transit center and transit corridor.	The project site is located adjacent to a transit corridor (Forest Avenue) and there is a bus stop adjacent to the project site.	The Increase Transit Accessibility in CalEEMod set to 0.05 miles.
Site design	Design and build compact communities in the urban core to prevent sprawl.	The proposed project is an infill development within the urban core.	The Project Setting set to Suburban Center in CalEEMod.
Site design	Increase density within the urban core and urban reserve lines.	The proposed project is an infill development that will increase density within the urban core.	The Increase Density mitigation in CalEEMod set to 19.7 jobs/job acre.
Site design, transportation	Incorporate traffic calming modifications to project roads, such as narrower streets, speed platforms, bulb-outs and intersection designs that reduce vehicle speeds and encourage pedestrian and bicycle travel.	Wittmeier Drive may be improved with safety measures that serve to reduce traffic speeds and enhance safety for pedestrians and bicyclists.	No emissions reductions were taken.
Site design, transportation	Increase number of connected bicycle routes/lanes in the vicinity of the project.	There is an existing Class I bicycle path that runs through the project site that will be relocated and improved with development of the project	No emissions reductions were taken.
Site design, transportation	Provide easements or land dedications and construct bikeways and pedestrian walkways.	An easement or land dedication will be provided for the relocated Class I bicycle route through the project site.	No emissions reductions were taken.
Site design, transportation	Link cul-de-sacs and dead-end streets to encourage pedestrian and bicycle travel to adjacent land uses.	There are cul-de-sacs adjacent to the project site on Business Lane and Wittmeier Drive. The relocated bicycle route will connect these two cul-de-sacs.	No emissions reductions were taken.
Site design, transportation	Project is located within one-half mile of a 'Park and Ride' lot or project installs a 'Park and Ride' lot with bike lockers in a location of need defined by SLOCOG.	There are no "Park and Ride" lots within a 0.5-mile of the project site. Additionally, the project site is not well suited to provide a "Park and Ride" lot on-site, as it is more than 0.3 mile from the nearest freeway ramp terminal.	No emissions reductions were taken.

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Site design, transportation	Provide on-site housing for employees.	The project site is not zoned for residential development. Additionally, the project site is not well suited to support residential uses due to its adjacency to SR-99 and auto-oriented commercial uses (Wittmeier Auto Center, fast food, fuel station with convenience market, etc.).	Not applicable.
Site design, transportation	Implement on-site circulation design elements in parking lots to reduce vehicle queuing and improve pedestrian environment.	The proposed parking lot expansion includes designated walkways and raised medians strategically located for traffic calming and to improve pedestrian environment.	Provide Traffic Calming Measures on 25 percent of Street selected in CalEEMod.
Site design, transportation	Provide employee lockers and showers. One shower and 5 lockers for every 25 employees are recommended.	Mitigation Measure AIR-2f is provided that requires implementation of a Transportation Demand Management (TDM) Program, that includes employee lockers and a shower.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Site design, transportation	Parking space reduction to promote bicycle, walking and transit use.	The proposed project's off-street parking would exceed Code requirements by eight spaces—a very small amount. Eliminating those eight spaces would not provide enough space for additional transit, bicycle, or pedestrian facilities. Additionally, the project would relocate the Class I bike/ pedestrian path to connect it to Wittmeier Drive and enable completion of the planned SR-99 Bikeway.	Not applicable.
Energy efficiency	Increase the building energy rating by 20 percent above Title 24 requirements. Measures used to reach the 20 percent cannot be double counted.	The proposed project would be constructed to meet Title 24 year 2013 or newer standards, which provide a 25 percent improvement over the Title 24 Year 2008 standards that were in effect at the time of publishing the BCAQMD Handbook	Exceed Title 24 by 25 percent selected in CalEEMod.

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Energy efficiency	Plant drought tolerant, native shade trees along southern exposures of buildings to reduce energy used to cool buildings in summer.	The project design does not afford opportunities to plant additional trees along southern exposures of the Walmart store expansion.	No emissions reductions were taken.
Energy efficiency	Utilize green building materials (materials which are resource efficient, recycled, and sustainable) available locally if possible.	The green building materials that will be utilized for the proposed project are detailed in the Sustainability Features Section of the Project Description.	No emissions reductions were taken.
Energy efficiency	Install high efficiency heating and cooling systems.	As detailed in the Sustainability Features Section of the Project Description, the project would utilize high efficiency heating and cooling systems.	Utilize Energy Efficient refrigerators and fans in CalEEMod.
Energy efficiency	Orient 75 percent or more of buildings to be aligned north/south to reduce energy used to cool buildings in summer.	Mitigation Measure AIR-2c is The expanded Walmart store building would have a north/south orientation and will account for more than 75 percent of building space on the project site.	No emissions reductions were taken.
Energy efficiency	Design buildings to include roof overhangs that are sufficient to block the high summer sun, but not the lower winter sun from penetrating south facing windows (passive solar design).	Mitigation Measure AIR-2c is provided that would require, where feasible, roof overhangs that block the summer sun but not the winter sun on the outparcels.	No emissions reductions were taken.
Energy efficiency	Utilize high efficiency gas or solar water heaters.	As detailed in the Sustainability Features Section of the Project Description, the project would utilize waste heat from the on-site refrigeration equipment to provide hot water.	No emissions reductions were taken.
Energy efficiency	Utilize built-in energy efficient appliances (i.e. Energy Star®).	As detailed in the Sustainability Features Section of the Project Description, the project would utilize energy efficient appliances.	Utilize Energy Efficient refrigerators and fans in CalEEMod.

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Energy efficiency	Utilize double-paned windows.	For safety reasons, commercial buildings typically utilize single-paned (1/4-inch or thicker) tempered glass. All windows will meet Title 24 energy standards.	Not applicable.
Energy efficiency	Utilize low energy street lights (i.e. sodium).	As detailed in the Sustainability Features Section of the Project Description, the project would utilize LED lighting for parking lots that are more efficient than sodium.	Install High Efficiency Lighting with a 25 percent reduction in CalEEMod.
Energy efficiency	Utilize energy efficient interior lighting.	As detailed in the Sustainability Features Section of the Project Description, the project would utilize energy-efficient T-8 fluorescent lamps for interior lighting.	Install High Efficiency Lighting with a 25 percent reduction in CalEEMod.
Energy efficiency	Utilize low energy traffic signals (i.e. light emitting diode).	The proposed project would install a new traffic signal at the intersection of Forest Avenue/Wittmeier Drive. The signal equipment will comply with City of Chico engineering design standards. The applicant does not have the discretion to deviate from City standards.	No emissions reductions were taken.
Energy efficiency	Install door sweeps and weather stripping (if more efficient doors and windows are not available).	All structures will be built to meet year 2013 or newer Title 24 energy efficiency standards that require use of sealed doors and windows.	Exceed Title 24 by 25 percent selected in CalEEMod.
Energy efficiency	Install energy-reducing programmable thermostats.	The store expansion will include a Centralized Energy Management System as detailed in the Sustainability Features Section of the Project Description.	No emissions reductions were taken.
Energy efficiency	Participate in and implement available energy-efficient rebate programs including air conditioning, gas heating, refrigeration, and lighting programs.	The Walmart store would sell electronic equipment and household appliances that may be eligible for energy-efficient rebate programs. Consumers would have the discretion to participate in these programs.	No emissions reductions were taken.

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Energy efficiency	Use roofing material with a solar reflectance values meeting the EPA/DOE Energy Star rating to reduce summer cooling needs.	As detailed in the Sustainability Features Section of the Project Description, the project would utilize a white membrane roof.	No emissions reductions were taken.
Energy efficiency	Utilize on-site renewable energy systems (e.g., solar, wind, geothermal, low-impact hydro, biomass and bio-gas).	The existing Walmart on the project site has a rooftop PV solar system that would remain with development of the proposed project.	No emissions reductions were taken.
Energy efficiency	Use native plants that do not require watering and are low ROG emitting.	Mitigation Measure AIR-2e is provided that requires the planting of primarily native drought resistant trees that are low ROG emitting.	A net increase of 259 miscellaneous trees included in CalEEMod.
Energy efficiency	Provide and require the use of battery powered or electric landscaping maintenance equipment for new development.	Mitigation Measure AIR-2d has been provided that requires installation of outdoor electrical outlets on all new structures for use by maintenance workers.	No emissions reductions were taken.
Energy efficiency	Use clean engine technologies (e.g., alternative fuel, electrification) engines that are not subject to regulations.	Mitigation Measure AIR-2g has been provided that requires Walmart to only add alternative fueled equipment to its off-road equipment fleet.	No emissions reductions were taken.
Transportation	Provide and maintain a kiosk displaying transportation information in a prominent area accessible to employees and patrons.	Mitigation Measure AIR-2f is provided that requires implementation of a TDM, which includes providing transportation information in a prominent area accessible to employees and patrons.	In order to account for the TDM, a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	Develop recreational facilities (e.g., parks, gym, pool, etc.) within ¼ mile from site.	The project includes relocation and improvements to the Class I bicycle/pedestrian path through the project site that will provide a connection to Wittmeier Drive and enable the completion of the planned SR-99 Bikeway.	No emissions reductions were taken.

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Transportation	If the project is located on an established transit route, provide improved public transit amenities (i.e., covered transit turnouts, direct pedestrian access, covered bench, smart signage, route information displays, lighting etc.).	Mitigation Measure AIR-2h has been provided to require upgrades to the transit stop on Forest Avenue with a direct pedestrian path, covered bench, smart signage, route information displays and lighting.	Increase Transit Accessibility in CalEEMod set to 0.05 mile and Improve Pedestrian Network on Project Site selected.
Transportation	Project provides a display case or kiosk displaying transportation information in a prominent area accessible to employees or residents.	Mitigation Measure AIR-2f is provided that requires implementation of a TDM that includes providing transportation information in a prominent area accessible to employees and patrons.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	Provide electrical charging station for electric vehicles.	Mitigation Measure AIR-2f is provided that requires implementation of a TDM that includes providing a minimum of two charging stations for electric vehicles.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	Provide neighborhood electric vehicles/car share program for the development.	The project consists of a retail-only development, which Is not well suited for a vehicle or car sharing program due to the nature of employment opportunities and customer activity.	Not applicable.
Transportation	Provide bicycle-share program for development.	The project consists of a retail-only development, which Is not well suited for a bicycle sharing program due to the nature of employment opportunities and customer activity.	Not applicable.
Transportation	Provide preferential parking/no parking fee for alternative fueled vehicles or vanpools.	Mitigation Measure AIR-2f is provided that requires implementation of a TDM that includes providing preferential parking for clean air vehicles.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	Provide bicycle lockers for existing 'Park and Ride' lots where absent or insufficient.	Mitigation Measure AIR-2k is provided that will provide money to the BCAQMD that may be used for bicycle lockers at 'Park and Ride' lots.	No emissions reductions were taken.

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Transportation	Provide vanpool, shuttle, mini bus service (alternative fueled preferred).	Mitigation Measure AIR-2f is provided that requires implementation of a TDM, that includes providing employer-subsidized transit passes in lieu of shuttle service.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	Provide secure on-site bicycle indoor storage, lockers or racks.	Mitigation Measure AIR-2f is provided that requires implementation of a TDM that includes providing secure indoor bicycle storage and lockers for employees.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	For large developments, provide day care facility on site.	The project consists of expansion of an existing shopping center, with multiple tenants and is not conducive to an on-site day care facility.	Not applicable.
Transportation	Provide on-site bicycle parking both short term (racks) and long term (lockers, or a locked room with standard racks and access limited to bicyclists only) to meet peak season maximum demand. One bike rack space per 10 vehicle/employee space recommended.	Mitigation Measure AIR-2f is provided that requires implementation of a TDM that includes providing secure indoor bicycle storage and lockers for employees.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	On-site eating, refrigeration and food vending facilities.	There is currently a Subway restaurant inside the existing Walmart and several additional restaurants within walking distance of the project site. Additionally, the Walmart store provides vending machines near the store entrance.	No emissions reductions were taken.
Transportation	Implement a Transportation Choice Program to reduce employee commute trips. The applicant shall work with Rideshare for free consulting services on how to start and maintain a program.	Mitigation Measure AIR-2f is provided that requires implementation of a TDM that includes providing employees with several alternative transportation options for commuting to work.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	Provide incentives (e.g., bus pass, "Lucky Bucks," etc.) to employees to carpool/vanpool,	Mitigation Measure AIR-2f is provided that requires implementation of a TDM, that	In order to account for the TDM a 10 percent reduction was applied to

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
	take public transportation, telecommute, walk, bike, etc.	includes providing employer-subsidized transit passes as well as other alternative transportation options for commuting to work.	the mitigated operational mobile source emissions.
Transportation	Implement compressed work schedules (i.e., 9-80s or 4-10s).	Mitigation Measure AIR-2f is provided that requires implementation of a TDM, which includes implementation of compressed work schedules.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	Implement a telecommuting program.	The project consists of a retail-only development, which Is not well suited for telecommuting opportunities due to the nature of the retail industry.	Not applicable.
Transportation	Implement a lunchtime shuttle to reduce single occupant vehicle trips.	There is currently a Subway restaurant inside the existing Walmart and several additional restaurants within walking distance of the project site. Therefore, a lunchtime shuttle would provide little to no benefit in terms of reducing single occupant vehicle trips.	Not applicable.
Transportation	Include teleconferencing capabilities, such as web cams or satellite linkage, which will allow employees to attend meetings remotely without requiring them to travel out of the area.	The existing Walmart management offices currently are connected with high-speed internet and computers that are capable of teleconferencing.	No emissions reductions were taken.
Transportation	If the development is or contains a grocery store or large retail facility, provide customers home delivery service in clean fueled vehicles.	Mitigation Measure AIR-2f is provided that requires implementation of a TDM, that requires any home delivery service to utilize low emission or alternative fueled vehicles.	In order to account for the TDM a 10 percent reduction was applied to the mitigated operational mobile source emissions.
Transportation	Implement a "No Idling" program for heavy-duty diesel vehicles, which includes signage, citations, etc.	Mitigation Measure AIR-2i is provided that requires implementation of a "No Idling" program, which includes signage at all loading areas and shall be enforced by on-site security personnel.	No emissions reductions were taken.

Table 3.2-9 (cont.): BCAQMD's Recommended Mitigation Measures and Applicability to the Proposed Project

Measure Type	BCAQMD's Standard Mitigation Measures	Applicability to Project	Quantification of Mitigation Measure
Transportation	Develop satellite work sites.	The project consists of a retail-only development, which Is not well suited for satellite work opportunities due to the nature of the retail industry.	Not applicable.
Transportation	Require the installation of electrical hookups at loading docks and the connection of trucks equipped with electrical hookups to eliminate the need to operate diesel-powered TRUs at the loading docks.	Mitigation Measure AIR-2j is provided that requires Walmart to provide a minimum of one electrical hookup at each loading dock that is capable of powering a TRU.	No emissions reductions were taken.
Transportation	If not required by other regulations (ARB's on-road or off-road diesel), restrict operation to trucks with 2007 model year engines or newer trucks.	According to CCR Section 2025, Title 13, Article 4.5, Chapter 1, Section 2025, all trucks that operate in California will be required to meet 2007 model year emissions standards by project opening year 2018.	No emissions reductions were taken.
Transportation	Develop core commercial areas within ¼ to ½ miles of residential housing or industrial areas.	Residential uses are located on the east side of Forest Avenue, within 0.25-mile of the project site.	No emissions reductions were taken.
Source: BCAQMD, 2014; First Carbon Solutions, 2016.			

As detailed above in Table 3.2-9, Mitigation Measures AIR-2c through AIR-2j have been provided to reduce operational ROG and NO_x emissions; in addition, Mitigation Measure AIR-2a has been provided that requires the use of low VOC paint on the interior of the proposed structures.

The proposed project's operational emissions have been recalculated with implementation of Mitigation Measures AIR-2a and AIR-2c through AIR-2j and the results are shown in Table 3.2-10. As shown in Table 3.2-10, implementation of Mitigation Measures AIR-2a and AIR-2c through AIR-2j would reduce operational emissions from the proposed project, however not to less than significant levels.

Table 3.2-10: Mitigated Operational Criteria Air Pollutant Emissions

Source	Air Pollutants (Average Daily Rates in pounds)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Area Sources[1]	6.09	0.00	0.00	0.00
Energy Usage[2]	0.03	0.29	0.02	0.02

Table 3.2-10 (cont.): Mitigated Operational Criteria Air Pollutant Emissions

Source	Air Pollutants (Average Daily Rates in pounds)			
	ROG	NO_x	PM_{10}	$PM_{2.5}$
Energy Usage[2]	0.03	0.29	0.02	0.02
Mobile Sources[3]	35.63	29.01	41.01	11.11
Total Daily Emissions	**41.75**	**29.30**	41.03	11.13
Significance Threshold[1]	25	25	80	80
Significant Impact?	**Yes**	**Yes**	No	No

Notes:
ROG = reactive organic gases NO_x = nitrogen oxides PM_{10} and $PM_{2.5}$ = particulate matter
[1] Area source emissions include emissions from consumer products, landscape, and painting and include incorporation of Mitigation Measure AIR-2a.
[2] Energy usage consists of emissions from electricity and natural gas usage.
[3] Mobile sources consist of emissions from vehicles and road dust and were calculated by reducing the modeled emissions by 10 percent to reflect the minimum effectiveness of the Transportation Demand Management Program required under Mitigation Measure AIR-2f.
Source: FirstCarbon Solutions 2016, Appendix B

For projects where the BCAQMD's standard mitigation shown in Table 3.2-9 is not adequate to reduce criteria pollutant emissions to less than significant levels, the BAQMD CEQA Handbook recommends that the project applicant either establish an off-site mitigation program within Butte County, coordinated through BCAQMD, or participate in an Off-site Mitigation Program by paying the equivalent amount of money equal to the project contribution of pollutants (ROG and NO_x) which exceed the BCAQMD's thresholds of significance. Calculation of the payment is based on the Carl Moyer Program's most recent cost effectiveness level per ton, which as of April 1, 2015 was $18,030 per ton and can be found at http://www.arb.ca.gov/msprog/moyer/moyer.htm.

The BCAQMD CEQA Handbook states that the payment amount shall be calculated at the time of recordation of the Final Map and shall be calculated using CalEEMod or an equivalent tool approved by BCAQMD that includes emission reductions from all project design features and mitigation. Project emissions above the pound per day threshold are converted to tons per year and then divided by the daily-to-annual equity ratio of 5.5 to obtain an equivalent tons per year value. The excess tons per year emissions are then multiplied by 25 years (project life for commercial projects) and the most current cost-effectiveness level per ton from the Carl Moyer Program. BCAQMD staff has clarified that although it is not reflected in the 2014 CEQA Handbook, it is the BCAQMD's practice to use a 180 day ozone season when calculating the emissions that are required to be reduced for ozone precursors. In the calculations, this would replace 365 days with 180 days.

Based on the current calculations (16.75 pounds ROG + 4.30 pounds NO_x = 21.05 pounds/day x 180/2,000 = 1.89 tons/year/5.5 = 0.34 x 25 x $18,030 = $153,255.00), this would result in a payment of $153,255.00 to the Off-site Mitigation Program, which will be utilized by the BCAQMD for a variety of emission reduction programs located throughout the Air District. Mitigation Measure AIR-

2k is provided that requires the project applicant to participate in an Off-site Mitigation Program in order to reduce ROG and NO_x operational emissions to less than significant levels, consistent with the BCAQMD's CEQA Handbook and current practices. Therefore, with implementation of Mitigation Measures AIR-2a and AIR-2c through AIR-2k, the operational criteria pollutant emissions would be reduced to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM AIR-2a During the architectural coating phase of construction activities, the project applicant shall require that all construction contractors utilize low volatile organic compound (VOC) paint that does not exceed 150 grams of VOC per liter for interior architectural coatings. The applicant shall keep records documenting the VOC content of paint products and provide them to the City of Chico upon request.

