## Air Quality & Greenhouse Gas Analysis Memorandum

| То:          | Chris Carroll, Associate Environmental Planner<br>District 3 North Region Local Assistance<br>California Department of Transportation                                                       |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CC:          | Tracy R. Bettencourt, Regulatory and Grants Manager<br>City of Chico Public Works – Engineering                                                                                             |
| From:        | Claire Bromund, Project Manager                                                                                                                                                             |
| Prepared By: | Laura Yoon<br>ICF Senior Manager, Air Quality and Climate Change                                                                                                                            |
| Date:        | February 7, 2020                                                                                                                                                                            |
| Subject:     | Air Quality and Greenhouse Gas Analysis for the Esplanade Corridor Safety<br>and Accessibility Improvement Project in the City of Chico, California<br>Federal Project No. ATPCML-5037(037) |

## Introduction

The City of Chico (City) propose various "complete streets" improvements along the Esplanade corridor within the City. This memorandum has been prepared to support the project's Categorical Exclusion under NEPA Assignment 23 United States Code 326. Potential air quality and greenhouse gas (GHG) emissions generated by implementation of the project are presented, and the analysis demonstrates that neither construction nor long-term operation of the project would result in air quality or GHG effects.

## **Project Description**

The Esplanade Corridor Safety and Accessibility Improvement Project (proposed project) includes various non-motorized "complete streets" improvements along the Esplanade corridor and on Oleander Avenue from 11th Avenue to Memorial Avenue in the City (see attached figures). The purpose of the project is to enhance mobility, connectivity, safety, and accessibility for roadway users of all ages and abilities, including automobiles, trucks, buses, and other large vehicles,

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bicyclists, and pedestrians, on the Esplanade from Memorial Way to 11th Avenue in Chico. The City's primary goal is to incorporate "complete streets" features and provide safer connectivity for all users between the downtown and destinations along the corridor.

The project is needed due to multi-modal operational deficiencies and lack of sufficient facilities for pedestrian and bicycle travel modes on the Esplanade, and the parallel roadway, Oleander Avenue. Currently, no facilities, signage, or pavement markings are provided for bicycle riders on the complex Esplanade boulevard or frontage roads. Car/bicycle collision rates are extremely high. Pedestrians have no pedestrian signal crossings indicators, compounded by a signal system which does not provide the minimum crossing time needed. Curb ramps are installed at marked crosswalk locations with sidewalks, but the ramp designs do not meet current Americans with Disabilities Act (ADA) design requirements. There are substantial gaps in the sidewalk on the east side frontage road of the Esplanade between 8th and 11th Avenues, and in various locations on Oleander Avenue, as well as East 10th Avenue.

The following "complete streets" elements are included in the proposed project. The attached project footprint map shows the improvements along the corridor. Refer to Attachment A for further description of each element.

- Pedestrian improvements
- ADA improvements
- Bicycle facility improvements
- Junior High School Area traffic flow improvements
- General vehicle guidance improvements
- 11<sup>th</sup> Avenue connection improvements
- Bidwell Mansion State Park Access Improvements
- Landscaping and lighting improvements

The proposed project is listed in the Butte County Council of Governments' (BCAG) 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) and 2019 Federal Transportation Improvement Program (FTIP) as part of the Congestion Mitigation and Air Quality Program (CMAQ). The 2016 RTP/SCS identifies the "complete streets" elements of the project as exempt from all transportation conformity requirements (regional and project-level) per 40 Code of Federal Regulations (CFR) 93.126, "Bicycle and Pedestrian Facilities", "Pavement Markings", and "Direction and Informational Signs", and 40 CFR 93.128, "Traffic Signal Synchronization Projects". The roundabout and new intersection signal are only exempt from regional transportation conformity per 40 CFR 93.127, "Intersection Signalization Projects" and "Intersection Channelization Projects", respectively. Air Quality and Greenhouse Gas Analysis for the Esplanade Corridor Safety and Accessibility Improvement Project in the City of Chico, California February 7, 2020 Page 3 of 10

## **Air Quality Analysis**

#### **Regional Transportation Conformity**

The project area within the City is categorized as nonattainment for the federal 8-hour ozone ambient air quality standard and maintenance for the fine particulate matter (PM2.5) ambient air quality standard (U.S. EPA 2019). Federally funded projects located in nonattainment and maintenance areas must demonstrate compliance with the applicable air quality plans through regional and project level conformity analyses. However, the Clean Air Act lists certain types of transportation projects that are exempt from regional conformity requirements (40 CFR 93.126, 40 CFR 93.127, 40 CFR 93.128) and may proceed toward implementation without an explicit regional conformity analysis. As noted above, all elements of the project are exempt from regional transportation conformity per 40 CFR 93.126 "Bicycle and Pedestrian Facilities", "Pavement Markings", and "Direction and Informational Signs"), 40 CFR 93.127 ("Intersection Signalization Projects"). Accordingly, an evaluation of the current RTP/SCS (i.e. regional conformity analysis) is required.