MM AIR-2b During grading and earthwork activities, the applicant shall require that all off-road diesel-powered construction equipment greater than 50 horsepower meet or exceed United States Environmental Protection Agency (EPA) Tier 3 off-road emissions standards. The applicant shall keep certificates documenting the emissions rating of all off-road diesel-powered construction equipment and provide them to the City of Chico upon request.

MM AIR-2c To the extent feasible, future development on Parcels 2 and 3 shall provide pedestrian sidewalk connections to both the Walmart store and bike path networks, and new structures shall include roof overhangs that are sufficient to block the high summer sun from windows, but also allow the lower winter sun to enter windows.

MM AIR-2d Prior to issuance of building permits, the project applicant shall prepare and submit building plans to the City of Chico that demonstrate that all new structures have outdoor electrical outlets that are accessible to maintenance workers and landscapers to allow the use of electric powered equipment.

MM AIR-2e Prior to issuance of building permits, the applicant shall revise the landscape plans to include primarily native drought-resistant trees that are low ROG emitting. For example, the sycamores (*Platanus* spp.) shall be replaced with species such as maples (*Acer* spp.), pistache (*Pistacia* spp.) and zelkova species.

MM AIR-2f Prior to issuance of the certificate of occupancy for the expanded Walmart store, the applicant shall retain a qualified transportation consultant to prepare and submit a Transportation Demand Management (TDM) program to the City of Chico for review and approval. The TDM program shall identify measures to reduce daily gasoline-powered and diesel-powered vehicle trips to the project site, with an objective of a minimum 10 percent reduction in gasoline-powered and diesel-powered trips. The approved TDM program shall be implemented in conjunction with the opening of

the expanded store. Examples of trip reduction measures may include, but are not limited to, the following:

- Post transit information (maps, schedules, fares, etc.) in a public area of Walmart that is accessible to employees and patrons;
- Provide employer-subsidized transit passes;
- Sponsor an employee ride sharing program;
- Provide employee lockers for personal items;
- Provide employees with an employee only restroom with a shower;
- Provide secure indoor bicycle parking (racks or lockers) for employees;
- Provide customer bicycle parking (racks) in safe and convenient locations;
- Allow flex scheduling or compressed scheduling practices;
- Provide preferential parking spaces for clean air vehicles;
- Provide a minimum of two charging stations for electric vehicles; and
- If home delivery service is provided in the future, it shall be performed using low-emission or alternative-fueled (electric, natural gas, hydrogen, etc.) vehicles.

MM AIR-2g To the extent that such equipment is readily available and can adequately perform all tasks, Walmart shall use electric-, propane-, or natural gas-powered mobile equipment (forklifts, non-street legal street sweepers, etc.) for operational activities within the project site. Existing gasoline- or diesel-powered mobile equipment may continue to be used until its service life is exhausted.

MM AIR-2h Prior to occupancy of the expanded Walmart store, the applicant shall enhance the existing Butte Regional Transit stop on Forest Avenue. The enhanced transit stop shall conform to Butte Regional Transit design standards and provide a minimum of a shelter, seating, lighting, transit information, and a pedestrian connection to the Walmart store entrance.

MM AIR-2i Prior to issuance of occupancy permits for the expanded Walmart store, the project applicant shall implement idling restriction program for heavy-duty diesel vehicles. The program shall require that all trucks comply with state regulations limiting idling to no more than 5 minutes. The program shall be implemented through signage in all loading areas and training of store personnel about the idling restrictions.

MM AIR-2j Prior to issuance of occupancy permits for the expanded Walmart store, the project applicant shall provide at least of one electrical hookup in each of the two proposed Walmart loading docks that is capable of powering a truck-mounted transport refrigeration unit (TRU) with an electrical hookup option.

MM AIR-2k Prior to the recordation of the Final Map, the project applicant shall participate in an Off-site Mitigation Program coordinated through the BCAQMD. The project applicant shall utilize a methodology based on the BCAQMD CEQA Handbook with final details to be approved by the BCAQMD and City for calculating the payment to the Off-site Mitigation Program.

Level of Significance After Mitigation

Less than significant impact.

Cumulative Criteria Pollutants

Impact AIR-3:	**The project may 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 which exceed quantitative thresholds for ozone precursors).**

Impact Analysis

The cumulative air quality analysis prepared for the project follows guidance from BCAQMD CEQA Handbook, which states "Projects that do not exceed the Table ES-2 [Table 3.2-5 above] significance thresholds may be assumed to have a less than significant impact in regards to a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment."

If an area is in nonattainment for a criteria pollutant, then the background concentration of that pollutant has historically exceeded the ambient air quality standard. It follows that if a project exceeds the regional threshold for that nonattainment pollutant, then it would result in a cumulatively considerable net increase of that pollutant and result in a significant cumulative impact.

The Air Basin is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$. Therefore, if the project exceeds the thresholds for PM_{10}, or $PM_{2.5}$, then it contributes to a cumulatively considerable impact for those pollutants. If the project exceeds the thresholds for NO_x or ROG, which are ozone precursors, then it follows that the project would contribute to a cumulatively considerable impact for ozone.

Criteria pollutant significance thresholds have been established by the BCAQMD because emissions from projects in the Air Basin can potentially contribute to the existing emission burden and possibly affect the attainment and maintenance of ambient air quality standards. Projects within the Air Basin with emissions in excess of any of the BCAQMD thresholds shown above in Table 3.2-5 are considered to have a significant air quality impact.

The criteria pollutant emissions analysis assessed whether the project would exceed the BCAQMD's thresholds of significance. As shown under Impact AIR-2, the operation of the proposed project would not exceed the BCAQMD's threshold of significance for criteria pollutants after the incorporation of Mitigation Measures AIR-2a and AIR-2c through AIR-2k. Therefore, the proposed project would result in a less than significant cumulative impact according to this criterion.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AIR-2a through AIR-2k.

Level of Significance After Mitigation

Less than significant impact.

Sensitive Receptors

Impact AIR-4: The project may expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

This discussion addresses whether the project would expose sensitive receptors to substantial pollutant concentrations of criteria air pollutants and fugitive dust and toxic air contaminants (TACs) from diesel emission and naturally occurring asbestos.

A sensitive receptor is defined by the BCAQMD as the following: "residences, hospitals, nursing homes, day care centers, schools, churches, or other structures or land uses indicating a possible sensitive receptor within 1,000 feet of the project parcel(s)." Based on this definition, the sensitive receptors would be limited to the single-family tract homes located as near as 330 feet east of the project site.

Criteria Pollutants

The Air Basin is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$, which means that the background levels of those pollutants are at times higher than the ambient air quality standards. The air quality standards were set to protect public health, including the health of sensitive individuals (such as the elderly, children, and the sick). Therefore, when the concentration of those pollutants exceeds the standard, it is likely that some sensitive individuals in the population would experience health effects that were described in Table 3.2-4. However, the health effects are a factor of a dose-response curve. Concentration of the pollutant in the air (dose), the length of time exposed, and the response of the individual are factors involved in the severity and nature of health impacts. Consequently, if a significant health impact results from project emissions, it does not mean that 100 percent of the population would experience health effects. As detailed in Impact AIR-2, the criteria pollutants would be mitigated to less than significant levels through implementation of Mitigation Measures AIR-2a and AIR-2c through AIR-2k. In addition, the majority of the operational emissions would be created from vehicle exhaust, which would mostly occur away from the vicinity of the project site. For these reasons, the criteria pollutant impacts to the nearby sensitive receptors would be less than significant.

Construction Fugitive Dust

During construction (grading), fugitive dust (PM_{10}) would be generated from site grading and other earth-moving activities. The majority of this fugitive dust would remain localized and would be deposited near the project site.

The BCAQMD regulates fugitive dust emissions through Rule 205, which requires implementation of Best Management Practices (BMPs) that would minimize construction vehicle emissions and dust during construction to a level where fugitive dust from construction activities is not visible at the property lines or that it does not exceed 20 percent opacity on the project site for more than 3 minutes. Through implementation of the BMPs provided in Mitigation Measure AIR-1, the fugitive dust emissions would be reduced to a less than significant impact.

Health Risk Assessment

A Health Risk Assessment (HRA) is a guide that helps to determine whether current or future exposures to a chemical or substance in the environment could affect the health of a population. In general, risk depends on the following factors:

- Identify the toxic air contaminants (TACs) that may be present in the air;
- Estimate the amount of TACs released from all sources, or the source of particular concern, using air samples or emission models;
- Estimate concentrations of TACs in air in the geographic area of concern by using dispersion models with information about emissions, source locations, weather, and other factors; and
- Estimate the number of people exposed to different concentrations of the TAC at different geographic locations.

Thus, an HRA identifies the TACS that could affect public health, identifies the sources of the TAC emissions and quantifies the emissions, estimates where the emissions are transported by prevailing meteorological conditions, and determines the extent and number of individuals affected by the TACs.

Emissions of diesel particulate matter (DPM) represent the TAC of greatest concern with regard to potential health risk impacts from the project. Diesel exhaust is made up of a number of different individual components, such as benzene, formaldehyde, arsenic, and nickel. These individual components are referred to as speciated components. Each speciated component is emitted in different quantities and has different health risk impacts. According to the ARB guidance, Risk Assessment Procedures to Evaluate Particulate Emissions from Diesel-Fueled Engines, the potential cancer risk from inhalation exposure to whole diesel exhaust will outweigh the multi-pathway cancer risk from the speciated components. Similarly, the non-cancer chronic impacts from inhalation exposure to whole diesel exhaust will generally outweigh the multi-pathway chronic impacts from the speciated components. Therefore, the cancer risk and non-cancer chronic impacts are evaluated via inhalation exposure to whole diesel exhaust, since this would result in the greatest health risk impacts.

Neither the OEHHA nor the California Air Resources Board (ARB) has identified non-cancer acute impact factors for whole diesel exhaust. As such, the non-cancer acute impacts are evaluated via inhalation exposure to the speciated components of diesel exhaust. Only those speciated components with acute impacts are included in this assessment. The exhaust total organic gas (TOG) emissions from off-road construction equipment and vehicles were used to calculate the acute impacts from the organic components of diesel exhaust. The acute impacts from the TOG speciated components are added to the acute impacts from the particulate matter components of DPM. The speciation fractions for the organic and particulate components were obtained from ARB emission chemical species profiles.

The BCAQMD has not established thresholds of significance for toxic air contaminant risks and hazards for individual projects. However, the BCAQMD's CEQA Air Quality Handbook notes that a publication

from the California Air Pollution Control Officers Association (CAPCOA) entitled "Health Risk Assessments for Proposed Land Use Projects" states that an excess cancer risk of greater than 10 in a million is considered significant by a majority of air districts in the state (CAPCOA 2009, p. 11). For TACs with acute and chronic non-carcinogenic health effects, CAPCOA states that "a hazard index of one must not be exceeded." These thresholds for health impacts are provided in Table 3.2-11. In terms of this assessment, the significance thresholds for the Individual Project scenario apply to the project's construction and operational impacts on nearby sensitive receptors while the Cumulative Impact scenario applies to the cumulative impacts from the project on nearby sensitive receptors in addition to the impacts from surrounding sources of TAC emissions within a 1,000-foot zone of influence.

Table 3.2-11: BCAQMD Health Risk Significance Thresholds

Scenario	Cancer Risk (in a million)[1]	Chronic Hazard Index[2]	Acute Hazard Index[3]	$PM_{2.5}$[4] (mg/m^3)
New Source Toxic Air Contaminant Risks and Hazards—Individual Project	10	1	1	0.3
New Source Toxic Air Contaminant Risks and Hazards—Cumulative Impact[5]	10	1	1	0.8

Notes:
BCAQMD = Butte County Air Quality Management District.
[1] Cancer risk units are in number of additional cancer incidents out of one million people.
[2] Non-cancer chronic hazard index is the ratio of the annual average concentration of pollutants to the chronic reference exposure level.
[3] Non-cancer acute hazard index is the ratio of the 1-hour average concentration of pollutants to the acute reference exposure level.
[4] $PM_{2.5}$ = annual average particulate matter with aerodynamic diameter less than 2.5 microns.
[5] Cumulative Impacts are determined based on an assessment of TAC emissions from emission sources located within a radius of 1,000 feet from the project (also known the zone of influence).

Project-Level Health Risk Assessment

Estimates of TAC emissions, principally DPM (as $PM_{2.5}$ exhaust) and TOG (as TOG exhaust gas) from Project construction were made using information derived from the CalEEMod land use emission model results as noted earlier in Impact AIR-2 above in terms of construction scheduling, construction equipment inventory, and construction emissions. Estimates of TAC emissions from Project operations were quantified for:

- Delivery truck travel within the project site, to and from the project site along adjacent roadway,
- Truck idling while unloading goods at the building loading docks,
- Operation of transportation refrigeration units on delivery trucks used to transport perishable products,
- Worker and customer vehicle travel within the project site and to and from the project site along adjacent roadways, and
- Evaporative TOG emissions from the operation of the proposed gasoline service station.

Cancer risks were estimated using the guidance on the quantification of cancer risks published by Bay Area Air Quality Management District (BAAQMD 2016)[19] and the California Office of Environmental Health Hazards Assessment (OEHHA 2015).[20] This guidance places specific emphasis on the increased susceptibility and sensitivity of young children to exposures to TACs. Using an air dispersion model and cancer risk guidance, estimates of cancer risk were made at the nearest sensitive receptors/residences that are located to the east of the project across Forest Avenue.

To provide a conservative estimate of the impacts from the existing sources of TAC emissions, it was assumed that the emissions estimated for the opening year 2018 would remain unchanged at their 2018 levels into the future. This is a conservative assumption given that mobile source emissions of DPM, particularly emissions from the large heavy duty delivery trucks are expected to decline over the next 10 years as already-adopted emission regulations are phased into the vehicle fleet.

Cancer risks are estimated as the upper-bound incremental probability that an individual will develop cancer as a direct result of exposure to potential carcinogens over a specified exposure duration. The estimated risk is expressed as a probability. The cancer risk attributed to a chemical is calculated by multiplying the chemical intake or dose at the human exchange boundaries (e.g., lungs) by the chemical-specific cancer potency factor (CPF). A risk level of 1 in a million implies a likelihood that up to one person, out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of TACs over a specified duration of time. This risk would be an excess cancer risk that is in addition to any environmental cancer risk borne by a person not exposed to these air toxics.

Separate from cancer risk impacts, exposures to TACs can also cause chronic or long-term related non-cancer illnesses such as reproductive effects, respiratory effects, eye sensitivity, immune effects, kidney effects, blood effects, central nervous system, birth defects, or other adverse environmental effects. Risk characterization for non-cancer health hazards from TACs is expressed as a hazard index (HI).

The potential health impacts to maximum impacted sensitive/residential receptor surrounding the project from the construction of the project are shown in Table 3.2-12 prior to the application of mitigation. As noted from Table 3.2-12, the construction of the project would not exceed the cancer risk significance threshold of 10 in one million and the annual average $PM_{2.5}$ significance threshold of 0.3 $\mu g/m^3$. These maximum health impacts occur at an existing residence located to the east of the project across Forest Avenue. Therefore, without mitigation, the project would result in less than significant health risk impacts.

Table 3.2-12: Maximum Project Impacts from the Project Construction

Health Impact	Risk (risk per million)	Significance Threshold (risk/million)	Exceeds Threshold?
Cancer Risk—Child to Adult	4.7	10	No
Cancer risk—Adult	0.1	10	No

[19] *Ibid*
[20] California Office of Environmental Health Hazards Assessment 2015. Website: http://oehha.ca.gov/air/hot_spots/hotspots2015.html

Table 3.2-12 (cont.): Maximum Project Impacts from the Project Construction

Health Impact	Hazard Index	Significance Threshold	Exceeds Threshold?
Chronic Non-cancer Hazard Index	0.009	1.0	No
Acute Non-cancer Hazard Index	0.083	1.0	No
Health Impact	**Annual Concentration ($\mu g/m^3$)**	**Significance Threshold ($\mu g/m^3$)**	**Exceeds Threshold?**
Annual $PM_{2.5}$	0.04	0.3	No
Source: see Appendix B			

The potential health impacts to maximum impacted sensitive/residential receptor surrounding the project from the operation of the project are shown in Table 3.2-13 prior to the application of mitigation. As noted from Table 3.2-13, the operation of the project would not exceed the BCAQMD's cancer risk significance threshold of 10 in one million and the annual average $PM_{2.5}$ significance threshold of 0.3 $\mu g/m^3$. These maximum health impacts occur at an existing residence located to the east of the project across Forest Avenue. Therefore, without mitigation, the project would result in less than significant health risk impacts during operation.

Table 3.2-13: Maximum Project Impacts from the Project Operation

Health Impact	Risk (risk per million)	Significance Threshold (risk/million)	Exceeds Threshold?
Cancer Risk—Child to Adult Cancer risk—Adult	0.29 0.04	10	No
Health Impact	**Hazard Index**	**Significance Threshold**	**Exceeds Threshold?**
Chronic Non-cancer Hazard Index	0.001	1.0	No
Acute Non-cancer Hazard Index	0.016	1.0	No
Health Impact	**Annual Concentration ($\mu g/m^3$)**	**Significance Threshold ($\mu g/m^3$)**	**Exceeds Threshold?**
Annual $PM_{2.5}$	0.0003	0.3	No
Source: see Appendix B			

Cumulative Health Risk Assessment

The most appropriate way to identify cumulative risk at a specific receptor location is to determine the zone of impact of all sources that contribute risk within a specified radius of the receptor that is most impacted by the project. For the evaluation of a new source's cumulative impact, the BCAQMD recommends evaluating significant TAC sources within a 1,000-foot zone of influence around the project source. Such TAC sources can include stationary sources, major roadways, and rail lines.

This assessment of the project's cumulative impacts uses the following two-step methodology to determine significance:

- Step One: quantify the sum of the existing risk in the project area, probable new projects within a 1,000-foot radius from the Project and the Project's impacts. The sum is compared with the 10 in a million significance threshold. If the cumulative total impacts are below this threshold, a finding of non-significance can be made. If the total impacts exceed the threshold, then the cumulative impacts are potentially significant and step two comes into play.
- Step Two: If the project's cancer risk is less than the 10 in a million threshold, then impacts are not cumulatively significant.

Step One

Existing Contribution to Cumulative Health Impacts

The ARB has developed estimates of regional background cancer risks from air toxics in California.[21] From this information, a regional background cancer risk of 680 in one million has been estimated for the Sacramento Valley (that includes the project site). Thus, the cancer risk of 680 in a million constitutes the existing impact from regional TAC emission sources without the impacts from the project. Note that this background level of cancer risk is based on air emissions for the year 2012. As a result of ongoing implementation of emission control programs, particularly as related to large diesel trucks, this level of risk is expected to decline sharply over the next 10 to 15 years. Added to this regional background level would be the risks associated with existing TAC emission sources located within a 1,000-foot radius of the project. Thus, the existing background would be comprised of the contribution from both regional background and local sources of TAC emissions.

The BCAQMD was contacted to provide a list of significant stationary TAC emission sources within the 1,000-foot zone of influence to develop an estimate of the cancer risk impacts from local TAC emission sources located within the 1,000-foot zone of influence. The BCAQMD identified two such sources consisting of two gasoline service stations listed as:

- Sinclair/Dino Food and Fuel: 2036 Forest Avenue, 80 feet northeast of the project boundary; and
- Wittmeier Auto Center, 2988 Forest Avenue, immediately adjacent to the southern project boundary.

To provide a more inclusive assessment, two additional gas stations that lie just outside of the 1,000-foot radius were also included. These additional gas stations were identified as:

- ARCO Service Station: 2000 Business Lane: 980 feet north of the project boundary; and
- Costco Gas Service Station: 2100 Dr. Martin Luther King Jr. Parkway: 980 feet southwest of the project boundary.

[21] California Air Resources Board and California Air Pollution Control Officers Association 20115. Proposed Risk Management Guidance for Stationary Sources of Air Toxics. Website: http://www.capcoa.org/wp-content/uploads/2015/07 /Proposed%20Risk%20Management%20Guidance%20for%20Stationary%20Sources%20of%20Air%20Toxics%207.13.2015.pdf

Annual emissions from the gas service stations were provided by the BCAQMD for the most recent year of reporting and assumed an operational schedule of 6 a.m. to midnight.