#### **Project-Level Transportation Conformity**

While the new single-lane roundabout at Memorial Way/Oleander Avenue near Chico Junior High School and new traffic signal at Oleander Avenue/1st Avenue are exempt from regional transportation conformity, the local effects of the improvements with respect to carbon monoxide (CO) and particulate matter (PM) emissions are subject to project-level transportation conformity requirements (per 40 CFR 93.127).

This project is in an area that is designated as attainment for CO. Therefore, no explicit project-level analysis or hot-spot modeling is necessary for CO.

This project is in an area that is designated a maintenance for PM2.5, thus a project-level analysis for PM2.5 is required under 40 CFR 93.109. The United States Environmental Protection Agency (USEPA) *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in PM2.5 and PM10 Nonattainment and Maintenance Areas* (Guidance) requires hot-spot modeling for a project of air quality concern (POAQC). The final rule in 40 CFR 93.123(b)(1) defines a POAQC as:

- New highway projects that have a significant number of diesel vehicles and expanded highway projects that have a significant increase in the number of diesel vehicles.
- Projects affecting intersections that are at level of service (LOS) D, E, or F with a significant number of diesel vehicles, or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project.
- New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location.
- Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location.

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• Projects in or affecting locations, areas, or categories of sites that are identified in the PM2.5 or PM10 applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

The project is not considered a POAQC for PM2.5 and does not require hot-spot modeling because it does not meet the requirements, as described below.

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles. The proposed project is not a new or expanded highway project. Average daily traffic (ADT) along the Esplanade in the project area is projected to be 23,924 under opening year (2022) conditions and 25,397 under design year (2030) conditions (West pers. comm.). Heavy-duty diesel volumes represent 2% of total ADT and would be 478 and 508 under opening (2022) and design (2030) year conditions, respectively (Gilpin pers. comm.). Implementation of the project would not change ADT or truck volumes, relative to the No Build Alternative.
- Projects affecting intersections that are at Level of Service (LOS) D, E, or F with a significant number of diesel vehicles or those that will change to LOS D, E, or F because of increased traffic volumes from a significant number of diesel vehicles related to the project. Tables 1 and 2 summarize the intersection operations analysis, including peak-hour volumes, delay, and level of service (LOS). All intersections except Esplanade and 1<sup>st</sup> Avenue, Esplanade and 7<sup>th</sup> Avenue, and Esplanade and 11<sup>th</sup> Avenue would operate at LOS C or better during peak-hours. While 1<sup>st</sup>, 7<sup>th</sup>, and 11<sup>th</sup> Avenues would operate at LOS D or E for one or more peak-hour, implementation of the project would not increase vehicle volumes or significantly affect traffic operations such that the LOS or vehicle delay would be degraded, relative to No Build conditions. Moreover, as noted above, heavy-duty diesel volumes represent only 2% of total traffic. Accordingly, the project would not negatively affect intersections that serve a significant number of diesel vehicles.
- New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location. The proposed project has no bus or rail terminal component, and it will not alter travel patterns to or from any existing bus or rail terminal.
- Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location. The proposed project will not expand any bus terminal, rail terminal, or related transfer point that will increase the number of diesel vehicles congregating at any single location.
- Projects in or affecting locations, areas, or categories of sites that are identified in the PM2.5- or PM10-applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation. The project site is not in or affecting an area or location identified in any PM2.5 implementation plan. The immediate project area is not considered to be a site of violation or possible violation.

The project underwent interagency consultation (IAC) through BCAG's interagency consultation process. USEPA and Caltrans issued concurrence that the project is not a POAQC on February 7, 2020 (see Attachment B).

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| Cross-street   | AM Peak Hour (Build and No Build) |                 |     | PM Peak Hour (Build and No Build) |                 |     |  |
|----------------|-----------------------------------|-----------------|-----|-----------------------------------|-----------------|-----|--|
| with Esplanade | Volume (veh/hr) <sup>a</sup>      | Delay (sec/veh) | LOS | Volume (veh/hr) <sup>a</sup>      | Delay (sec/veh) | LOS |  |
| Memorial Ave   | 1,815                             | 14.6            | В   | 2,166                             | 12.2            | В   |  |
| Lincoln Ave    | 1,956                             | 18.3            | В   | 2,411                             | 20.9            | С   |  |
| 1st Avenue     | 2,850                             | 46.7            | D   | 3,247                             | 35.9            | D   |  |
| 3rd Avenue     | 2,195                             | 27.9            | С   | 2,315                             | 20.1            | С   |  |
| 5th Avenue     | 2,352                             | 18.6            | В   | 2,535                             | 16.6            | В   |  |
| 7th Avenue     | 2,250                             | 31.0            | С   | 2,432                             | 18.5            | В   |  |
| 9th Avenue     | 2,250                             | 11.5            | В   | 2,433                             | 9.9             | А   |  |
| 11th Avenue    | 2,319                             | 39.4            | D   | 2,501                             | 15.1            | В   |  |

#### Table 1. Opening Year (2022) Intersection Operations Analysis

Sources: Alta Planning + Design 2019; Gilpin pers. comm., West pers. comm. Notes:

<sup>a</sup> Heavy-duty diesel vehicles represent 2% of the total traffic volume.

#### Table 2. Design Year (2030) Intersection Operations Analysis

| Cross-street   | AM Peak Hou                  | r (Build and No Bui | PM Peak Hour (Build and No Build) |                              |                 |     |
|----------------|------------------------------|---------------------|-----------------------------------|------------------------------|-----------------|-----|
| with Esplanade | Volume (veh/hr) <sup>a</sup> | Delay (sec/veh)     | LOS                               | Volume (veh/hr) <sup>a</sup> | Delay (sec/veh) | LOS |
| Memorial Ave   | 1,926                        | 18.5                | В                                 | 2,299                        | 12.6            | В   |
| Lincoln Ave    | 2,076                        | 18.2                | В                                 | 2,560                        | 26.5            | С   |
| 1st Avenue     | 3,027                        | 63.7                | Е                                 | 3,448                        | 38.4            | D   |
| 3rd Avenue     | 2,329                        | 31.4                | С                                 | 2,458                        | 20.6            | С   |
| 5th Avenue     | 2,497                        | 20.9                | С                                 | 2,690                        | 17.5            | В   |
| 7th Avenue     | 2,390                        | 43.3                | D                                 | 2,582                        | 24.9            | С   |
| 9th Avenue     | 2,389                        | 12.5                | В                                 | 2,581                        | 11.2            | В   |
| 11th Avenue    | 2,461                        | 52.9                | D                                 | 2,655                        | 15.9            | В   |

Sources: Alta Planning + Design 2019; Gilpin pers. comm., West pers. comm.

Notes:

<sup>a</sup> Heavy-duty diesel vehicles represent 2% of the total traffic volume.

#### Long-Term Effects (Operational Emissions)

The proposed project would not materially change traffic volume, fleet mix, speed, or any other factor that would cause an increase in emissions relative to the no build alternative. Therefore, proposed project would not result in an increase in operational emissions, and there would be no long-term air quality effects.

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## **Short-Term Effects**

#### **Construction Emissions**

Pedestrian, bicycle, and various streetscape improvements will require minor site preparation that will involve cut-and-fill activities, grading, removing or improving existing roadway surfaces, and paving roadway surfaces. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by earthmoving activities. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include ozone precursors—reactive organic gases (ROG) and nitrogen oxides (NOx), carbon monoxide (CO), coarse particulate matter (PM10), PM2.5, sulfur dioxide (SO<sub>2</sub>), and toxic air contaminants (TACs) such as diesel exhaust particulate matter. Construction activities are expected to increase traffic congestion in the area, resulting in increases in emissions from traffic during the delays. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Under the transportation conformity regulations (40 CFR 93.123(c)(5)), construction-related activities that cause temporary increases in emissions are not required in a hot-spot analysis. These temporary increases in emissions are those that occur only during the construction phase and last five years or less at any individual site. They typically fall into two main categories:

• *Fugitive Dust:* A major emission from construction due to ground disturbance. All air districts and the California Health and Safety Code (Sections 41700-41701) prohibit "visible emissions" exceeding three minutes in one hour – this applies not only to dust but also to engine exhaust. In general, this is interpreted as visible emissions crossing the right-of-way line. In addition, the Butte County Air Quality Management District (BCAQMD) recommends all construction projects implement best management practices to reduce construction-related fugitive dust (BCAQMD 2014).