State Route 99, located 130 feet to the west of the project boundary, represents another significant TAC emission source within the 1,000-foot zone of influence. Of the various emission sources included in this cumulative assessment, the largest in terms of magnitude of emissions and consequential impacts is State Route 99. The assessment of the potential health risks from State Route 99 was prepared by developing an hour-by-hour profile of vehicle traffic along State Route 99 using traffic count information collected by the California Department of Transportation (CDOT) as part of their Performance Measurement System (PeMS) (CDOT 2016).[22] The PeMS system collects real-time traffic information from over 39,000 individual detectors that span the freeway system across all major metropolitan areas of the State of California. The collected data include traffic volumes, vehicle speeds, and truck percentages. The full year of PeMs data for 2014 was used in this assessment. Two PeMs monitoring detectors are located near the Skyway Road and State Route 99 interchange. From this information, profiles for each hour of the day were prepared individually for the southbound and northbound lanes of State Route 99. The traffic profiles included, for each traffic direction and hour of the day, vehicle volumes, average vehicle speed, vehicle mix (trucks vs passenger vehicles), and emissions of DPM and TOG.

Using the 2014 PeMs data, the total annual average traffic volumes were approximately 33,000 vehicles per day. Peak hourly traffic volumes in the morning hours were about 2,400 vehicles per hour with about 2,800 vehicles per hour during the afternoon peak travel time. Vehicles speeds were between 65 to 70 miles per hour during most hours of the day. The traffic, on average, consisted of about 7 percent by multi-axle trucks and 93 percent by automobiles and other light duty trucks. The traffic volumes in 2014 were scaled to the project's opening year 2018 by multiplying the 2014 traffic volumes by a factor of 1.1, the ratio of the daily vehicle miles traveled in Butte County in 2018 compared with 2014 as reported in the ARB EMFAC2014 mobile source emission model.

Finally, the existing Walmart store was also included as part of the cumulative assessment as an additional existing source of TAC emissions. The TAC emissions from the existing Walmart store were estimated using the same assumptions on emission factors and vehicle travel routes as used in estimating emissions for the project. The only exceptions were that the number of vehicle trips and delivery trucks were taken from the project traffic impact study as appropriate to the existing Walmart store.

To provide a conservative estimate of the impacts from the existing sources of TAC emissions, it was assumed that the emissions estimated for the opening year 2018 would remain unchanged at their 2018 levels into the future. This is a conservative assumption given that mobile source emissions of DPM, particularly emissions from the large heavy duty delivery trucks are expected to decline over the next 10 years as already-adopted emission regulations are phased into the vehicle fleet.

[22] California Department of Transportation 2015: Caltrans Performance Measurement System (PeMS). Website: http://pems.dot.ca.gov/.

Related Projects Contribution to Cumulative Health Impacts

In addition to the background regional and local TAC-source cancer risk noted above, other new or proposed potential TAC-generating projects (related projects) in the project area not included in the background cancer risks could contribute to cumulative TAC impacts. These related projects, because of their recent and/or tentative nature, are not reflected in the background cancer risks identified in the ARB estimates.

Based on a review of the cumulative development project listing contained in the project traffic study, twelve projects were identified as short-term projects that may be developed within the next five years. These projects consist of 541 single-family lots in residential subdivisions, 378 units in multi-family projects, a beauty supply store, a primary care clinic, and the Mechoopda Tribal Office. None of these projects are associated with emissions of TACs that could impact local or regional cancer risks levels.

Project Contribution to Cumulative Health Impacts

Project-level TACs would incrementally increase the background cancer risk by a maximum of 0.29 incident per million population; refer to Table 3.2-14.

Summary of the Total Cumulative Cancer Risk for Step One

The total cumulative cancer risk under Step One of the cumulative assessment is 682 in a million (680 in a million from regional sources and 2 in a million from the local sources). Since the existing regional and local cancer risks levels already exceeds the 10 in a million cumulative significance threshold by a large margin, a potentially significant cumulative impact exists without the project. Therefore, a second step is required to determine whether the project makes a cumulatively considerable contribution.

Step Two

Identification of a specific amount of risk that constitutes a cumulatively considerable contribution to an existing cumulative impact is necessary in order to avoid a potential conflict with CEQA provisions, which state that any increase within an already-impacted area is not necessarily significant (i.e., “one additional molecule” is not the appropriate standard). According to current BCAQMD recommendations, a project contribution of 10 in one million or more would be considered a cumulatively considerable contribution to the significant cumulative impact. Since the project’s maximum cancer risk (0.3 in a million) does not exceed the 10-in-one-million threshold, the project’s health risk impacts are determined to be less than significant on a project-level and would not be considerably significant on a cumulative-level basis.

Table 3.2-14: Summary of Cumulative Health Impacts from TAC Emission Project

Receptor Location: Residential Area east of the Project Across Forest Avenue	Emission Source Category	Cancer Risk (risk per million)
	Existing Average Risk Estimated in the Sacramento Valley	680

Table 3.2-14 (cont.): Summary of Cumulative Health Impacts from TAC Emission Project

	Emission Source Category	Cancer Risk (risk per million)
Receptor Location: Residential Area east of the Project Across Forest Avenue	Existing Sources and Foreseeable Sources: Existing Walmart State Route 99 Existing Gas Stations Subtotal	 0.03 2.00 0.09 2.12
	Total for Existing Sources without the Project	682
	Cumulative Significance Threshold	10
	Existing Significant Cumulative Impact?	Yes
	Project Emissions	0.29
	Cumulative Contribution Threshold for Project	10
	Cumulatively Considerable Impact?	No
Source: FCS, 2016.		

Naturally Occurring Asbestos

According to the BCAQMD, naturally occurring asbestos has been found in scattered locations in Butte County, with the nearest known location of naturally occurring asbestos is located approximately 12 miles east of the project site, near the Town of Paradise. Because of the distance to the nearest natural occurrences of asbestos, the project site is not likely to contain asbestos. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Objectionable Odors

Impact AIR-5: **The projects would not create objectionable odors affecting a substantial number of people.**

Impact Analysis

Offensive or strong odors may come from a wide variety of temporary and more or less permanent sources: exhaust from heavy equipment, garbage dumpsters, restaurants, animal boarding facilities, feed lots and general agricultural operations, food processing, compost/green waste and wastewater

treatment facilities, rendering plants, various industrial processes, landfills, painting/coating operations and others.

Pollutants associated with odors such as sulfur compounds and methane can be a nuisance to healthy people and they can trigger asthmatic conditions in people with sensitive airways. Given the somewhat subjective nature of human response to odors, the BCAQMD does not provide quantitative or formulaic methods to evaluate the presence of an impact. According to the BCAQMD, analysis of potential odor impacts should be conducted for the following two situations:

- **Generators:** projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate, and
- **Receivers:** residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources.

The proposed project would consist of expansion of an existing commercial retail center and would have the potential to be both a generator of odor emissions as well as attract people to the project site that may be impacted by nearby existing odor sources.

Project Receiver of Odors

In order to determine if there is a potential for odor impacts to the project site, the BCAQMD has provided a screening table shown in Table 3.2-15 that details the common land use types that are known to produce odors in the Air Basin.

Table 3.2-15: Screening Levels for Potential Odor Sources

Type of Facility	Screening Distance (miles)
Wastewater Treatment Facilities	2
Wastewater Pumping Facilities	1
Sanitary Landfill	1
Transfer Station	1
Compositing Facility	2
Petroleum Refinery	2
Asphalt Batch Plant	2
Chemical Manufacturing	1
Fiberglass Manufacturing	1
Painting/Coating Operations	1
Rendering Plant	4
Coffee Roaster	1
Food Processing Facility	1

Table 3.2-15 (cont.): Screening Levels for Potential Odor Sources

Type of Facility	Screening Distance (miles)
Feed Lot/Dairy	1
Green Waste and Recycling Operations	2
Metal Smelting Plants	1
Source: BCAQMD, 2014.	

A review of aerial maps of the project study area determined that there is an asphalt batch plant located approximately 1.4 miles southeast of the project site and there are several industrial buildings located south of Skyway Road that may contain painting operations, coffee roasters, or other uses listed in Table 3.2-15 that could be contained within an industrial building. Although the asphalt plant and possibly other uses are located within the screening distances shown in Table 3.2-15, these sources are not located upwind of the project site. In addition, field observations of the project site did not detect any impacts from odors and employees who work on the project site have stated that they have not noticed any odor issues occurring from off-site sources. Therefore, impacts to on-site sensitive receptors from off-site odor impacts would be less than significant.

Project Generation of Odors

During construction, the various diesel-powered vehicles and equipment in use on-site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project's site boundaries. The potential for diesel odor impacts is therefore less than significant.

During project operations, the project could produce odors as a result of refuse storage and collection, and from cooking exhaust at restaurants. Refuse storage and collection areas would be constructed to accommodate solid waste generation by the proposed facilities, but all collection areas and containers will be enclosed to minimize generation of odors. Regardless, the scale and size of these activities would not meet any recognized standard as a source of substantial odors. Therefore, the odor impacts associated with refuse storage and collection as well as cooking exhaust would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Greenhouse Gas Emissions

Impact AIR-6: The project would generate direct and indirect greenhouse gas emissions; however, these emissions would not result in a significant impact on the environment.

Impact Analysis

The City of Chico adopted the City of Chico 2020 Climate Action Plan (2011), which contains greenhouse gas emission reduction targets consistent with AB 32. In 2008, the City of Chico City Council established an overall greenhouse gas reduction goal of 25 percent below 2005 base-year emissions levels to be achieved by December 2020. The GHG inventory completed by the City identified the 2005 baseline emissions level as 514,332 $MTCO_2e$ and a 2020 BAU forecast of 695,504 $MTCO_2e$ per year. The Climate Action Plan seeks to achieve a target emission level of 385,749 $MTCO_2e$ by the year 2020. This is equivalent to a 44.5 percent reduction over BAU 2020 greenhouse gas emissions rates by the year 2020. In order to determine compliance with the Climate Action Plan, the proposed project's greenhouse gas emissions have been calculated for BAU (year 2005) and year 2020 with implementation of greenhouse gas emissions reduction project design features.

This analysis quantifies the emissions from project construction and operations. The assessment includes pollutants defined by AB 32: CO_2, CH_4, N_2O, and refrigerants used by the project. Other AB 32 pollutants such as HFCs, PFCs, and SF_6 are not used by the project and are not quantified in the analysis.

The analysis includes direct emissions from combustion sources such as natural gas consumption for space and water heating, and refrigerant leakage from refrigerators and freezers and air conditioning units. Indirect sources of emissions include motor vehicles attracted to the project site and electricity drawn from the power grid that is generated using fossil fuels elsewhere but used at the project site.

An upstream emission source (also known as life cycle emissions) refers to emissions that were generated during the manufacture of products to be used for construction of the project. Upstream emission sources include but are not limited to emissions from the manufacture of cement, emissions from the manufacture of steel, and/or emissions from the transportation of building materials to the seller. The upstream emissions were not estimated because they are not within the control of the project and to do so would be speculative. Additionally, the California Air Pollution Control Officers Association White Paper on CEQA and Climate Change supports this conclusion by stating, "The full life-cycle of GHG [greenhouse gas] emissions from construction activities is not accounted for . . . and the information needed to characterize [life-cycle emissions] would be speculative at the CEQA analysis level" (CAPCOA 2008). Therefore, pursuant to CEQA Guidelines Sections 15144 and 15145, upstream/life cycle emissions are speculative and no further discussion is necessary.

Construction

The BCAQMD does not recommend including construction related emissions in determining significance. Additionally, emissions from construction would be temporary. However, other air

districts such as the SCAQMD and the Sacramento Metropolitan Air Quality Management District recommend including construction emissions as a conservative approach. In order to account for the project's construction emissions, the emissions were amortized based on the average life of the development (commercial—30 years) and added to the operational emissions.

Construction emissions associated with the project were estimated using CalEEMod 2013.2.2 and the methodology detailed in Appendix B, which found that construction activities would create 707.97 $MTCO_2e$. This would result in an amortized construction rate of 23.59 $MTCO_2e$ per year.

Operation

Operational or long-term emissions occur over the life of the project. Sources of emissions may include motor vehicles, energy usage, water usage, waste generation, refrigerants used in refrigerators, display cases and air conditioning systems, and area sources such as landscaping activities.

Business as Usual Operational Emissions

Operational GHG emissions associated with the project were estimated using CalEEMod 2013.2.2. The analysis uses emission factors for the year 2005 and was chosen in order to be consistent with the BAU analysis in the Climate Action Plan. The analysis methodology utilized for the BAU analysis has been detailed in Appendix B.

2020 Operational Emissions

Operational emissions of the whole project for the year 2020 were modeled using CalEEMod 2013.2.2 to represent project emissions for the target year utilized in the Climate Action Plan. The analysis methodology utilized for the year 2020 operational emissions analysis has been detailed in Appendix B.

For year 2020, CalEEMod emission factors incorporate compliance with some, but not all, applicable rules and regulations regarding energy efficiency and vehicle fuel efficiency, and other GHG reduction policies, as described in the CalEEMod User's Guide (SCAQMD 2013). Regulations applicable to project sources and the percent reduction anticipated from each source are shown in Table 3.2-16. The percentage reductions are only applied to the specific sources subject to the regulations. For example, the Pavley Low Emission Vehicle Standards apply only to light duty cars and trucks. A detailed description of the emission reductions from regulations is provided in Appendix B.

Table 3.2-16: Reductions from Greenhouse Gas Regulations

Regulation	Project Applicability	Reduction Source	Percent Reduction from BAU in 2020
Pavley Low Emission Vehicle Standards	Light duty cars and trucks accessing the site are subject to the regulation	CalEEMod defaults (Pavley I)I	25.1[1]
		Adjusted GHG emission factor (Pavley II/LEV III) in CalEEMod.	3%[2]

Table 3.2-16 (cont.): Reductions from Greenhouse Gas Regulations

Regulation	Project Applicability	Reduction Source	Percent Reduction from BAU in 2020
Low Carbon Fuel Standard (LCFS)	Vehicles accessing the site will use fuel subject to the LCFS	CalEEMod defaults	10%[1]
Title 24 Energy Efficiency Standards	Project buildings will be constructed to meet the latest version of Title 24 (currently 2013). Reduction applies only to energy consumption subject to the regulation.	CalEEMod defaults (2008) and CalEEMod mitigation component (2013)	25%[3]
Green Building Code Standards	The project will include water conservation features required by the standard	CalEEMod mitigation component	20%[4]
Water Efficient Land Use Ordinance	The project landscaping will comply with the regulation	CalEEMod mitigation component	20%[5]
Renewable Portfolio Standard (RPS)	Electricity purchased for use at the project site is subject to the 33% RPS mandate	CalEEMod adjusted energy intensity factors from SCE	20.4%[6]
Refrigerant Management Program	Refrigeration systems installed at the project site are subject to the regulation	Off-model calculation with ARB emission factors	Refrigeration 52.4% HVAC 50.0%[7]
AB 341	Requires that a minimum of 75 percent of solid waste be diverted from landfills through recycling by 2020 and requires recycling bins at businesses.	CalEEMod mitigation component	50%

Notes:
Regulations are described in Section 2.3 Regulatory Environment. The source of the percentage reductions from each measure are from the following sources:
[1] Pavley 1 + Low Carbon Fuel Standard Postprocessor Version 1.0 User's Guide (ARB 2010c).
[2] ARB Staff Report for LEV III Amendments (ARB 2013)
[3] 2013 Title 24 Building Energy Efficiency Standards Adoption Hearing Presentation (CEC 2012)
[4] 2013 California Green Building Standards Code Section 5.303.2
[5] California Water Plan Update 2013 (CDWR 2013).
[6] PG&E Emission Factor Local Government Operations Protocol (ARB 2010 and CPUC Large IOU RPS Procurement Data (CPUC 2011)
[7] ARB ISOR for Management of High Global Warming Potential Refrigerants (ARB 2009).

The results of the operations emission analysis are presented in Table 3.2-17. The table lists the emissions from the project BAU modeling scenario, the project with regulations in 2020 scenario, the percentage reduction from BAU for each source, and the overall project reduction from BAU.

Table 3.2-17: Project Operational Greenhouse Gases Prior to Mitigation

Source	Emissions ($MTCO_2e$ per Year)		Percent Reduction from BAU by Source
	Business as Usual	2020 (with Regulations)	
Area Sources	0.01	0.01	0.0
Energy Usage	479.75	271.63	43.4
Mobile Sources	9,444.37	6,184.54	34.5
Waste	158.87	79.43	50.0
Water	33.84	22.65	33.1
Refrigerants (leakage from refrigerator, freezers)	3,801.00	1,810.00	52.4
Refrigerants (HVAC)	920.00	460.0	50.0
Amortized Construction Emissions	23.60	23.60	0.0
Total	*14,861.44*	*8,851.86*	*40.4*
Significance Threshold			44.5
Are emissions significant?			**Yes**

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source of BAU emissions: CalEEMod output using 2005 emission factors to represent emissions in 2020 without regulations.
Source: CalEEMod, 2013; FirstCarbon Solutions, 2016.

As shown in Table 3.2-17, the proposed project would create 8,851.86 $MTCO_2e$ in 2020, which would equate to a 40.4 percent reduction over BAU conditions. The proposed project's greenhouse gas emissions would not meet the Climate Action Plan's target of a 44.5 percent reduction over BAU by 2020. This would be considered a significant impact.

Mitigation Measures AIR-2c through AIR-2j have been provided above in Impact AIR-2, which would also reduce greenhouse gas emissions, as follows:

- Mitigation Measure AIR-2c requires future development on Parcels 2 and 3 to include roof overhangs for passive heating/cooling and sidewalk connections to the pedestrian and bicycle networks on-site.
- Mitigation Measure AIR-2d requires the installation of outdoor electrical outlets for use of electric maintenance and gardening equipment.
- Mitigation Measure AIR-2e requires modification of the landscape plans to primarily include native drought-resistant trees that are low ROG emitting, in addition to existing municipal code requirements to achieve 50 percent coverage of the parking area with shade.

- Mitigation Measure AIR-2f requires Walmart to prepare a Transportation Demand Management Program with an objective of a 10 percent minimum reduction in gasoline-powered and diesel-powered vehicle trips to the project site.
- Mitigation Measure AIR-2g requires all new mobile equipment to use alternative fuels to the extent that such equipment is readily available and can adequate perform required duties.
- Mitigation Measure AIR-2h requires the enhancement of the existing Butte Regional Transit stop.
- Mitigation Measure AIR-2i requires the implementation of an idling restriction program.
- Mitigation Measure AIR-2j requires installation of electrical hook ups for TRUs at loading docks.

The mitigated project greenhouse gas emissions are shown in Table 3.2-18. As shown in Table 3.2-18, with implementation of Mitigation Measures AIR-2c through AIR-2j, the proposed project would be within the Climate Action Plan's target of a 44.5 percent reduction in greenhouse gas emissions over BAU by 2020. Impacts would be less than significant with implementation of Mitigation Measure AIR-2c through AIR-2j.

Table 3.2-18: Mitigated Project Operational Greenhouse Gases

Source	Emissions ($MTCO_2e$ per Year)		Percent Reduction from BAU by Source
	Business as Usual	2020 (with Regulations)	
Area Sources	0.01	0.01	0.0
Energy Usage	479.75	271.63	43.4
Mobile Sources	9,444.37	5,566.09	41.1
Waste	158.87	79.43	50.0
Water	33.84	22.65	33.1
Refrigerants (leakage from refrigerator, freezers)	3,801.00	1,810.00	52.4
Refrigerants (HVAC)	920.00	460.00	50.0
Amortized Construction Emissions	23.60	23.60	0.0
Total	*14,861.44*	*8,233.41*	*44.6*
Significance Threshold			44.5
Are emissions significant?			No

Notes:
$MTCO_2e$ = metric tons of carbon dioxide equivalents
Source of BAU emissions: CalEEMod output using 2005 emission factors to represent emissions in 2020 without regulations.
Source: CalEEMod, 2013; FirstCarbon Solutions, 2016.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AIR-2c through AIR-2j.

Level of Significance After Mitigation

Less than significant impact.

Greenhouse Gas Reduction Plans

Impact AIR-7: The project may conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

Impact Analysis

The City of Chico adopted the City of Chico 2020 Climate Action Plan (2012), which contains greenhouse gas emission reduction targets consistent with AB 32. In 2008, the City of Chico City Council established an overall greenhouse gas reduction goal of 25 percent below 2005 base-year emissions levels to be achieved by December 2020. The GHG inventory completed by the City identified the 2005 baseline emissions level as 514,332 $MTCO_2e$ and a 2020 BAU emission forecast of 695,504 $MTCO_2e$ per year. The Climate Action Plan seeks to achieve a target emission level of 385,749 $MTCO_2e$ by the year 2020.

SB 226, adopted in 2011, states that a project's greenhouse gas emissions shall not, in and of themselves, be deemed to cause an exemption to be inapplicable if the project complies with all applicable regulations or requirements adopted to implement statewide, regional, or local plans consistent with Section 15183.5(b)(1)A-G of Title 14 of the California Code of Regulations. This section of the Regulations was amended in March 2010 to state that a GHG Reduction Plan, or Climate Action Plan, may be used for tiering and streamlining the analysis of GHG emissions in subsequent CEQA project evaluation. Therefore, the City's Climate Action Plan may be used in the environmental impact analysis for individual projects and may be the basis for a determination that a project's incremental contribution to the cumulative effect of greenhouse gas emissions is not significant if the project complies with the requirements of the Climate Action Plan.

For new developments in the City, the Climate Action Plan has provided the following list of measures in Table 3.2-19, which are to be applied on a project-by-project basis in order to ensure compliance with the Climate Action Plan.

Table 3.2-19: Consistency with Climate Action Plan Measures for New Development

Climate Action Plan Measure	Project Conformance with Measure
Consistency with key General Plan goals, policies, and actions that address sustainability, smart growth principles, multi-modal circulation improvements, and quality community design;	As detailed in Section 3.8, Land Use, of the Draft EIR, the proposed project would be consistent with all applicable goals, policies, and actions that address sustainability, smart growth principles, multi-modal circulation improvements, and quality community design.

Table 3.2-19 (cont.): Consistency with Climate Action Plan Measures for New Development

Climate Action Plan Measure	Project Conformance with Measure
Compliance with California's Title 24 Building Energy Efficiency Standards for Residential and Non-Residential Buildings;	The proposed project will be designed to exceed Title 24 building energy efficiency standards for non-residential buildings.
Compliance with the City's tree preservation ordinance;	The Landscape Plan prepared for the proposed project indicates only four trees would be removed and an additional 263 new trees would be planted on the project site. The Landscape Plan prepared for the proposed project would meet the City's Tree Preservation Ordinance requirements.
Incorporation of street trees and landscaping consistent with the City's Municipal Code;	The Landscape Plan prepared for the proposed project includes street trees and landscaping consistent with the City's Municipal Code.
Consistency with the City's Design Guidelines Manual;	The proposed project has been designed to be consistent with the City's Design Guidelines Manual.
Consistency with the State's Water Efficient Landscape Ordinance (AB 1881);	The Landscape Plan prepared for the proposed project has been designed based on the requirements provided in the State's Water Efficient Landscape Ordinance.
Compliance with the City's Residential Energy Conservation Ordinance, which requires energy and water efficiency upgrades at the point-of-sale, prior to transfer of ownership (e.g., attic insulation, programmable thermostats, water heater insulation, hot water pipe insulation, etc.);	Not applicable.
Provision of bicycle facilities and infrastructure as may be required by the City's Bicycle Master Plan;	Development of the proposed project would include the relocation of the existing Class I bicycle path to around the perimeter of the project site in order to minimize conflicts with motor vehicles. The proposed project has been designed to meet the requirements of the City's Bicycle Master Plan.
Installation of bicycle and vehicle parking consistent with the City's Municipal Code;	Development of the proposed project includes the installation of 20 covered bike lockers and 19 uncovered bike parking spaces and exceeds the minimum bicycle and vehicle parking as detailed in the City's Municipal Code.
Coordination with the Butte County Association of Governments to provide high quality transit service and infrastructure, where appropriate;	There is currently a transit stop adjacent to the project site. Mitigation Measure AIR-2h requires that the bus stop be enhanced in conformance with Butte Regional Transit design standards.
Consistency with the Butte County Air Quality Management District's CEQA Handbook;	Impacts AIR-1 through AIR-7 have been provided in this DEIR to determine consistency with the BCAQMD's CEQA Handbook. The analysis in Impact AIR-2 found that the operation of the proposed project would create ROG and NO_x emissions that

Table 3.2-19 (cont.): Consistency with Climate Action Plan Measures for New Development

Climate Action Plan Measure	Project Conformance with Measure
	exceed the standards provided in the CEQA Handbook. Mitigation Measures AIR-2a and AIR-2c through AIR-2k would reduce these impacts to less than significant levels. Therefore, with implementation of Mitigation Measures AIR-2a through AIR-2k, the proposed project would result in a less than significant impact and would be consistent with the BCAQMD's CEQA Handbook.
Adherence to Butte County Air Quality Management District mitigation requirements for construction sites (e.g., dust suppression measures, reducing idling equipment, maintenance of equipment per manufacturer specs, etc.);	Construction of the proposed project would adhere to all applicable rules and requirements, including BCAQMD's dust suppression measures, reductions in idling and equipment maintenance requirements.
Requirement for new employers of 100+ employees to submit a Transportation Demand Management Plan;	Mitigation Measure AIR-2c requires that Walmart submit a TDM program to the City for review and approval prior to the issuance of a certificate of occupancy.
Diversion of fifty percent (50%) of construction waste;	As indicated in Section 2, Project Description of the Draft EIR, Walmart would implement several sustainability design features, including a construction and demolition debris recycling program to capture and recycle construction waste. The construction and demolition debris recycling program is anticipated to capture greater than 65 percent of the construction waste, as required by California Green Building Code requirements starting in 2017.
Compliance with the City's Capital Improvement Plan, which identifies new multi-modal facilities and connections;	The proposed project has been designed to be consistent with the City's Capital Improvement Plan.
Option to incorporate solar arrays in parking areas in lieu of tree shading requirements;	The existing Walmart store current employs rooftop solar arrays, which would be maintained by the proposed project. Parking areas are proposed to be shaded with trees.
Consistency with the City's Storm Drainage Master Plan.	The proposed project would include relocation of the existing storm drain on the project site and the proposed storm drain system has been designed to be consistent with the City's Storm Drainage Master Plan.
Source: City of Chico, 2012; First Carbon Solutions, 2016.	

As detailed in Table 3.2-19, the proposed project is consistent with the Climate Action Plan's new development measures. With the inclusion of Mitigation Measures AIR-2a through AIR-2k, operational greenhouse gas and criteria pollutant emissions would be reduced to less than significant levels, consistent with the BCAQM CEQA Handbook and City's Climate Action Plan.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measures AIR-2a through AIR-2k.

Level of Significance After Mitigation

Less than significant impact.

3.3 - Biological Resources

3.3.1 - Introduction

This section describes the existing biological setting and potential effects from project implementation on the site and its surrounding area. Descriptions and analysis in this section are based on a Biological Resources Assessment, a Delineation of Waters of the United States, and an Arborist Report prepared by Foothill Associates. Each of these reports is provided in **Appendix C**.

3.3.2 - Environmental Setting

Site Conditions

The topography within the project site is relatively flat. The northern parcel is paved and landscaped. The southern undeveloped parcel contains interspersed low spots that are evident of man-made tire tracks along the north and west boundaries, two billboards adjacent to State Route 99 (SR-99), and a concrete and debris stockpile along the southwestern portion. The elevation within the project site ranges from 223 to 231 feet above mean sea level (MSL).

Biological Communities

The following biological communities occur within the project site: non-native annual grassland, disturbed/developed, and depressional seasonal wetland. Table 3.3-1 summarizes the biological communities by acreages. Dominant vegetation observed within each biological community is discussed in detail following the table. The biological communities are depicted in Exhibit 3.3-1.

Table 3.3-1: Biological Community Summary

Biological Community	Acreage
Non-Native Annual Grassland	10.78
Disturbed/Developed	16.05
Depressional Seasonal Wetland	0.02
Total	**26.85**

Note:
Acreage does not sum to 27.08 acres due to GIS mapping methodologies.
Source: Foothill Associates, 2015.

Non-Native Annual Grassland

Non-native annual grassland occurs within the southern portion of the project site. The majority of the non-native annual grassland has been modified by human disturbance. Deep cracks and sparse, small-sized burrows and a debris stockpile occur throughout the non-native annual grassland. The perimeter of the non-native annual grassland had been mowed prior to the September 10, 2015 biological survey of the project site. Dominant vegetation includes medusahead (*Elymus caput-medusae*), wild oat (*Avena fatua*), rye grass (*Festuca perennis*), and wall barley (*Hordeum murinum*).

Disturbed/Developed

Disturbed/developed areas occur throughout the northern portion of the project site and consist of paved roads and a parking lot, commercial infrastructure (i.e., Walmart store), and ornamental landscaped areas. Ornamental trees and shrubs are interspersed throughout the parking lot and trees occur within landscaped planter boxes within designated areas along the perimeter within the project site. Dominant vegetation includes Chinese pistache (*Pistacia chinensis*), Chinese hackberry (*Celtis sinensis*), London planetree (*Platanus x acerifolia*), pin oak (*Quercus palustris*), cork oak (*Quercus suber*), and crepe myrtle (*Lagerstroemia indica*). The dominant understory consists of ornamental shrubs including juniper (*Juniperus* sp.) and rosemary (*Rosmarinus officinalis*).

Depressional Seasonal Wetland

A small depressional seasonal wetland (0.02 acre) occurs at the southwestern corner of the project site, adjacent to SR-99. The feature appears to be recently (and inadvertently) man-made as result of nearby improvements, and holds water for short durations of time until water percolates into the ground. Dominant vegetation includes Great Valley button celery (*Eryngium castrense*), rye grass, and annual hairgrass (*Deschampsia danthonoides*).

Wildlife Observed

Wildlife observed foraging within the project site includes western scrub jay (*Aphelocoma californica*), Brewer's blackbird (*Euphagus cyanocephalus*), American crow (*Corvus brachyrhynchos*), and western fence lizard (*Sceloporus occidentalis*).

Special-Status Species

Special-status species are plant and animal species that have been afforded special recognition by federal, state, or local resource agencies or organizations. Listed and special-status species are of relatively limited distribution and may require specialized habitat conditions. Special-status species are defined as meeting one or more of the following criteria:

- Listed or proposed for listing under the CESA or the FESA;
- Protected under other regulations (e.g., MBTA);
- CDFW Species of Special Concern;
- Plant species ranked by the CNPS; or
- Receive consideration during environmental review under CEQA.

Special-status species considered for this analysis are based on the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS), and United States Fish and Wildlife Service (USFWS) lists. CNDDB occurrences of special-status species documented within five miles of the project site are illustrated within Exhibit 3.3-2. The following set of criteria has been used to determine each species potential for occurrence within the project site:

- **Present:** Species known to occur within the project site based on CNDDB records and/or observed within the project site during the biological surveys.
- **High:** Species known to occur on or near the project site (based on CNDDB records within 5 miles and/or based on professional expertise specific to the project site or species) and there is suitable habitat within the project site.

- **Low:** Species known to occur in the vicinity of the project site and there is marginal habitat within the project site -OR- Species is not known to occur in the vicinity of the site, however, there is suitable habitat on the site.
- **None:** Species is not known to occur on or in the vicinity of the project site and there is no suitable habitat within the project site -OR- Species was surveyed for during the appropriate season with negative results -OR- The project site does not provide suitable soils or occurs outside of the known elevation or geographic ranges -OR- Species is not known in Butte County.

Only those species that are known to be present or have a high or low potential for occurrence are discussed further in the following paragraphs.

Listed and Special-Status Plants

Using the previously described criteria, the following special-status plants have a high potential to occur within the project site: Ahart's paronychia, Butte County meadowfoam, and woolly meadowfoam. The following special-status plants with a low potential to occur within the project site include adobe lily, Bidwell's knotweed, Butte County golden clover, depauperate milkvetch, Ferris' milk-vetch, hogwallow starfish, pink creamsacs, Red Bluff dwarf rush, round-leaved filaree, Tehama navarretia, and veiny monardella.

Species with a High Potential for Occurrence

Ahart's Paronychia

Ahart's paronychia is listed as a CNPS 1B species. It is an annual herb found in cismontane woodland, vernal pools, and valley and foothill grassland from 98 to 1,673 feet (30 to 510 meters) above MSL. The identification period for this species is from February through June. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. Because there is one documented CNDDB record of this species occurring within 5 miles of the project site and suitable habitat exists at the site, the potential for this species to occur within the non-native annual grassland is considered high.

Butte County Meadowfoam

Butte County meadowfoam is listed as federally endangered, state endangered, and CNPS 1B species. It is an annual herb found in vernal pools and valley and foothill grassland, which are occasionally mesic, from 151 to 3,051 feet (46 to 930 meters) above MSL. The identification period for this species is from March through May. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. Because there are four documented CNDDB records of this species occurring within 5 miles of the project site and suitable habitat exists at the site, the potential for this species to occur within the non-native annual grassland is considered high.

Woolly Meadowfoam

Woolly meadowfoam is listed as a CNPS 4 species. It is an annual herb found on vernally mesic substrate within chaparral, cismontane woodland, vernal pools, and valley and foothill grassland from 197 to 4,380 feet (60 to 1,335 meters) above MSL. The identification period for this species is

from March through June. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. Because there is one documented CNDDB record of this species occurring within 5 miles of the project site and suitable habitat exists at the site, the potential for this species to occur within the non-native annual grassland is considered high.

Species with a Low Potential for Occurrence

Adobe Lily

Adobe lily is listed as a CNPS 1B species. It is a perennial bulbiferous herb found on adobe within chaparral, cismontane woodland, and valley and foothill grassland from 230 to 2,313 feet (70 to 705 meters) above MSL. The identification period for this species is from February through April. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Bidwell's Knotweed

Bidwell's knotweed is listed as a CNPS 4 species. It is an annual herb found on volcanic sites within chaparral, cismontane woodland, and valley and foothill grassland from 197 to 3,937 feet (60 to 1,200 meters) above MSL. The identification period for this species is from April through July. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Butte County Golden Clover

Butte County golden clover is listed as a CNPS 1B species. It is an annual herb found on mesic sites in valley and foothill grassland and in vernal pools from 164 to 1,263 feet (50 to 385 meters) above MSL. The identification period for this species is from March through May. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Depauperate Milk-Vetch

Depauperate milk-vetch is listed as a CNPS 4 species. It is an annual rhizomatous herb often found on vernally mesic, volcanic substrate within chaparral, cismontane woodland, and valley and foothill grassland from 197 to 3,986 feet (60 to 1,215 meters) above MSL. The identification period for this species is from March through June. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Source: Foothill Associates, 2015

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Exhibit 3.3-1
Biological Communities

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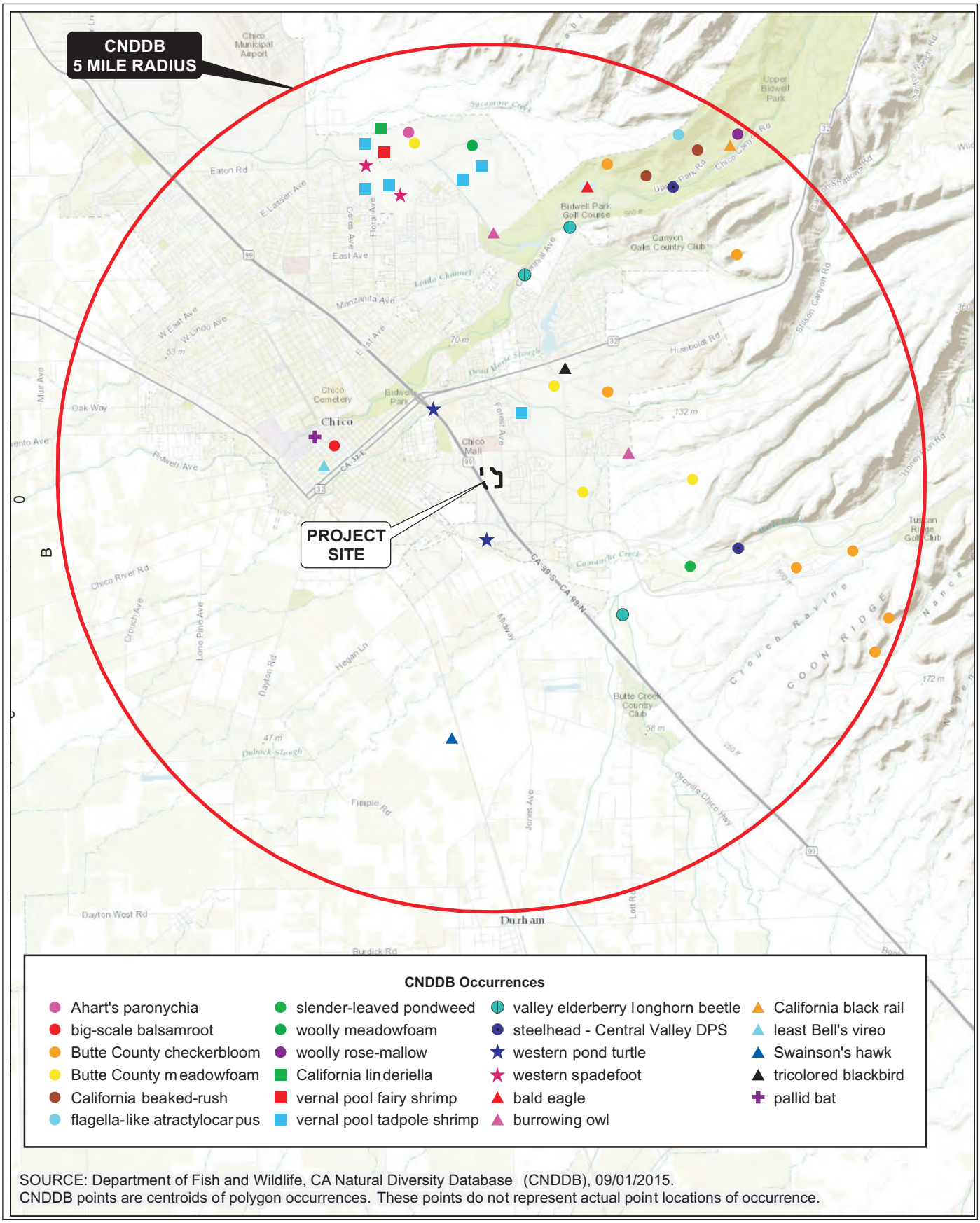

SOURCE: Department of Fish and Wildlife, CA Natural Diversity Database (CNDDB), 09/01/2015.
CNDDB points are centroids of polygon occurrences. These points do not represent actual point locations of occurrence.

Source: Foothill Associates, 2015

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Exhibit 3.3-2
California Natural Diversity Database Occurrences

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Ferris' Milk-Vetch

Ferris' milk-vetch is listed as a CNPS 1B species. It is an annual herb found in meadows and seeps, which are occasionally vernally mesic, and valley and foothill grassland, which are occasionally on subalkaline flats, from 7 to 246 feet (2 to 75 meters) above MSL. The identification period for this species is from April through May. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Hogwallow Starfish

Hogwallow starfish is listed as a CNPS 4 species. It is an annual herb found within valley and foothill grassland on mesic and clay sites and within shallow vernal pools from sea level to 1,657 feet (0 to 505 meters) above MSL. The identification period for this species is from March through June. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period, and suitable habitat occurs on-site. There is low potential for this species to occur within the non-native annual grassland within the project site.