Sources of fugitive dust include disturbed soils at the construction site and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site may deposit mud on local streets, which could be an additional source of airborne dust after it dries. Dust emissions may vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. Dust emissions depend on soil moisture, silt content of soil, wind speed, and the amount of equipment operating. Larger dust particles will settle near the source, while fine particles will be dispersed over greater distances from the construction site.

• *Construction equipment emissions*: Diesel exhaust particulate matter is a California-identified toxic air contaminant, and localized issues may exist if diesel-powered construction equipment is operated near sensitive receptors.

Construction emissions were estimated using the latest Sacramento Metropolitan Air Quality Management District's Road Construction Emissions Model (RCEM) (Version 9.0.0). While the model was developed for Sacramento conditions in terms of fleet emission factors, silt loading, and other model assumptions, it is considered adequate for estimating road construction emissions by the BCAQMD (in its CEQA guidance) and is used for that purpose in this project analysis. Air Quality and Greenhouse Gas Analysis for the Esplanade Corridor Safety and Accessibility Improvement Project in the City of Chico, California February 7, 2020 Page 7 of 10

Construction emissions were estimated based on the anticipated duration and required paving and earthmoving quantities (Erdahl pers. comm.). Construction would occur in 2022 and require approximately 180 working days (9 months). Because the RCEM does not have a "complete streets" project category, the "roadway widening" category was used to inform the equipment and vehicle inventory for emissions estimating purposes. While the proposed project includes some roadway improvements (e.g., pedestrian crossing islands), these are minor compared to widening activities, and as such, the emissions estimates presented in Table 2 are likely conservative.

| Table 2 | <b>Construction-Period Criteria Pollutan</b> | t Emissions Estimates | (pounds per day, | unless otherwise |
|---------|----------------------------------------------|-----------------------|------------------|------------------|
| stated) |                                              |                       |                  |                  |

|                                |     |     |    | J       | PM10 |       | I       | PM2.5 |       | _               |
|--------------------------------|-----|-----|----|---------|------|-------|---------|-------|-------|-----------------|
| Phase                          | ROG | NOx | CO | Exhaust | Dust | Total | Exhaust | Dust  | Total | SO <sub>2</sub> |
| Site Preparation               | 1   | 10  | 10 | <1      | 40   | 40    | <1      | 8     | 9     | <1              |
| Grading/Excavation             | 5   | 54  | 45 | 2       | 40   | 42    | 2       | 8     | 10    | <1              |
| Drainage/Utilities/Landscaping | 3   | 29  | 29 | 1       | 40   | 41    | 1       | 8     | 10    | <1              |
| Paving Activities              | 1   | 13  | 17 | 1       | 0    | 1     | 1       | 0     | 1     | <1              |
| Maximum daily                  | 5   | 54  | 45 | 2       | 40   | 42    | 2       | 8     | 10    | <1              |
| Project Total (2022)           | <1  | 3   | 3  | <1      | 3    | 3     | <1      | 1     | 1     | <1              |

Note: Emissions estimated using the Sacramento Metropolitan Air Quality Management District RCEM, version 9.0.0. See Attachment C.

A traffic management plan would be developed and implemented in accordance with the 2018 Caltrans Standard Specifications and must comply with the California Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control." In addition, implementation of the following measures, some of which may also be required for other purposes such as storm water pollution control, will reduce air quality emissions resulting from construction activities. Please note that although these measures are anticipated to reduce construction-related emissions, these reductions cannot be quantified at this time.

- The construction contractor must comply with the Caltrans' Standard Specifications in Sections 14-9 and 7-1.02(C) (2015). Section 14-9-02 specifically requires compliance by the contractor with all applicable laws and regulations related to air quality, including air pollution control district and air quality management district regulations and local ordinances. Section 7-1.02(C) ensures that construction activities adhere to the most recent emissions reduction regulations mandated by the California Air Resources Board.
- The construction contractor must comply with Title 13 of the California Code of Regulations, which includes idling restrictions of construction vehicles and equipment to no more than 5 minutes.
- Water or a dust palliative will be applied to the site and equipment as often as necessary to control fugitive dust emissions
- Soil binder will be spread on any unpaved roads used for construction purposes, and on all project construction parking areas.