Pink Creamsacs

Pink creamsacs is listed as a CNPS 1B species. It is an annual herb, which is occasionally hemi-parasitic, found on serpentinite in chaparral openings, cismontane woodland, meadows and sweeps, and valley and foothill grassland from 66 to 2,986 feet (20 to 910 meters) above MSL. The identification period for this species is from April through June. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Red Bluff Dwarf Rush

Red Bluff dwarf rush is listed as a CNPS 1B species. It is an annual herb found on vernally mesic sites on chaparral, cismontane woodland, meadows and seeps, vernal pools, and valley and foothill grassland from 115 to 4,101 feet (35 to 1,250 meters) above MSL. The identification period for this species is from March through June. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Round-Leaved Filaree

Round-leaved filaree is listed as a CNPS 1B species. It is an annual herb found in clay soils within cismontane woodland and valley and foothill grassland from 518 to 3,937 feet (15 to 1,200 meters) above MSL. The identification period for this species is from March through May. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this

species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Tehama Navarretia

Tehama navarretia is listed as a CNPS 4 species. It is an annual herb found within vernal pools and valley and foothill grassland from 98 to 3,314 feet (30 to 1,010 meters) above MSL. The identification period for this species is from April through June. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Veiny Monardella

Veiny monardella is listed as a CNPS 1B species. It is an annual herb found on heavy clay within cismontane woodland and valley and foothill grassland from 197 to 1,345 feet (60 to 410 meters) above MSL. The identification period for this species is from May through July. There are no documented CNDDB records of this species occurring within 5 miles of the project site. While this species was not observed within the project site, the September 10, 2015 biological survey was conducted outside of the evident and identifiable blooming period. There is low potential for this species to occur within the non-native annual grassland within the project site.

Listed and Special-Status Wildlife

The following special-status wildlife species have a high potential to occur within the project site: burrowing owl, Swainson's hawk, and pallid bat. The following special-status wildlife species have a low potential to occur within the project site: vernal pool branchiopods—including California linderiella, vernal pool fairy shrimp, and vernal pool tadpole shrimp—and western spadefoot.

Species with a High Potential to Occur

Burrowing Owl

Burrowing owl is a small, ground-dwelling owl that occurs in western North America from Canada to Mexico, and east to Texas, and Louisiana. Although in certain areas of its range burrowing owls are migratory, these owls are predominantly non-migratory in California. The breeding season for burrowing owls occurs from March to August, peaking in April and May. Burrowing owls nest in burrows in the ground, often in old ground squirrel burrows, but are also known to use artificial burrows including pipes, culverts, and nest boxes. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds. Burrow fidelity has been reported in some areas; however, more frequently, burrowing owls reuse traditional nesting areas without necessarily using the same burrow. The burrowing owl is listed as a state species of special concern.

Within the Draft Butte Regional Conservation Plan area, the most recent breeding season record was reported in 2000 along Nelson Road just east of SR-99 and north of Thermalito Afterbay. The non-native annual grassland and stockpile of debris provides habitat for this species within the project

site that could be utilized by burrowing owl. No burrowing owls or their sign were observed during the September 10, 2015 biological survey of the project site. However, because there are two documented CNDDB records for this species within 5 miles of the project site and suitable habitat exists at the site, the potential for this species to breed or winter within the non-native annual grassland is considered high.

Swainson's Hawk

Swainson's hawk is a long-distance migrant with nesting grounds in western North America. The Swainson's hawk population that nests in the Central Valley winters primarily in Mexico, while the population that nests in the interior portions of North America winters in South America. Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July. In the Central Valley, Swainson's hawks nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. Nest locations are usually close to suitable foraging habitats (up to a 10-mile radius), which include fallow fields, all types of grasslands, irrigated pastures, alfalfa and other hay crops, and low-growing row crops. Swainson's hawks leave their breeding grounds to return to their wintering grounds in late August or early September. The Swainson's hawk is listed as a state threatened species.

Within the Draft Butte Regional Conservation Plan area, nest sites have been documented along the Sacramento River, Feather River, Butte Creek, and other riparian corridors, as well as non-riparian habitats associated with farmlands. There is one documented CNDDB record for this species within 5 miles of the project site (Exhibit 3.3-2). This record was reported in 1998 just 2.5 miles southeast of Chico near the south end of the California State University, Chico Farm (CDFW 2015). Two Swainson's hawk adults were observed nesting in an English walnut (*Juglans regia*) tree within an orchard approximately 20 feet from the ground with adjacent wheat fields 1 mile to the north. There are nine CNDDB occurrences between 5 and 10 miles of the project site. The most recent occurrence is from 2009 and is located approximately 9.6 miles northwest of the project site. The record states that a female was observed on a stick nest on a valley oak within riparian habitat that runs along Rock Creek. The male was observed foraging and bringing food to the female.

The project site does not provide suitable nesting habitat since it does not contain mature trees. No Swainson's hawk or sign was observed during the September 10, 2015 biological survey; however, the survey was conducted outside of the breeding and foraging season. Because the recorded occurrence from 1998 was within 5 miles of the project site, the potential for this species to forage in the non-native annual grassland within the project site is considered high.

Special-Status Bats, including Pallid Bat

California is home to several special-status bat species that have been identified near the project area (CNDDB), including pallid bat, hoary bat (*Lasiurus cinereus*), and silver-haired bat (*Lasionycteris noctivagans*). These bat species are listed as a state species of special concern. Bat numbers are in decline throughout the U.S., due to loss of roosting habitat, habitat conversion, and habitat alteration. No bat species were observed roosting during the September 10, 2015 biological survey

of the project site. The ornamental trees and Walmart building within the disturbed/developed area provide day roosting habitat and the non-native annual grassland provides foraging habitat for special-status bats. Because there is one documented CNDDB record of a pallid bat occurring within 5 miles of the project site and suitable habitat exists for these species to forage within the non-native annual grassland and to roost within the trees and buildings within the project site, the potential for special-status bats at the site is considered high.

Species with a Low Potential to Occur

Western Spadefoot

The western spadefoot toad is small toad that is native to California, lacks a cranial boss in between its eyes, and typically has four irregular colored stripes on its back. Members of this group of toads possess a small black wedge (spade) on the bottom surface of each hind foot, which is suspected to aid in digging. This species has been observed throughout the Central Valley and on the coast from Point Conception, south to the Mexican border. Western spadefoot breed in a variety of permanent and temporary wetlands, pools, rivers, creeks, intermittent streams, and vernal pools from January to May. They are most commonly found in valley and foothill grassland, open chaparral, and pine-oak woodland. This species spends most of the year underground (aestivation), where individuals seek refuge from desiccating weather by constructing and residing in small burrows. The Western spadefoot toad is a state species of special concern.

Within the Draft Butte Regional Conservation Plan area, notes the most recent CNDDB records for this species are from 2006 along an intermittent creek, near the intersection of Floral Avenue and Eaton Road in Chico (SAIC 2012). There are two documented CNDDB records for this species within 5 miles of the project site (Figure 4) (CDFW 2015). The seasonal wetland provides marginal breeding habitat and the non-native annual grassland provides marginal upland habitat for this species. This species was not observed during the September 10, 2015 biological survey of the project site. This species has a low potential to breed within the seasonal wetland or aestivate within the upland non-native annual grassland habitat in the project site.

California Linderiella

California linderiella (*Linderiella occidentalisis*) is not a listed species, but it is identified on the CDFW Special Animal List. California linderiella is a relatively common branchiopod found in vernal pools, swales, and ephemeral freshwater habitats. Adults may be observed during the wet-season (December to May), and the cysts are present in the dry-season from June to November. There is one CNDDB occurrence documented within 5 miles of the Study Area. The depressional seasonal wetland provides marginal habitat for this species within the non-native annual grassland. This species has a low potential to occur on the project site.

Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as federally threatened and is found in vernal pools, swales, and ephemeral freshwater habitats. These species are most commonly found in grassed or mud bottomed pools or basalt flow depression pools in unplowed grasslands. The pools vary in size from over 10 hectares to only 20 square meters. There is one CNDDB occurrence documented within a preserve within 5 miles of the Study Area. The depressional seasonal wetland provides marginal habitat for this species since it is shallow, is only 0.02 acre in area, and has

recently formed as a result of ongoing earth-moving activities associated with routine mowing practices within the non-native annual grassland. This species has a low potential to occur on the project site.

Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp (*Lepidurus packardi*) listed as federally endangered and is found in natural and artificial seasonally ponded habitats, including vernal pools, swales, ephemeral drainages, stock ponds, reservoirs, ditches, backhoe pits, and ruts caused by vehicular activities. Wetlands range from very small (2 square meters) to very large (356,253 square meters). There are six CNDDB occurrences documented for this species within 5 miles of the Study Area. The depressional seasonal wetland provides marginal habitat for this species within the non-native annual grassland. This species has a low potential to occur on the project site.

Nesting Birds Protected under the Migratory Bird Treaty Act

Migratory birds and other birds of prey, including those identified as Birds of Conservation Concern, are protected under 50 CFR 10 of the Migratory Bird Treaty Act (MBTA) or Section 3503.5 of the California Fish and Game Code. Migratory birds and other birds of prey have a high potential to nest within the non-native annual grassland and within the ornamental trees within the disturbed/developed areas within the project site during the nesting season. The generally accepted nesting season is from February 15 through August 31.

Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under the California Environmental Quality Act (CEQA), Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. Sensitive habitats within the project site include potential waters of the U.S., which includes one depressional seasonal wetland.

Jurisdictional Waters of the U.S.

Potential jurisdictional wetlands and waters of the U.S. within the project site total approximately 0.02 acre and includes one depressional seasonal wetland located at the southwestern corner of the project site; refer to Exhibit 3.3-3. This feature appears to hold water for short durations of time until water percolates into the ground. Dominant vegetation includes Great Valley button celery (*Eryngium castrense*), rye grass, and annual hairgrass (*Deschampsia danthonoides*).

Wildlife Corridors

Wildlife corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization creates isolated “islands” of wildlife habitat. Fragmentation can also occur when a portion of one or more habitats is converted into another habitat, such as when woodland or scrub habitat is altered or converted into grasslands after a disturbance such as fire, mudslide, or grading activities. Wildlife corridors mitigate the effects of this fragmentation by: (1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; (2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) on

population or local species extinction; and (3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and other needs.

The project site is not part of a major or local wildlife corridor/travel route because it does not connect two significant habitats. The project site is surrounded by commercial and residential development. There are no riparian corridors, drainages, or contiguous habitats that connect from the project site to surrounding natural habitats. Therefore, there are no wildlife corridors that occur within the project site.

Trees

There are a total of 240 existing trees within the project boundaries, summarized by species in Table 3.3-2.

Table 3.3-2: Tree Summary

Tree Species	Count	Tree Species	Count
London plane tree	70	Atlas cedar	3
Honey locust	52	Willow	3
Cork oak*	26	Fremont's cottonwood	2
Crepe myrtle	26	Redwood	2
Chinese pistache**	22	Mexican fan palm	1
Pin oak	19	Pecan	1
Chinese hackberry	12	Ponderosa pine	1
Total		**240**	

Notes:
* Three cork oaks are protected by Municipal Code Chapter 16.66
** One Chinese pistache is protected by Municipal Code Chapter 16.66
Source: Foothill Associates, 2015.

3.3.3 - Regulatory Framework

Federal

Federal Endangered Species Act

The U.S. Congress passed the Federal Endangered Species Act (FESA) in 1973 to protect those species that are endangered or threatened with extinction. FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend.

Source: Foothill Associates, 2015

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Exhibit 3.3-3
Wetland Delineation Map

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FESA prohibits the "take" of endangered or threatened wildlife species. "Take" is defined to include harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such conduct (FESA Section 3 (3)(19)). Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3). Actions that result in take can result in civil or criminal penalties.

FESA and Clean Water Act (CWA) Section 404 guidelines prohibit the issuance of wetland permits for projects that jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species. The United States Army Corps of Engineers (USACE) must consult with the USFWS and/or the National Marine Fisheries Service (NMFS) when threatened or endangered species under their jurisdiction may be affected by a proposed project. In the context of the proposed project, FESA would be initiated if development resulted in take of a threatened or endangered species or if issuance of a Section 404 permit or other federal agency action could result in take of an endangered species or adversely modify critical habitat of such a species.

Migratory Bird Treaty Act

Raptors (birds of prey), migratory birds, and other avian species are protected by a number of state and federal laws. The MBTA prohibits the killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of Interior.

The Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (Eagle Act) prohibits the taking or possession of and commerce in bald and golden eagles with limited exceptions. Under the Eagle Act, it is a violation to "take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest, or egg, thereof." Take is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. Disturb is further defined in 50 CFR Part 22.3 as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Clean Water Act

The USACE regulates discharge of dredge or fill material into waters of the U.S. under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into waters of the U.S., including but not limited to the following: placement of fill that is necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; fill for intake and outfall pipes and subaqueous utility lines (33 C.F.R. §328.2(f)). In addition, Section 401 of the CWA (33 U.S.C. 1341) requires any applicant for a Federal

license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Waters of the U.S. include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, and wet meadows. Boundaries between jurisdictional waters and uplands are determined in a variety of ways depending on which type of waters is present. Methods for delineating wetlands and non-tidal waters are described below.

- Wetlands are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 C.F.R. §328.3(b)). Presently, to be a wetland, a site must exhibit three wetland criteria: hydrophytic vegetation, hydric soils, and wetland hydrology existing under the "normal circumstances" for the site.
- The lateral extent of non-tidal waters is determined by delineating the ordinary high water mark (OHWM) (33 C.F.R. §328.4(c)(1)). The OHWM is defined by the USACE as "that line on shore established by the fluctuations of water and indicated by physical character of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 C.F.R. §328.3(e)).

State

California Endangered Species Act

The State of California enacted the California Endangered Species Act (CESA) in 1984. CESA is similar to the FESA but pertains to State-listed endangered and threatened species. CESA requires state agencies to consult with the California Department of Fish and Wildlife (CDFW), formally California Department of Fish and Game, when preparing CEQA documents. The purpose is to ensure that the state lead agency actions do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available (Fish and Game Code §2080). CESA directs agencies to consult with CDFW on projects or actions that could affect listed species, directs CDFW to determine whether jeopardy would occur and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. CESA allows CDFW to authorize exceptions to the State's prohibition against take of a listed species if the "take" of a listed species is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code § 2081).

California Department of Fish and Game Codes

Fully protected fish species are protected under Section 5515; fully protected amphibian and reptile species are protected under Section 5050; fully protected bird species are protected under Section 3511; and fully protected mammal species are protected under Section 4700. The California Fish and Game Code defines take as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue,

catch, capture, or kill." Except for take related to scientific research, all take of fully protected species is prohibited. Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Section 3503.5 prohibits the killing of raptor species and the destruction of raptor nests. Sections 2062 and 2067 define endangered and threatened species.

California Department of Fish and Wildlife Species of Concern

In addition to formal listing under FESA and CESA, species receive additional consideration by CDFW and local lead agencies during the CEQA process. Species that may be considered for review are included on a list of "Species of Special Concern," developed by the CDFW. It tracks species in California whose numbers, reproductive success, or habitat may be threatened. In addition to Species of Special Concern, the CDFW identifies animals that are tracked by the CNDDB, but warrant no federal interest and no legal protection. These species are identified as California Special Animals.

Porter-Cologne Water Quality Control Act

CDFW is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds…except when the department has been notified pursuant to Section 1601." Additionally, CDFW may assert jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over 4 inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures.

Section 13260(a) of the Porter-Cologne Water Quality Control Act (contained in the California Water Code) requires any person discharging waste or proposing to discharge waste, other than to a community sewer system, within any region that could affect the quality of the waters of the State (all surface and subsurface waters) to file a report of waste discharge. The discharge of dredged or fill material may constitute a discharge of waste that could affect the quality of waters of the State. All of the wetlands and waterways in the project site are waters of the State, which are protected under this act.

Historically, California relied on its authority under Section 401 of the CWA to regulate discharges of dredged or fill material to California waters. That section requires an applicant to obtain "water quality certification" from the State Water Resources Control Board (SWRCB) through its Regional Water Quality Control Boards (RWQCBs) to ensure compliance with state water quality standards before certain federal licenses or permits may be issued. The permits subject to Section 401 include permits for the discharge of dredged or fill materials (CWA Section 404 permits) issued by the USACE. Waste discharge requirements under the Porter-Cologne Water Quality Control Act were typically waived for projects that required certification. With the recent changes that limited the

jurisdiction of wetlands under the CWA, the SWRCB has needed to rely on the report of waste discharge process.

California Native Plant Society

The CNPS maintains a rank of plant species native to California that has low population numbers, limited distribution, or are otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS ranks:

- Rank 1A: Plants presumed Extinct in California
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- Rank 2: Plants Rare, Threatened, or Endangered in California, but more numerous elsewhere
- Rank 3: Plants about which we need more information—A Review List
- Rank 4: Plants of limited distribution—A Watch List

All plants appearing on CNPS List 1 or 2 are considered to meet CEQA Guidelines Section 15380 criteria. While only some of the plants ranked 3 and 4 meet the definitions of threatened or endangered species, the CNPS recommends that all Rank 3 and Rank 4 plants be evaluated for consideration under CEQA.

Regional

Draft Butte Regional Conservation Plan

The Draft Butte Regional Conservation Plan is a proposed conservation strategy intended to provide a regional approach for the long-term conservation of covered species and natural communities, including wetlands and streams, within western Butte County, while allowing for compatible future land use and development under County and City general plan updates and the regional transportation plans and programs. The Conservation Plan identifies and addresses existing, planned, and proposed land use activities that are proposed and may result in take of covered species within the plan area. Under the Conservation Plan, development projects would be covered by programmatic federal and state permits regarding impacts to certain special-status species, and permittees would pay fees that would be used for acquisition and long-term preservation of the most critical habitat areas for the species. At the time of this writing, the Conservation Plan has not been adopted.

Local

City of Chico

General Plan

The Chico 2030 General Plan establishes the following goals, policies, and actions relevant to biological resources:

- **Goal OS-1:** Protect and conserve native species and habitats.
- **Policy OS-1.1 (Native Habitats and Species):** Preserve native species and habitat through land use planning, cooperation, and collaboration.

- **Action OS-1.1.1 (Development/Preservation Balance):** Direct development to appropriate locations consistent with the Land Use Diagram, and protect and preserve areas designated Open Space and areas that contain sensitive habitat and species.
- **Policy OS-1.2 (Regulatory Compliance):** Protect special-status plant and animal species, including their habitats, in compliance with all applicable state, federal and other laws and regulations.
- **Action OS-1.2.1 (State and Federal Guidelines):** Ensure that project-related biological impacts are considered and mitigated, and require applicants to obtain all necessary local, state and federal permits for projects that may affect special-status species or their habitat.

Municipal Code

Municipal Code Chapter 16.66 sets forth the City's Tree Preservation Guidelines. Trees that protected by the guidelines include (1) any woody plant with a single stem of 18 inches or more in diameter; (2) all oaks, sycamores, Oregon ash, and big leaf maples with a 12-inch-diameter at breast height; or (3) blue oaks, canyon live oaks, interior live oaks, California buckeye, madrone, toyon, redbud, California bay, and Pacific dogwood with 6-inch-diameter at breast height. Additionally, the guidelines apply to any trees required to be preserved as part of a project subject to a ministerial or discretionary approval. Permits are required for the removal of any trees subject to the chapter and the applicant must either offset the lost via on-site replanting of replacement trees or payment of an in-lieu of fee to the City.

3.3.4 - Methodology

Foothill Associates prepared (1) a Biological Resources Assessment that evaluated potential biological resources within the project site, (2) a Delineation of Waters of the United States that evaluated the depressional feature in the southwest corner of the project site, and (3) an Arborist Report that evaluated the removal of trees protected by Chico Municipal Code Chapter 16.66. All three reports are provided in **Appendix C**. The methods are summarized as follows:

Biological Resources Assessment

Literature Review

Available information pertaining to the natural resources of the region was reviewed. The following site-specific information was reviewed:

- California Department of Fish and Wildlife (CDFW). 2015. California Natural Diversity Data Base (CNDDB: Chico, Hamlin Canyon, Llano Seco, Nelson, Nord, Ord Ferry, Paradise West, Richardson Springs, and Shippee U.S. Geological Survey (USGS) 7.5-minute series quadrangles (quadrangles)), Sacramento, CA. Accessed 08/26/2015.
- California Native Plant Society (CNPS). 2015. Inventory of Rare and Endangered Plants (online edition, v8-02) (CNPS: Chico, Hamlin Canyon, Llano Seco, Nelson, Nord, Ord Ferry, Paradise West, Richardson Springs, and Shippee quadrangles). Accessed 08/26/2015.
- United States Fish and Wildlife Service (USFWS). 2015. Information for Planning and Conservation (IPaC) Trust Resource Report: Butte County. Accessed 08/26/2015.

- United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). 2006. Soil Survey of Butte Area, California, Parts of Butte and Plumas Counties.

Biological Surveys

Foothill Associates' biologists conducted general biological and focused botanical surveys and a wetland delineation on September 10, 2015. The biological surveys consisted of conducting botanical inventories, evaluating biological communities, mapping wetlands and waterways, and documenting habitat for special-status species with the potential to occur within the project site. Plants and wildlife observed within the project site are identified in **Appendix C**. The botanical inventory followed CDFW's (2009) protocol plant surveys.

Delineation of Waters of the United States

Literature Review

Available information pertaining to the natural resources of the region was reviewed. Pertinent site-specific reports and general references utilized for the delineation include the following:

- Baldwin. G., D. Goldman, D. Keil, R. Patterson, and T.J. Rosatti. 2012. The Jepson Manual, 2nd Edition. Vascular Plants of California. ISBN: 9780520253124.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, MS.
- Hanover Environmental Services, Inc. 2002. Wetlands Delineation: Duncan Shopping Center Expansion. October 28.
- Lichvar, R.W., Butterwick, M., Melvin, N.C., and Kirchner, W. 2014. The National Wetland Plant List: 2014 Update of Wetland Ratings. Phytoneuron 2014-41: 1–42. Published April 2, 2014. ISSN 2153 733X.
- U.S. Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS). 2006. Soil Survey of Butte Area, California, Parts of Butte and Plumas Counties.
- U.S. Army Corps of Engineers (USACE). 2015. Preliminary Jurisdictional Determination Letter. November 18.
- U.S. Army Corps of Engineers (USACE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). September.
- U.S. Geological Survey (USGS). 1950. Chico, California. 7.5-minute series topographic quadrangle. United States Department of the Interior.

Research and Field Methodology

This delineation utilized the USACE's 1987 three-parameter (vegetation, hydrology, and soils) methodology to delineate potentially jurisdictional waters of the U.S., including wetlands. The Arid West Supplement was used in conjunction with the USACE Manual for this specific application. Where differences in the two documents occur, the Supplement takes precedence over the USACE Manual.

Additional methods to identify and delineate other waters of the U.S. (e.g., streams, drainages, lakes) were used as applicable. The method typically used for delineation of non-wetland waters of the U.S. is the delineation of the ordinary high water mark as defined in 33 C.F.R. 328.3(e).

A review of current and historic aerial photographs, topographic maps, the National Wetland Inventory, and soil survey data was conducted before delineating the Study Area. In addition, a 2002 Wetland Delineation Report that identifies 0.269 acres of wetlands within the Study Area (Hanover Environmental Services, Inc. 2002) was reviewed. Foothill Associates' biologists conducted a delineation on September 10, 2015. During the field survey, Foothill Associates' visually inspected the entire Study Area to delineate potential waters of the U.S. Soil, vegetative, and hydrological data were recorded. The biologists took several data points in areas where wetlands were previously mapped in the 2002 delineation. The location of each data point is depicted in Exhibit 3.3-3 and corresponding routine wetland determination data forms are provided in **Appendix C**.

GPS Data Integration

Boundaries of aquatic features within the Study Area were surveyed and mapped with a Trimble GeoXT Global Positioning System (GPS) hand-held unit. This is a mapping grade GPS unit capable of real-time differential correction and sub-meter accuracy. The GPS data were downloaded from the units and differentially corrected utilizing Trimble Pathfinder Office software and appropriate base station data, and then converted to ESRI® shape file format. Data are typically exported to the Geographic Information System (GIS) software in the State Plane coordinate system (NAD 83) with units as "survey feet." Within the GIS, data are edited and linear features are built into polygons using recorded width information. All aquatic feature shape files are merged to create a single file with calculated acreages. These results are presented in Exhibit 3.3-3.

Arborist Report

A Foothill Associates ISA-Certified Arborist conducted an arborist survey within the project site on August 19, 2015. The arborist measured all of the trees within the project site and assigned ratings for health and structure.

Peer Review

FCS peer-reviewed the Biological Resources Assessment, Delineation of Waters of the United States, and Arborist Report in 2016 and determined that the methods used in each report are in accordance with industry practice and the conclusions in each report are appropriate based on the evidence in the record.

3.3.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, biological resources impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans,

policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

c) 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?

d) 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 wildlife nursery sites?

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

3.3.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Special-Status Plant Species

Impact BIO-1: The proposed project may adversely impact special-status plant species.

Impact Analysis

The non-native annual grassland within the project site provides habitat for Ahart's paronychia (blooms February through June), Butte County meadowfoam (blooms March through May), woolly meadowfoam (blooms March through June), adobe lily (blooms February through April), Bidwell's knotweed (blooms April through July), Butte County golden clover (blooms March through May), depauperate milkvetch (blooms March through June), Ferris' milk-vetch (blooms April through May), hogwallow starfish (bloom March through June), pink creamsacs (blooms April through June), Red Bluff dwarf rush (blooms March through June), round-leaved filaree (blooms March through May), Tehama navarretia (blooms April through June), and veiny monardella (blooms May through July).

To mitigate this impact, the applicant shall retain a qualified botanist to conduct two focused botanical surveys, one in April and one in May or June, prior to issuance of any grading or construction permits, or commencement of construction activities. If no special-status plants are observed, then a letter report documenting the results of the final survey shall be provided to the project applicant and City of Chico Community Development Department for their records, and no additional measures are required. If any of the non-listed special-status plants occur within the project site, they shall be avoided to the extent feasible. If the plants cannot be avoided, the biologist shall prepare a mitigation plan in consultation with the CDFW. At minimum, the mitigation

plan shall include locations where the plants will be transplanted in suitable habitat adjacent to the project footprint, success criteria, and monitoring activities. CDFW would need to approve the mitigation plan prior to transplantation and commencement of construction activities. These requirements are reflected in Mitigation Measure BIO-1 and would mitigate impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-1 Prior to issuance of any grading or construction permits or the first ground-disturbing activities, the applicant shall retain a qualified botanist to conduct two focused botanical surveys for special-status plant species within the undeveloped portion of the project site. The first survey shall occur in April and the second survey shall occur in either May or June. The surveys shall be conducted for the following plant species: Ahart's paronychia, Butte County meadowfoam, woolly meadowfoam, adobe lily, Bidwell's knotweed, Butte County golden clover, depauperate milkvetch, Ferris' milk-vetch, hogwallow starfish, pink creamsacs, Red Bluff dwarf rush, round-leaved filaree, Tehama navarretia, and veiny monardella. If no special-status plants are observed, then a letter report documenting the results of the final survey shall be provided to the project applicant and the City of Chico Community Development Department for their records, and no additional measures are required. If any of the non-listed special-status plants occur within the project site, they shall be avoided to the extent feasible. If the plants cannot be avoided, the biologist shall prepare a special-status plant mitigation and monitoring plan in consultation with the California Department of Fish and Wildlife (CDFW). The plan shall be subject to CDFW approval and may include, but is not limited, to the following elements as applicable to the species, based on the project impacts, and as determined by CDFW:

- A salvage/transplanting program for the salvage and transfer of special-status plants populations before the initiation of construction activities to another location either off-site or on-site that will be preserved in perpetuity (via conservation easement, deed restriction, or other appropriate legal means). Permits may be required from the CDFW or USFWS if a listed species is found and may require further mitigation in consultation with the appropriate agency or agencies. The program shall specify appropriate timing of salvage and transplanting efforts based on the specific special-status plant species found and the propagation program shall establish success criteria for the affected special-status plants.
- In addition to salvaging of special-status plants themselves, salvage efforts shall include topsoil and seedbanks surrounding impacted plants, if doing so will not contribute to the spread of invasive or noxious plant species.

- Purchasing credits at an off-site mitigation bank approved by USFWS or CDFW, as applicable, based on the listed plant species found.
- Criteria that must be met within the special-status plant mitigation and monitoring plan prior to commencement of construction or grading within the undeveloped portions of the project site.

USFWS or CDFW, as applicable, shall approve the plan prior to transplantation or commencement of grading or construction activities.

This mitigation measure shall not apply if the Draft Butte Regional Conservation Plan is adopted at the time of ground-disturbing activities and provides coverage for impacts to these plant species, and all required conservation measures or mitigation required under the Conservation Plan for this project are implemented. If this scenario occurs, mitigation that occurs pursuant to the Conservation Plan shall not be less than the procedures spelled out in this mitigation measure.

Level of Significance After Mitigation

Less than significant impact.

Special Status Wildlife Species

Impact BIO-2: The proposed project may adversely impact special-status wildlife species.

Impact Analysis

This impact assesses potential impacts on special-status wildlife species including the western spadefoot, burrowing owl, Swainson's hawk, bats, migratory birds, and vernal pool shrimp species.

Western Spadefoot

Western spadefoot could potentially occur within the seasonal wetland and nonnative annual grassland habitat within the project site. The project applicant shall retain a qualified biologist to conduct a protocol survey of the project site at the appropriate time to identify western spadefoot toads (e.g., following a rain event during breeding season, identification other breeding populations in the region). If no western spadefoot are observed, then a letter report shall be submitted to the project applicant and the City of Chico Community Development Department for their records. Additionally, a preconstruction survey shall be conducted within 14 days prior to the start of any ground disturbance. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, a new survey would be required.

If western spadefoot are found, additional avoidance measures shall be implemented, including but not limited to conducting an additional pre-construction survey within 24 hours prior to commencement of construction activities and monitoring on-site during the initial ground disturbance. If western spadefoot are found, the biologist shall be on-site during initial grading. If western spadefoot toad is observed within the project footprint, all construction shall temporarily halt until the biologist relocates the species to suitable habitat within the project site, but outside of the project footprint. These requirements are reflected in Mitigation Measure BIO-2a.

Burrowing Owl

Burrowing owl could potentially occur in the sparse, small-sized burrows and debris stockpile within the non-native annual grassland habitat at the project site. The applicant shall retain a qualified biologist to conduct four protocol-level surveys during the breeding season (one site visit between February 15 and April 15 and three between April 15 and July 15, one of which shall be conducted after June 15), at least three weeks apart, in accordance with the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation (2012 Staff Report). The survey area shall include an approximately 500-foot (150-meter) buffer around the project site, where access is permitted. If the surveys are negative, then a letter report shall be prepared documenting the methodology and results within two weeks following the final survey. If the surveys result in negative findings, biologist shall still conduct a take avoidance survey between 14 days and 30 days prior to commencement of construction, in accordance with the 2012 Staff Report. A letter report documenting the methodology and results shall be submitted to the City of Chico Community Development Department and CDFW within two weeks following the results of the final survey for their records and no additional measures are required.

If burrows are observed within the undeveloped portion of the project site or within 500 feet of the project site, an impact assessment shall be prepared and submitted to the CDFW, in accordance with the 2012 Staff Report. If it is determined that project activities may result in impacts to nesting, occupied, and satellite burrows or burrowing owl habitat, the project proponent shall consult with CDFW and develop a detailed mitigation plan such that the habitat acreage, number of burrows, and burrowing owls impacted are replaced in a manner acceptable to CDFW. The mitigation plan shall be based on the methods provided in the 2012 Staff Report. These requirements are reflected in Mitigation Measure BIO-2b.

Swainson's Hawk

The CDFW considers 5 or more vacant acres within 10 miles of an active nest within the last 5 years to be significant foraging habitat for Swainson's hawk, the conversion of which to urban uses is considered a significant impact, in accordance with the California Department of Fish and Wildlife's Staff Report Regarding Mitigation for Impacts to Swainson's Hawk in the Central Valley of California. The Staff Report states that foraging habitat loss for projects located greater than 5 miles but less than 10 miles of an active nest tree documented within the last 5 years shall be mitigated at a 0.5:1 ratio. The project site occurs greater than 5 miles, but less than 10 miles of active Swainson's hawk; however, the nests were not documented within the last 5 years. Therefore, no mitigation is required for the removal of non-native annual grassland.

Bats

The ornamental trees provide potential roosting habitat for special-status bats. Four trees are proposed for removal, which may result in the potential loss of roosting habitat. Requiring pre-construction surveys for special-status bat species are required within 14 days prior to the start of ground disturbance or tree removal would either document that there would be no impacts to bats, or would enable impacts to bats to be identified and addressed prior to the impact occurring. If no special-status bats are observed roosting, then a letter report documenting the results of the survey shall be provided to the project applicant and the City of Chico Community Development

Department for their records, and no additional measures are required. A new survey would be required if construction does not commence within 14 days of a negative survey or if any trees anticipated for removal are not removed within 14 days of a negative survey, or if construction resumes after halting for more than 14 days a new survey is required.

If bats are found, consultation with the CDFW is required to determine avoidance measures. Avoidance measures may include establishing a buffer around the roosting location until it is no longer occupied. Construction, including but not limited to tree removal, shall not proceed near the roosting location until the biologist has determined that the roost is no longer occupied by the bats. These requirements are reflected in Mitigation Measure BIO-2c.

Migratory Birds and Other Birds of Prey

Four trees are proposed for removal, which may result in the potential loss of nesting habitat for avian species. Migratory birds and other birds of prey, protected under 50 CFR 10 of the MBTA or Section 3503 of the California Fish and Game Code have the potential to nest in the nonnative annual grassland and within the trees and shrubs within the non-native annual grassland, and disturbed/developed habitats. Vegetation clearing operations, including pruning or removal of the ornamental trees and shrubs, shall be completed between September 1 and February 14, if feasible. If vegetation removal begins during the nesting season (February 15 to August 31), the applicant shall retain a qualified biologist to conduct a preconstruction survey for active nests. The pre-construction survey shall be conducted within 14 days prior to commencement of ground-disturbing activities. If the preconstruction survey shows that there is no evidence of active nests, then a letter report shall be submitted to the project applicant and the City of Chico Community Development Department for their records and no additional measures are required. If construction does not commence within 14 days of the preconstruction survey, or halts for more than 14 days, an additional pre-construction survey is required.

If any active nests are located within the project site, an appropriate buffer zone shall be established around the nests, as determined by the biologist. The biologist shall mark the buffer zone with construction tape or pin flags and maintain the buffer zone until the end of breeding season or until the young have successfully fledged. Buffer zones are typically 100 feet for migratory bird nests and 250 feet for raptor nests. If active nests are found on the project site, a qualified biologist shall monitor nests weekly during construction to evaluate potential nesting disturbance by construction activities. If establishing the typical buffer zone is impractical, the qualified biologist may reduce the buffer depending on the species, and daily monitoring is required to ensure that the nest is not disturbed and no forced fledging occurs. Daily monitoring shall occur until the qualified biologist determines that the nest is no longer occupied. These requirements are reflected in Mitigation Measure BIO-2d.

Vernal Pool Shrimp (California Linderiella, Fairy Shrimp, Tadpole Shrimp)

The seasonal wetland provides marginal habitat for the federally listed vernal pool fairy shrimp and vernal pool tadpole shrimp and the non-listed California linderiella. It is anticipated that the project would avoid the seasonal wetland, in which case there would be no direct impacts to these species.

Indirect impacts to these species could occur if unrestricted construction activities take place within 250 feet of the seasonal wetland. Exhibit 3.3-4 depicts the seasonal wetland's relationship to the proposed project. With implementation of the measures identified below, indirect impacts to the seasonal wetland, which could provide habitat for the federally listed shrimp species, would be avoided:

- Install silt and high-visibility fencing a minimum of 50 feet from the edge of the seasonal wetland;
- Conduct a Worker Awareness Training Program prior to the start of construction;
- Have a qualified biological monitor on-site during vegetation clearing and initial grading activities; and
- Develop and implement a dust control plan

If impacts to the seasonal wetland become anticipated or possible at a future date, such as with the future development of Parcel 2, then the applicant can either assume presence or conduct protocol surveys for listed vernal pool branchiopods in accordance with the USFWS Survey Guidelines prior to any ground-disturbing activities. Protocol surveys consist of one wet-season survey and one dry-season survey. If the applicant elects to conduct protocol-level surveys and the surveys result in negative findings of the federally listed species, then no additional measures are required so long as the USFWS accepts the negative survey results. If listed branchiopods are found during protocol surveys or presence is assumed, then consultation with the USFWS will be required to determine avoidance, conservation, and specific mitigation measures. These requirements are reflected in Mitigation Measure BIO-2e.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-2a Prior to any ground-disturbing activities, the applicant shall retain a qualified biologist to conduct a protocol-level survey for the western spadefoot during the appropriate period to identify western spadefoot toads (e.g., following a rain event during the breeding season, identification of other known active breeding populations in the region). If no western spadefoot are observed, then a letter report shall be submitted to the City of Chico Community Development Department and CDFW for their records. Additionally, a preconstruction survey shall be conducted within 14 days prior to the start of any ground disturbance to verify absence of this species from the project area.

If western spadefoot are found, ground disturbance shall cease and consultation with CDFW shall occur prior to resumption of ground-disturbing activities to develop an impact minimization plan that may include but is not limited to relocation, timing restrictions, habitat compensation, etc. The plan shall be reviewed and subject to approval by CDFW and implemented prior to ground-disturbing activities.

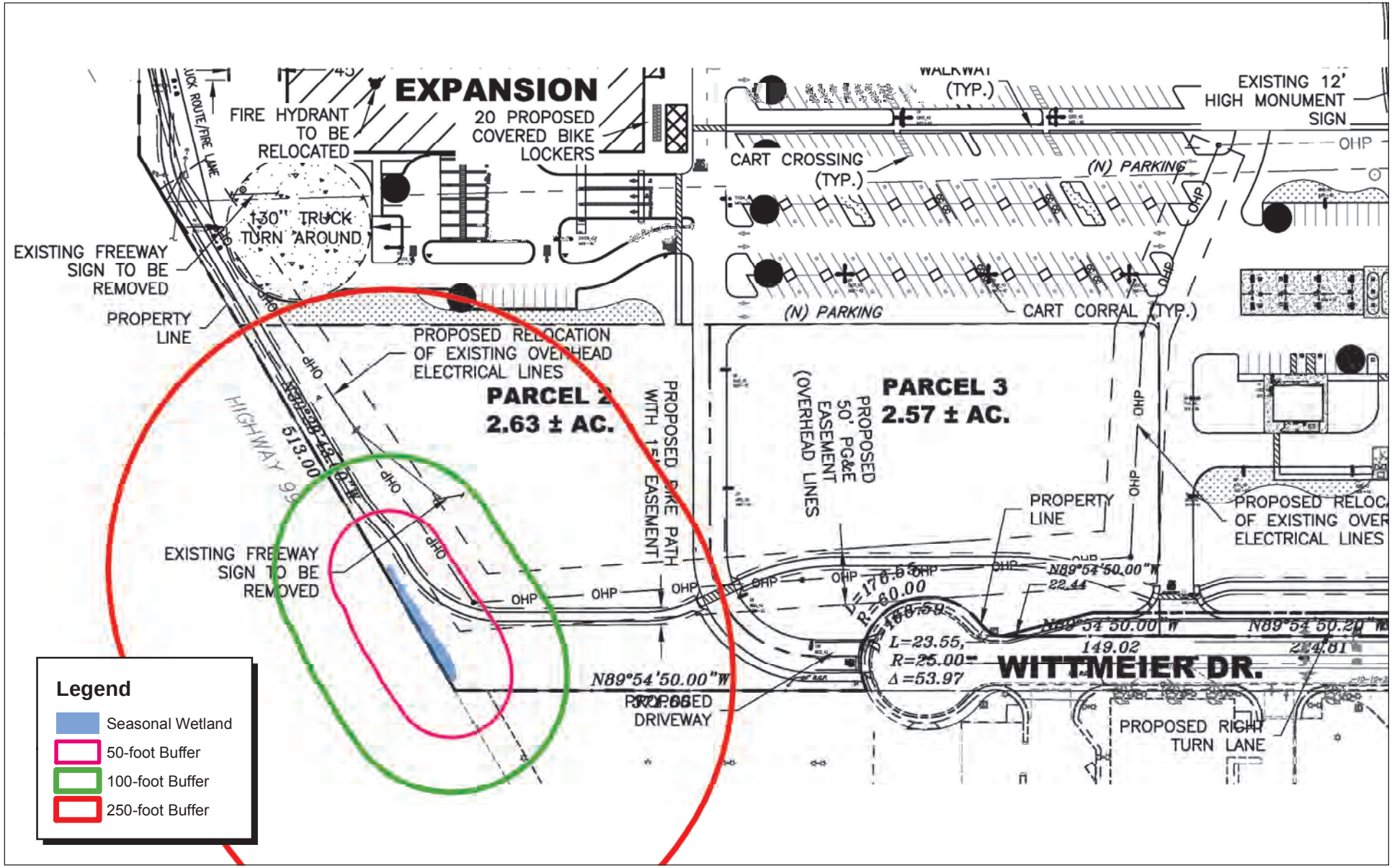
In addition, if western spadefoot are found, the biologist shall be on-site during initial grading. If western spadefoot toad is observed within the project footprint, all ground disturbance shall temporarily halt until the biologist relocates the species to suitable habitat within the project site, but outside of the project footprint, or other suitable location in the project vicinity.