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- Trucks will be washed as they leave the right-of-way as necessary to control fugitive dust emissions.
- Construction equipment and vehicles will be properly tuned and maintained. All construction equipment will use low sulfur fuel as required by the California Code of Regulations Title 17, Section 93114.
- A dust control plan will be developed documenting sprinkling, temporary paving, speed limits, and timely re-vegetation of disturbed slopes as needed to minimize construction impacts to existing communities.
- Equipment and materials storage sites will be located as far away from residential and park uses as practicable. Construction areas will be kept clean and orderly.
- Environmentally sensitive areas will be established near sensitive air receptors. Within these areas, construction activities involving the extended idling of diesel equipment or vehicles will be prohibited, to the extent feasible.
- Track-out reduction measures, such as gravel pads at project access points to minimize dust and mud deposits on roads affected by construction traffic, will be used.
- All transported loads of soils and wet materials will be covered before transport, or adequate freeboard (space from the top of the material to the top of the truck) will be provided to minimize emission of dust during transportation.
- Dust and mud that are deposited on paved, public roads due to construction activity and traffic will be promptly and regularly removed to reduce particulate matter emissions.
- To the extent feasible, construction traffic will be scheduled and routed to reduce congestion and related air quality impacts caused by idling vehicles along local roads during peak travel times.
- Mulch will be installed, or vegetation planted as soon as practical after grading to reduce windblown particulate matter in the area.

#### Asbestos

According to maps prepared by the U.S. Geological Survey and California Geological Survey and BCAQMD, the project site does not have any reported historic asbestos mines, historic asbestos prospects, asbestos-bearing talc deposits, fibrous amphiboles, or ultramafic rock outcrops (U.S. Geological Survey and California Geological Survey 2011; BCAQMD 2018). The proposed project does not involve the demolition or modification of structures or buildings that will release asbestos during construction or operation. In addition, compliance with the California Air Resources Boards' Asbestos Airborne Toxic Control Measures for Construction, Grading, Quarrying, and Surface Mining Operations, as required by BCAQMD, will limit emissions of asbestos, if uncovered during construction.

#### Lead

Lead is normally not an air quality issue for transportation projects unless the project involves disturbance of soils containing high levels of aerially deposited lead or painting or modification of

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structures with lead-based coatings. The proposed project is not adjacent to any major highways or freeways. However, portions of the project corridor have been subject to vehicular traffic for over 80 years, during which time lead may have been aerially deposited. Excavated soil hauled off-site for disposal (if any) will be tested for the accumulation of lead. It is unknown whether lead-based paint was used previously for striping along Esplanade Avenue and Oleander Avenue. If encountered, disturbance of lead paint or soil must meet U.S. Environmental Protection Agency and air district rules, pursuant to Caltrans Standard Specifications 14-9.02.

## **Greenhouse Gas Analysis**

#### Long-Term Effects (Operational Emissions)

The purpose of the project is to provide complete streets improvements and facilitate bicycle and pedestrian transit. The project would not increase capacity and would not change travel demands or traffic patterns when compared to the no-build alternative. Therefore, an increase in operational GHG is not anticipated, and there would be no long-term GHG effect.

## **Short-Term Effects (Construction Emissions)**

Construction GHG emissions will result from material processing, onsite construction equipment, and traffic delays due to construction. These emissions will be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as longer pavement lives, improved traffic management plans, and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

The RCEM (9.0.0) was used to estimate carbon dioxide ( $CO_2$ ), methane ( $CH_4$ ), and nitrous oxide ( $N_2O$ ) emissions from construction activities. Table 2 shows construction-period GHG emissions, which will be approximately 404 metric tons of carbon dioxide equivalent ( $CO_2e$ ). All emissions would be generated in 2022.

| Phase                          | CO <sub>2</sub> | CH <sub>4</sub> | N <sub>2</sub> O | CO <sub>2</sub> e |
|--------------------------------|-----------------|-----------------|------------------|-------------------|
| Site Preparation               | 20              | <1              | <1               | 21                |
| Grading/Excavation             | 399             | <1              | <1               | 404               |
| Drainage/Utilities/Landscaping | 153             | <1              | <1               | 154               |
| Paving Activities              | 39              | <1              | <1               | 40                |
| Project Total (2022)           | 399             | <1              | <1               | 404               |

#### Table 2. Construction-Period GHG Emissions Estimates (metric tons)

Note: Emissions estimated using the Sacramento Metropolitan Air Quality Management District RCEM, version 9.0.0. See Attachment C.