This mitigation measure shall not apply if the Draft Butte Regional Conservation Plan is adopted at the time of ground-disturbing activities and provides coverage for impacts to the western spadefoot and all required conservation measures or mitigation required under the Butte Regional Conservation Plan for this project are implemented. If this scenario occurs, mitigation that occurs pursuant to the Conservation Plan shall not be less than the procedures spelled out in this mitigation measure.

MM BIO-2b Prior to the first ground-disturbing activities, the project applicant shall retain a qualified biologist to conduct four protocol-level surveys during the breeding season (one site visit between February 15 and April 15 and three between April 15 and July 15, one of which shall be conducted after June 15), at least three weeks apart, in accordance with the 2012 California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation (2012 Staff Report). The survey shall include an approximately 500-foot (150-meter) buffer around the project site, where access is permitted. If the surveys are negative, then a letter report shall be prepared documenting the methodology and results within two weeks following the final survey. If the surveys result in negative findings, the biologist shall still conduct a take avoidance survey between 14 days and 30 days prior to commencement of construction, in accordance with the 2012 Staff Report. A letter report documenting the methodology and results shall be submitted to the City of Chico Community Development Department and CDFW following the results of the final survey for their records.

If burrows are observed within the undeveloped portion of the project site or within 500 feet of the project site, an impact assessment shall be prepared and submitted to the CDFW, in accordance with the 2012 Staff Report. If it is determined that project activities may result in impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat, the project proponent shall consult with CDFW and develop a detailed mitigation plan such that the habitat acreage, number of burrows, and burrowing owls impacted are replaced in a manner acceptable to CDFW. The mitigation plan shall be based on the methods provided in the 2012 Staff Report.

This mitigation measure shall not apply if the Draft Butte Regional Conservation Plan is adopted at the time of ground-disturbing activities and provides coverage for impacts to the burrowing owl and all required conservation measures or mitigation required under the Butte Regional Conservation Plan for this project are implemented. If this scenario occurs, mitigation that occurs pursuant to the Conservation Plan shall not be less than the procedures spelled out in this mitigation measure.



Source: RSC Engineering, 2016; Foothill Associates, 2015

FirstCarbon SOLUTIONS

130 65 0 130 Feet

Exhibit 3.3-4
Seasonal Wetland Attributes

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MM BIO-2c No more than 14 days prior to the start of ground disturbance or tree removal, the applicant shall retain a qualified biologist to conduct a pre-construction surveys for special-status bat species. If no special-status bats are observed roosting, then a letter report documenting the results of the survey shall be provided to the City of Chico Community Development Department, CDFW, and any other applicable resource agency for their records. A subsequent bat survey shall be required if construction does not commence within 14 days of a negative survey, or if construction is planned to resume after halting for more than 14 days.

If bats are found, the biologist shall consult with the CDFW prior to ground disturbance, tree removal, or other construction activity to determine specific avoidance measures. Avoidance measures may include establishing a minimum 250-foot buffer around the roosting location until it is no longer occupied. Construction activities, including but not limited to tree removal, shall not proceed within the buffer until the biologist has determined that the roost is no longer occupied by the bats and has communicated the determination in writing to the City of Chico Community Development Department and CDFW.

MM BIO-2d No more than 14 days prior to any vegetation removal activities that occur during the nesting season (February 15 and August 31), the applicant shall retain a qualified biologist to conduct a preconstruction survey for active nesting bird nests. If the preconstruction survey shows that there is no evidence of active nests, then a letter report shall be provided to the City of Chico Community Development Department and any applicable resource agency for their records.

If any active nests are located within the project site, an appropriate buffer zone shall be established around the nests, as determined by the biologist. The biologist shall mark the buffer zone with construction tape or pin flags and maintain the buffer zone, where construction activities shall be prohibited, until the end of breeding season or until the young have successfully fledged. Buffer zones are typically 100 feet for migratory bird nests and 250 to 500 feet for raptor nests. A qualified biologist shall monitor active nests weekly during construction to evaluate potential nesting disturbance by construction activities. If establishing the typical buffer zone is impractical, the qualified biologist may reduce the buffer depending on the species, and daily monitoring by the biologist is required to ensure that the nest is not disturbed and no forced fledging occurs. Monitoring as described above shall continue until the qualified biologist determines that the nest is no longer occupied and has communicated the determination in writing to the City of Chico Community Development Department and applicable resource agency.

This mitigation measure does not apply to vegetation removal activities that occur outside of the nesting season (September 1 to February 14).

MM BIO-2e For phases of the project that would result in ground disturbance within 250 feet of the seasonal wetland but do not involve any disturbance within 50 feet of the

seasonal wetland, the applicant shall implement indirect impact avoidance measures as follows:

1. Retain a qualified biologist to direct the installation of silt fencing and high-visibility fencing a minimum of 50 feet from the edge of the seasonal wetland;
2. Conduct a Worker Awareness Training Program prior to the start of construction informing workers of the wetland and advising them to stay clear of the area. The training shall be repeated as necessary for all subsequent sub-contractor crews that are scheduled to begin working on the project;
3. Retain a qualified biologist to monitor on-site vegetation clearing and initial grading activities; and
4. Develop and implement a dust control plan, consistent with Rule 205 of the Butte County Air Quality Management District (Fugitive Dust Emissions), which regards the silt fencing around the seasonal wetland as a property line over which allowing wind-driven fugitive dust shall be minimized.

Upon submitting applications to the city for grading, construction, or other site disturbance, the developer shall provide a scaled drawing that depicts the wetland, 50-foot and 250-foot buffers around the wetland, and proposed work area(s), including designated equipment/material staging and worker parking areas. The developer shall arrange a preconstruction inspection of the silt/visibility fencing by city staff prior to commencement of construction.

If future phases of the project necessitate directly impacting the seasonal wetland, such as development of Parcel 2 or other project feature, the developer shall either assume presence or conduct protocol-level surveys for listed vernal pool branchiopods in accordance with the USFWS Survey Guidelines prior to any ground-disturbing activities. Protocol surveys consist of one wet-season survey and one dry-season survey. If the developer decides to conduct protocol-level surveys and the surveys result in negative findings of the federally listed species, then no additional measures are required so long as the USFWS accepts the negative survey results. If listed branchiopods are found during protocol surveys or presence is assumed, then the applicant shall pursue consultation with the USFWS to obtain a Biological Opinion that authorizes the work. The developer shall implement all conditions (aka Reasonable and Prudent measures) identified in the Biological Opinion as well as those contains in any associated permits.

If a future phase of the project necessitates work within 50 feet of the seasonal wetland but no direct impacts are anticipated then the developer shall prepare a detailed plan for the work demonstrating that no impacts will occur to the wetland and obtain letter of no effect (or “not likely to adversely affect” determination) from the Army Corps of Engineers.

This mitigation measure shall not apply if the Draft Butte Regional Conservation Plan is adopted at the time of grading activities and provides coverage for impacts to the

listed vernal pool shrimp species, and all required conservation measures or mitigation required under the Conservation Plan for this project are implemented. If this scenario occurs, mitigation that occurs pursuant to the Conservation Plan shall not be less than the procedures spelled out in this mitigation measure.

Level of Significance After Mitigation

Less than significant impact.

Sensitive Natural Communities or Riparian Habitat

Impact BIO-3: The proposed project may impact the seasonal wetland, which is considered a sensitive natural community.

Impact Analysis

The depressional seasonal wetland (0.02 acre) is considered a sensitive natural community and impacts to the wetland are potentially significant. No direct impacts to the wetland are proposed, and indirect impacts would be avoided during certain phases of the project pursuant to Mitigation Measure BIO-2e. Exhibit 3.3-4 depicts the seasonal wetland's relationship to the proposed project.

Two project features are proposed within 50 feet of the seasonal wetland: one of the poles associated with the relocated high-voltage overhead power lines, and the relocated Class I bicycle/ pedestrian path. Mitigation Measure BIO-3 is provided, which requires relocating the power line pole and bike path a minimum of 50 feet from the wetland such that the indirect impact measures of Mitigation Measure BIO-2e can be implemented. With these changes to the project, no direct or indirect impacts to the seasonal wetland would occur during construction of all project features currently proposed for construction.

For any future project phases that necessitate work within 50 feet of the seasonal wetland, such as development of Parcel 2 or other project feature, the developer shall implement Mitigation Measure BIO-4, which requires the applicant to obtain the requisite approvals from USACE and RWQCB. The implementation of Mitigation Measures BIO-2e, BIO-3, and BIO-4 would reduce this potential impact to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure BIO-2e, Mitigation Measure BIO-4, and:

MM BIO-3 The applicant shall modify all improvement plans and construction drawings to provide a minimum separation of 50 feet between the seasonal wetland and (1) the poles associated with the relocated high-voltage overhead power lines, and (2) the relocated Class I bicycle/pedestrian path, subject to review and approval by City Public Works and Community Development Department staff. The separation distance of these project features from the wetland shall be sufficient to enable implementation of the indirect impact avoidance measures of Mitigation Measure

BIO-2e. No ground disturbance shall occur within 50 feet of the seasonal wetland unless Mitigation Measure BIO-4 is implemented.

Level of Significance After Mitigation

Less than significant impact.

Federally Protected Wetlands

Impact BIO-4: The proposed project may impact federally protected wetlands.

Impact Analysis

As shown in Exhibit 3.3-3, a 0.02-acre depressional seasonal wetland is located in the southwestern corner of the project site. Exhibit 3.3-4 depicts the seasonal wetland's relationship to the proposed project. The feature is a federally protected wetland. No development is proposed that would directly impact the wetland. Mitigation Measures BIO-2e and BIO-3 would require relocating all known project features at least 50 feet away from the wetland such that indirect impact avoidance measures can be implemented during construction.

However, the future development plans for Parcel 2 are not known at this time and could result in direct and/or indirect impacts to the wetland.

If construction is necessary within 50 feet of the wetland, then there is potential for direct or indirect impacts to the federally protected depressional seasonal wetland, Mitigation Measure BIO-4 requires the project applicant to obtain a Section 404 Clean Water Act Permit from the USACE and a Section 401 Water Quality Certification from the RWQCB prior to the issuance of any construction, grading, or demolition permits that entail work within 50 feet of the wetland. If the USACE or RWQCB determine that no permit from their agency is required for a particular phase of the project, then Mitigation Measure BIO-4 provides that letters to that effect from each agency would satisfy the mitigation for the project phase in question. Regarding any direct impacts to the wetland, the mitigation requires that any Waters of the U.S. or jurisdictional wetlands that would be lost or disturbed shall be replaced or rehabilitated on a "no-net loss" basis in accordance with the USACE mitigation guidelines or permit conditions. The implementation of this mitigation measure would reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM BIO-4 If construction occurs within 50 feet of the depressional seasonal wetland in the southwestern portion of the project site, the applicant shall obtain all requisite approvals and permits from the USACE and Regional Water Quality Control Board (RWQCB) for impacts to Waters of the United States and Waters of the State prior to issuance of any City permits for construction, grading, or demolition activities that occurs within 100 feet of the resource. If the USACE or RWQCB determine that no permit from their agency is required for a particular phase of the project, then this

mitigation measure only requires acknowledgement of such from each agency regarding the project phase in question. If any future phase of the project involves direct impacts to the wetland, then the developer shall mitigate the impact through either (1) creation and preservation of seasonal wetland habitat within the project site, (2) off-site restoration of features of equal or greater value, or (3) purchase of credits at an agency-approved mitigation bank in the region at a ratio to be determined through consultation with the USACE and RWQCB, but no less than a 1:1 ratio.

This mitigation measure shall not apply if the Draft Butte Regional Conservation Plan is adopted at the time of grading activities and provides coverage for impacts to the depressional seasonal wetland, and all required conservation measures or mitigation required under the Conservation Plan for this project are implemented. If this scenario occurs, mitigation that occurs pursuant to the Conservation Plan shall not be less than the procedures spelled out in this mitigation measure.

Level of Significance After Mitigation

Less than significant impact.

Fish or Wildlife Movement

Impact BIO-5: The proposed project would not adversely impact fish or wildlife movement.

Impact Analysis

The project site is not part of a major or local wildlife corridor because it does not connect two significant habitats. The project site is surrounded by commercial and residential development. There are no riparian corridors, drainages, or contiguous habitats that connect from the project site to surrounding natural habitats or allow for fish movement. Therefore, there are no fish or wildlife movement corridors that occur within the project site. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Local Biological Policies or Ordinances

Impact BIO-6: The proposed project would not conflict with any local biological policies or ordinances.

Impact Analysis

The project site contains 240 existing trees, four of which are proposed for removal. The landscape plans would provide approximately 262 new trees within the expanded parking area and other locations throughout the site. Only one tree proposed for removal—a 13-inch-diameter cork oak—is subject to the replacement requirements of the City's Tree Preservation Regulations. Two 15-gallon trees planted outside of required tree-planting areas would be required to offset removal of the cork oak. Approximately 67 trees are proposed outside of required tree planting areas; thus, the proposed project would exceed the minimum replanting requirements set forth in the Municipal Code. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

Conservation Plan Consistency

Impact BIO-7: The proposed project would not conflict with the provisions of the Draft Butte Regional Conservation Plan.

Impact Analysis

At the time of this writing, the Draft Butte Regional Conservation Plan had not been adopted and is not expected to be adopted by the time this project is considered by the City of Chico Planning Commission. Nonetheless, in the interests of informed decision-making, project consistency with the Conservation Plan is addressed.

The project site is located within the boundaries of the proposed Draft Butte Regional Conservation Plan. The plan has been developed to provide coverage for the "take" of 38 threatened and endangered plant and wildlife species within approximately 560,000 acres of western Butte County, including areas within the City of Chico. The Conservation Plan include programmatic state and federal "take" permits for activities and projects identified in General Plans that have the potential to impact the covered sensitive species and habitats. The project site is located within one of 15 Urban Permit Areas identified by the plan. The Conservation Plan covers all land-disturbing activities within the Urban Permit Areas; therefore, development activities associated with the proposed project would not conflict with the provisions of the Draft Butte Regional Conservation Plan. Impacts would be less than significant impact.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.

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3.4 - Cultural Resources

3.4.1 - Introduction

This section describes the existing cultural resources setting and potential effects from project implementation on the site and its surrounding area that are based on the Cultural Resources Assessment prepared by Foothill Associates, provided in **Appendix D**.

3.4.2 - Environmental Setting

Overview

The term "cultural resources" encompasses historic, archaeological, and paleontological resources, and burial sites. Below is a brief summary of each component:

- **Historic Resources:** Historic resources are associated with the recent past. In California, historic resources are typically associated with the Spanish, Mexican, and American periods in the State's history and are generally less than 200 years old.
- **Archaeological Resources:** Archaeology is the study of prehistoric human activities and cultures. Archaeological resources are generally associated with indigenous cultures.
- **Paleontological Resources:** Paleontology is the study of plant and animal fossils.
- **Burial Sites:** Burial sites are formal or informal locations where human remains, usually associated with indigenous cultures, are interred.

Cultural Setting

Prehistory

While the earliest human occupation of Central California is still debated, it can be argued that the close of prehistory coincided with the first evidence of European trade goods appearing in coastal Marin shell middens circa 1595 or earlier. However, it was not until two centuries later that Native Americans at the eastern edge of the Sacramento Valley experienced their first direct contact with Europeans, which signaled the end of isolation for these interior non-literate societies.

Prior to the 1950s, the Sacramento Valley north of the Delta was the object of only a few scientific excavations. University of California, Berkeley sponsored a few reconnaissance level surveys including that of Nels Nelson. During the 1930s, archaeologists conducted excavations at prehistoric sites to test the geographic extent and variability of the archaeological "horizons" formulated for the Delta region by Lillard and others.

Despite this early work, the prehistory of the northern Sacramento Valley remained largely unknown until the major water projects of the 1950s and 1960s. In the early 1950s, Adan Treganza from San Francisco State College directed surveys at Oroville and other proposed reservoirs. Based on these and other research, Clement Meighan proposed the "Shasta Complex," which seemed to characterize the northern Sacramento Valley and uplands after A.D. 1600.

Excavations at Oroville sites during the 1960s helped to shape understanding of the regional culture sequence. Excavations at CA-BUT-84, CA-BUT-98, and CA-BUT-157 helped to define the Mesilla Complex, which seemed to reflect a sporadic or seasonal occupation of the foothills between 1,000 B.C and A.D. 1 by a people who used the atlatl and dart, as opposed to the bow and arrow. Other components of Mesilla were bowl mortars, millingstones, Haliotis and Olivella shell beads, charmstones, bone pins, and spatulae—all of which show some relationship with Sacramento Valley peoples of the time, while projectile points of basalt, slate and chert suggest influences if not a "genetic" relationship with the trans-Sierra Martis Complex.

Permanent villages characterized the Bidwell Complex (A.D. 1 to A.D. 800). Still later in time, the Sweetwater Complex, A.D. 800–1500, characterized by an industry in making cups, platters and bowls from steatite, and small projectile points of Gunther Barbed, Eastgate and Rose Spring styles indicated introduction of the bow and arrow.

The following Oroville Complex appeared to reflect the proto-historic Maidu from A.D. 1500 to the epidemic of 1833. The Oroville culture sequence ended with the historic period and abandonment of traditional Maidu settlements. In the region from Auburn to Oroville, the results of archaeological research reflected influences from the Sierra, Great Basin, and the Sacramento Valley.

A recent updated synthesis notes little new information in the region due to few new excavations and the inadequacy of older collections in meeting the needs of current research objectives. However, researchers have taken the generally recognized cultural periods and updated the time span of each period based on new radiocarbon determinations adjusted with modern calibration curves:

- Paleo-Indian (11550–8550 cal B.C.)
- Lower Archaic (8550–5550 cal B.C.)
- Middle Archaic (5550–550 cal B.C.)
- Upper Archaic (550 cal B.C.–cal A.D. 1100)
- Emergent (cal A.D. 1100–Historic)

Ethnography and Ethnohistory

The Konkow (Northwestern Maidu) lived in villages along the Feather River, and along the Sacramento River north of and including some land occupied by the Patwin after A.D. 1700, according to Francis Riddell. The southernmost Konkow villages on the Sacramento were *Kobatasdayim* and *Kowkowki yakim*. Konkow territory could be described as a large inverted "V" shape north of the Marysville Buttes, with the interior of the "V" remaining vacant land that may have been used for hunting and gathering. Chico lies near the top of the inverted "V." The project site lies about 7 miles east of the Sacramento River in the general vicinity of west-flowing creeks including Comanche Creek, 0.5 mile south of the Walmart project site and Little Chico Creek, one mile north of the project site. The nearest village with a roundhouse (dance house) was *micupda* south of Chico. At least five other village sites are noted by Riddell in the general area of Chico.

Anthropologist Alfred Kroeber indicated the likelihood that a Maidu individual probably had only the vaguest recognition of any Pomo-speaking people farther to the west, and even of the intervening

Wintuan-speakers (River Patwin) who occupied, in his words, “a comparatively narrow and open strip of land” along the Sacramento River. In Kroeber's experience and in the experience of Kroeber's students interviewing native people, no northern Californian would go far from his home. This situation changed, of course, after European contact when native militarism was on the rise.

In the Sacramento Valley, Maiduan-speaking people used the same term, *K'umi*, to describe their semi-subterranean, earth-covered dance house, their small sweat house, and their individual dwellings. These three types of structures differed mainly in relative size. Villages of importance had a dance house. Small villages did not have a dance house, although ceremonials may have been conducted there nonetheless. Dwellings ranged in size and so any one village may have had both large and small houses.

Among the stone tools used by Maiduan speakers, Kroeber notes that in the California coast region, metates were not known from San Francisco Bay, north. At the same latitude in the interior of California, Maidu people used the metate, which was nothing more than a slab tilted at a slight angle. The metate was used to grind dry seeds, such as grass, sage and *Compositae*, rather than the mortar, which was used to pulverize acorns and for other purposes. Other stone artifacts included grooved pieces of sandstone used to smooth arrow shafts, chipped stone skin dressing tools, chipped stone and ground stone axes, chipped stone knives and arrowheads of traded obsidian and local flint-like and basalt-like rocks. A sacred flint mine was located at Table Mountain near Oroville.

Maiduan-speakers were hunters-fishers-gatherers. Salmon and eels were taken seasonally. Elk and deer were hunted by individual hunters. Kroeber reported that deer were also taken by companies of men in communal drives, although this custom appears to have applied mainly to the mountain Maidu. Rabbits and some birds were taken by nets. Salmon were harpooned or taken with nets. Hooks were also used to catch fish. Deer and salmon vertebrae were crushed by the natives in mortars and served as a delicacy. Acorns were a staple. In addition to the dwelling, sweat house, and dance house structures, acorn granaries were a common sight in villages.

History

Spain's concern for Alta California was pressed by rumors of Russian interests in hunting for furs in the Aleutians and Alaska and British interest in the North Pacific. These rumors prompted the Spanish Court to order the Viceroy of New Spain to investigate the Russian danger. The Viceroy then ordered an investigator with the power to observe, investigate, and act. The man was Jose de Galvez, Visitador.

The ensuing expeditions to occupy Alta California culminated in the discovery of San Francisco Bay by Portola's hunters who had climbed the hills to the east of Half Moon Bay.

From these incursions in the 1700s, California became a “buffer colony” protecting New Spain's other colonies from Russian and British incursions. Juan Bautista Anza selected Fort Point for the presidio and Arroyo de los Dolores for the mission at San Francisco. Moraga, Palau, and Cambon led settlers to the sites thus founding the presidio in September and the mission in October 1776.

Over the next several decades, the Spanish collected natives for labor at the missions and distributed land to settlers to diminish expenses to the royal treasury. Felipe de Neve took direct charge of Alta California in 1777. Neve's accomplishment was to revise the basic laws of the colony; his revisions stood as law until the end of the Spanish period in California. Neve's emphasis on secular authority included the founding of pueblos, which was a step away from the mission system of control over the growing local population.

In the War of Independence from Spain, California was largely neutral. American, British, and Russian ships provided some relief from the severed lines of commerce from Spain and mainland Mexico. In early 1822, Californians were told of the victory of the Mexican revolutionaries. Secularization of the missions was approved by the Mexican administration, which was in keeping with the new Mexican republicanism of divesting missions of their large tracts of land and enslavement of the native people.

With the fall of the mission system came the rise of the ranchos. In 1844, Governor Manuel Micheltorena granted 22,194 acres to Edward A. Farwell. The grant, Rancho de Farwell, encompassed part of present-day Chico. During the relatively brief period of ranchos, livestock roamed the hills. Hides and tallow were shipped out of California in large scale. California attracted English and American traders, Russian fur hunters, and American settlers, all of whom presaged the end of Mexican control.

In 1845, Farwell sold the north half of his grant to James and John S. Williams. In that same year, Farwell died. However, it was not until 1863 that the United States Land Commission and the District Court confirmed the grant to Williams and Edward Farwell's heirs.

Like many counties in the Central Valley in the late 1850s through the 1870s, Butte County was a center of wheat production. In the 1860s the County became one of the largest grain growing regions in the State with approximately 240,000 acres under cultivation. By 1877 it had become the largest wheat producer in California.

This growth was substantially aided by the development of railroads. The California Northern Railroad linking Sacramento and Marysville was the first railroad in the County. In 1870, a Central Pacific Railroad line to Chico was completed. The development of the railroads in turn promoted town building to provide terminals for wheat shipping.

Wheat cultivation was a dry-farming activity dependent on rainfall and large land holdings. A severe winter in 1889–1890 followed by two subsequent years of bad weather took an economic toll on the County's wheat farmers, driving some out of business. At the same time, two decades of wheat growing had depleted the soil, causing yields successively declined.

While these conditions were important in the decline of grain production in the County, the introduction of orchard crops, such as oranges, olives, peaches, figs, and grapes, played a crucial role in shifting the County's agricultural economy toward orchard and vineyard cultivation dependent on irrigation. In 1887, the first olive groves were planted and by 1889, the first olive pickling factory was established in Oroville, followed in the 1890s by the opening of several olive oil production facilities.

In 1900, the entire section (Section 31) in which the project site is located was granted to the Central Pacific Railroad.

Geology and Paleontology

Most if not all of the Walmart project site is surfaced with Holocene basin deposits illustrated as "Qb" on the geologic map compiled by Saucedo and Wagner (1992). The northwest corner of the Direct Area of Potential Effect (APE) may extend slightly into the late Pleistocene Modesto Formation (Qm). Both Modesto Formation and the late Pleistocene Riverbank Formation (Qrb) units lie beneath the Holocene deposits that likely thicken southward within the Direct APE.

Holocene basin deposits are too young to be considered potentially fossiliferous. Both Modesto and Riverbank formations consist of potentially fossiliferous alluvium and correlate with the Rancholabrean Land Mammal Stage.

3.4.3 - Regulatory Framework

Federal

National Historic Preservation Act

The National Historic Preservation Act of 1966 (NHPA), as amended, established the National Register of Historic Places (NRHP), which contains an inventory of the nation's significant prehistoric and historic properties. Under 36 CFR 60, a property is recommended for possible inclusion on the NRHP if it is at least 50 years old, has integrity, and meets one of the following criteria:

- It is associated with significant events in history, or broad patterns of events.
- It is associated with significant people in the past.
- It embodies the distinctive characteristics of an architectural type, period, or method of construction; or it is the work of a master or possesses high artistic value; or it represents a significant and distinguishable entity whose components may lack individual distinction.
- It has yielded, or may yield, information important in history or prehistory.

Certain types of properties are usually excluded from consideration for listing in the NRHP, but they can be considered if they meet special requirements in addition to meeting the criteria listed above. Such properties include religious sites, relocated properties, graves and cemeteries, reconstructed properties, commemorative properties, and properties that have achieved significance within the past 50 years.

State

California Register of Historical Resources

As defined by Section 15064.5(a)(3)(A-D) of the CEQA Guidelines, a resource shall be considered historically significant if the resource meets the criteria for listing on the California Register of Historical Resources (CR). The CR and many local preservation ordinances have employed the criteria for eligibility to the NRHP as a model, since the NHPA provides the highest standard for evaluating the significance of historic resources. A resource that meets the NRHP criteria is clearly

significant. In addition, a resource that does not meet the NRHP standards may still be considered historically significant at a local or state level.

California Environmental Quality Act

The CEQA Guidelines state that a resource need not be listed on any register to be found historically significant. The CEQA guidelines direct lead agencies to evaluate archaeological sites to determine if they meet the criteria for listing in the CR. If an archaeological site is a historical resource, in that it is listed or eligible for listing in the CR, potential adverse impacts to it must be considered. If an archaeological site is considered not to be an historical resource but meets the definition of a "unique archeological resource" as defined in Public Resources Code Section 21083.2, then it would be treated in accordance with the provisions of that section.

Tribal Consultation

Public Resources Code 21080.3.1 establishes tribal consultation requirements for new development projects that may impact Tribal Cultural Resources. The City of Chico sent a letter to the Mechoopda Indian Tribe of Chico Rancheria, dated September 24, 2015, notifying the tribe of the proposed project and advising that any tribal consultation request should be made within 30 days. A copy of the letter is provided in **Appendix D**. To date, the City of Chico has not received a tribal consultation request from the Mechoopda Indian Tribe of Chico Rancheria.

3.4.4 - Methodology

Foothill Associates prepared a Cultural Resources Assessment that evaluated the potential for cultural resources to be encountered on the project site. The complete Cultural Resources Assessment is provided in **Appendix D**. The methods of the assessment are described as follows.

UCMP Database Search Results

On October 25, 2015, Kenneth L. Finger, PhD conducted a search of the University of California, Berkeley's Museum of Paleontology database. The search identified six vertebrate localities in Butte County. However, only one of the localities reflected Quaternary paleontological resources, and that locality is represented by bird eggshell collected from an unidentified late Pleistocene unit not in the vicinity of the project site.

Northeast Information Center Records Search Results

On October 19, 2015, the Northeast Center of the California Historical Resources Information System completed a cultural resources records search for the project site. Information center staff reviewed records and maps and found no previously recorded prehistoric resources located within the project area or with a 0.5-mile radius of the proposed project. In addition, according to the information center, no records were found of historic resources located within the project area or within a one-half mile radius.

Information center staff noted that the USGS Chico 7.5-minute and Chico (1949) 15-minute quadrangles show that the project site is located within the City of Chico. The maps also illustrate

roads fairgrounds, Stirling Junction, Fair Street, Morrow Lane, Comanche Creek, State Route 99, Chapmantown, Chapman School, Bruce Road, Little Chico Creek, and other landmarks.

Staff also noted that the Arroyo Chico land to the northwest was granted to William Dickey in 1844, the same year in which Edward Farwell was granted Rancho de Farwell. The Town of Chico was founded in 1860 on Rancho Arroyo.

Information center staff reviewed the official records and maps for archaeological sites and surveys in Butte County. Staff also reviewed the National Register of Historic Places Listed Properties and Determined Eligible Properties (2012); California Inventory of Historic Resources (1976); Directory of Properties in the Historic Property Data File for Butte County (20 12); Handbook of North American Indians, Vol. 8, California (1978).

One previous archaeological survey is located partly on the south portion of the Walmart project site: the 1978 Archaeological Reconnaissance of the Pierce Property, Butte County, California by James P. Manning. The letter report indicated that the survey covered approximately 100 acres of land characterized as a relatively flat, open field. The archaeologist traversed the field in 30-meter transects.

Native American Coordination

On October 22, 2015, the Native American Heritage Commission (NAHC) completed a search of its sacred lands file for the project site. In the commission's letter report, staff indicated that the file search failed to indicate the presence of Native American cultural resources in the immediate project vicinity. Staff enclosed a list of Native American individuals and organizations that may have knowledge of cultural resources in the area.

The tribal representatives were contacted by U.S. mail in a letter dated October 28, 2015, or by email with the letter attached. The letter indicated that the NAHC recommended contacting each individual for information he or she may have regarding specific knowledge of cultural resources. The letter included a brief description of the proposed project and included a location map. No response was received as a result of the letters.

On November 5, 2015, Foothill Associates attempted to contact each tribal representative by telephone. No responses have been received at the time of this writing.

Field Methods

On September 17, 2015, the Direct APE was inspected by Ric Windmiller, M.A., Registered Professional Archaeologist. Mr. Windmiller has more than 38 years' experience directing archaeological surveys and excavations. He meets the Secretary of the Interior's Professional Qualifications Standards in prehistoric and historical archaeology.

The archaeologist conducted a pedestrian survey of the south portion of the project area along transects approximately 15 meters apart. This is the vacant land onto which Walmart plans to expand. The land appeared ridged by heavy equipment around its perimeter at some time in the past. Grasses and annuals were dense across the vacant land. The archaeologist examined the

backdirt of burrowing animals, as well as digging surface scrapes to expose the ground. On the built portion of the project area, the archaeologist examined exposed soil and sediments in planted islands and peninsulas along transects varying between 2 and 5 meters apart. In this manner, exposed soils and sediments across the entire project area were examined for changes in color, texture, presence of historic and prehistoric artifacts and features, among other indicators of past use or occupation.

Peer Review

FCS peer-reviewed the Cultural Resources Assessment in 2016 and determined that its methods are in accordance with industry practice and its conclusions are appropriately based on the evidence in the record.

3.4.5 - Thresholds of Significance

According to Appendix G, Environmental Checklist, of the CEQA Guidelines, cultural resources impacts resulting from the implementation of the proposed project would be considered significant if the project would:

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

d) Disturb any human remains, including those interred outside of formal cemeteries?

Additionally, at the time of this writing, the Appendix G Checklist has been proposed to be amended to address tribal cultural resources. Although the Appendix G Checklist has not yet been formally amended, the following question will be addressed in the interests of informed decision-making:

e) Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code § 21074?

3.4.6 - Project Impacts and Mitigation Measures

This section discusses potential impacts associated with the development of the project and provides mitigation measures where appropriate.

Historic Resources

Impact CUL-1: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered historic resources.

Impact Analysis

The Cultural Resources Assessment indicated that there were no records of historic resources or evidence of such resources in the project area. Nonetheless, there is always the possibility that previously unknown historic resources exist below the ground surface within the project site. Therefore, implementation of standard cultural resource construction mitigation (Mitigation Measure CUL-1) would reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-1 If prehistoric or historic-period archaeological resources are encountered, all earth-disturbing construction activities within 100 feet of the find shall halt and the City of Chico Community Development Department shall be notified at (530) 879-6800. Prehistoric archaeological materials might include obsidian and chert flakedstone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; and stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-period materials might include stone, concrete, or adobe footings and walls; filled wells or privies; and deposits of metal, glass, and/or ceramic refuse. A Secretary of the Interior-qualified archaeologist shall inspect the findings within 72 hours of discovery. If it is determined that the project could damage a historical resource or a unique archaeological resource (as defined pursuant to the CEQA Guidelines) mitigation shall be implemented in accordance with PRC Section 21083.2 and Section 15126.4 of the CEQA Guidelines, with a preference for preservation in place. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. If avoidance is not feasible, a qualified archaeologist shall prepare and implement a detailed treatment plan in consultation with the City of Chico. Treatment of unique archaeological resources shall follow the applicable requirements of PRC Section 21083.2. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource to be impacted by the Project. The treatment plan shall include provisions for analysis of data in a regional context, reporting of results within a timely manner, curation of artifacts and data at an approved facility, and dissemination of reports to local and state repositories, libraries, and interested professionals.

Level of Significance After Mitigation

Less than significant impact.

Archaeological Resources

Impact CUL-2: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered archaeological resources.

Impact Analysis

The Cultural Resources Assessment indicated that there were no records of archaeological resources or evidence of such resources in the project area. Nonetheless, there is always the possibility that previously unknown archaeological resources exist below the ground surface within the project site. Therefore, implementation of standard cultural resource construction mitigation (Mitigation Measure CUL-1) would reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

Implement Mitigation Measure CUL-1.

Level of Significance After Mitigation

Less than significant impact.

Paleontological Resources

Impact CUL-3: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered paleontological resources.

Impact Analysis

The Cultural Resources Assessment indicated that the northwest corner of the project area may extend onto the Modesto Formation, which is a potentially fossiliferous unit that may be impacted by project-related excavations. However, this portion of the project area is built with the existing Walmart store and infrastructure, and, thus, the upper soil layers were previously disturbed by grading and earthwork activities. The Cultural Resources Assessment concluded that it is highly unlikely that any significant paleontological resources would be encountered. However, if significant paleontological resources are discovered, implementation of Mitigation Measure CUL-3 will reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-3 In the event a fossil is discovered during construction for the proposed project, excavations within 50 feet of the find shall be temporarily halted or delayed until the discovery is examined by a qualified paleontologist, in accordance with Society of Vertebrate Paleontology standards. The applicant shall include a standard inadvertent

discovery clause in every construction contract to inform contractors of this requirement. If the paleontological resources are found to be significant, they shall be avoided by project construction activities and recovered by a qualified paleontologist. Upon completion of the recovery, a paleontological assessment shall be conducted by a qualified paleontologist to determine if further monitoring for paleontological resources is required. The assessment shall include (1) the results of any geotechnical investigation prepared for the project area, (2) specific details of the construction plans for the project area, (3) background research, and (4) limited subsurface investigation within the project area. If a high potential to encounter paleontological resources is confirmed, subsurface construction shall be temporarily halted until a monitoring plan of further project subsurface construction is prepared in conjunction with this assessment. After project subsurface construction has ended, a report documenting monitoring, methods, findings, and further recommendations regarding paleontological resources shall be prepared and submitted to the City of Chico.

Level of Significance After Mitigation

Less than significant impact.

Burial Sites

Impact CUL-4: **Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered human burial sites.**

Impact Analysis

The Cultural Resources Assessment indicated that there were no records of Native American burial sites or evidence that human remains are known to exist within the project area. However, there is always the possibility that subsurface construction activities associated with the proposed project, such as trenching and grading, could potentially damage or destroy previously undiscovered human remains. Accordingly, this is a potentially significant impact. However, if human remains are discovered, implementation of Mitigation Measure CUL-4 would reduce impacts to a level of less than significant.

Level of Significance Before Mitigation

Potentially significant impact.

Mitigation Measures

MM CUL-4 In the event of discovery or recognition of any human remains during construction activities, such activities within 100 feet of the find shall cease until the Butte County Coroner has been contacted to determine that no investigation of the cause of death is required. The Native American Heritage Commission (NAHC) shall be contacted within 24 hours if it is determined that the remains are Native American. The NAHC will then identify the person or persons it believes to be the most likely descendant from the deceased Native American (PRC Section 5097.98), who in turn would make recommendations to the City of Chico for the appropriate means of treating the human remains and any associated funerary objects (CEQA Guidelines Section 15064.5(d)).

Level of Significance After Mitigation

Less than significant impact.

Tribal Cultural Resources

Impact CUL-5: Subsurface construction activities associated with the proposed project may damage or destroy previously undiscovered tribal cultural resources.

Impact Analysis

On July 1, 2015, an amendment to Public Resources Code 21074 took effect, which created a new category of cultural resources: "Tribal Cultural Resources." These resources are defined as:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - Included or determined to be eligible for inclusion in the California Register of Historical Resources.
  - Included in a local register of historical resources.
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant.

The project site is not listed on any national, state, or local registers of historic places (including those for tribal cultural resources). Because the project site supports a Walmart store and associated parking and landscaped areas that were developed in the early 1990s, it does not possess any attributes that would make it eligible for such a listing.

Additionally, the City of Chico sent a letter to the Mechoopda Indian Tribe of Chico Rancheria, dated September 24, 2015, notifying the tribe of the proposed project and advising that any tribal consultation request should be made within 30 days. To date, the City of Chico has not received a tribal consultation request from the Mechoopda Indian Tribe of Chico Rancheria and, therefore, there is no basis for the City to conclude that the project site supports tribal cultural resources. Impacts would be less than significant.

Level of Significance Before Mitigation

Less than significant impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less than significant impact.