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A traffic management plan would be developed and implemented in accordance with the 2018 Caltrans Standard Specifications and must comply with the California Manual on Uniform Traffic Control Devices, Part 6, "Temporary Traffic Control." In addition, implementation of the construction measures described above for air quality will reduce GHG emissions resulting from construction activities.

## **References Cited**

- Alta Planning + Design. 2019. Updated Traffic Analysis of Esplanade Corridor with Class 1 Path. Memorandum to the City of Chico. September 10.
- Butte County Air Quality Management District. 2014. CEQA Air Quality Handbook. October 23.
- ———. 2018. Naturally Occurring Asbestos Areas. Available: http://bcaqmd.org/wpcontent/uploads/Naturally\_Occuring\_Asbestos\_Map\_Butte\_8.5x11.pdf. Accessed: June 14, 2019.

Erdahl, Jessica. City of Chico. June 14, 2019. Email message to ICF.

- Gilpin, Joe. Vice-President. Alta Planning + Design, Inc. September 26 and 27, 2019—email messages to ICF regarding Esplanade Traffic Data for Air Quality Analysis.
- U.S. Environmental Protection Agency. 2019. Nonattainment Areas for Criteria Pollutants. Available: Last Revised: May 31, 2019. https://www.epa.gov/green-book. Accessed: June 14, 2019.
- U.S. Geological Survey and California Geological Survey. 2011. Reported Historic Asbestos Mines, Historic Asbestos Prospects, and Other Natural Occurrences of Asbestos in California – Map. Available: http://pubs.usgs.gov/of/2011/1188/pdf/Plate.pdf. Accessed: June 14, 2019.
- West, Wyatt. City of Chico, CA. October 3, 2019—email message to ICF regarding Esplanade Traffic Data for Air Quality Analysis.

The proposed non-motorized "complete streets" improvements along the Esplanade corridor and on Oleander Avenue are listed in more detail in the sections below and are shown on the project footprint map.

#### **Pedestrian Improvements**

- Install new pedestrian countdown crossing signal heads and pedestrian push button activation at all existing traffic signals on the Esplanade with sufficient crossing timing that meets Federal guidelines.
- Add vehicle detection as necessary replacing timed signalization with an on-demand detection system.
- Provide adequate pedestrian crossing refuge islands at unsignalized intersections on the Esplanade.
- Consistently mark pedestrian crosswalks at all crossing locations.
- Prepare enhanced signal timing plan to respond to vehicles, bikes and pedestrian needs.
- Maintain signal progression on the Esplanade during off-peak hours

#### **ADA Improvements**

- Improve connection to the 11th Avenue Airport Class I multi-use path with adequate walkway and ramps, on the southwest, southeast and northeast corner of the intersection.
- Install ADA accessible curb ramps at all crosswalk locations.
- Install missing sidewalks at identified gap closure locations (see project footprint map)

## **Bicycle Facility Improvements**

- Install paved Class I multi-use bicycle/pedestrian path on old rail right-of-way (east side) with appropriate safety crossing measures.
- Discourage wrong-way riders on the west side frontage road by adding a shared space pavement design to slow vehicle and bicycle traffic through conflict zones.
- Add marked bicycle route on Oleander Avenue which favors minimal stopping except at 1st Avenue and 5th Avenue.
- Install traffic signals at West Sacramento Avenue/Esplanade and Oleander Avenue/1st Avenue with bike crossing emphasis.

## **Junior High School Area Improvements**

• Change intersection design at Memorial Way/Oleander Avenue (near Chico Junior High School) to a single-lane roundabout.

#### **General Vehicle Guidance Improvements**

- Provide clear and consistent pavement markings at frontage road intersection areas.
- Create the shared space area at crossings of the east-west streets and frontage roads.
- Install traffic signal indications guiding cross traffic to stop "outside" of the frontage road where appropriate.

#### **11th Avenue Connection Improvements**

• Enhance connections between the 11th Avenue and the Airport Class I Multi-use path.

## **Other Amenities**

- Install pedestrian-scale lighting in the form of full cutoff, energy-efficient LED fixtures restricted to illuminate pathways in order to minimize light "spill over" to adjacent properties.
- Install replacement landscaping within the project footprint.

## **Typical Signalized Intersection**

- Provide a Class I multi-use path in the eastern median.
- Provide textured "mixing zone" at the intersection of southbound frontage and east-west cross streets.
- Eliminate northbound right-turn pocket, where applicable.
- Provide pedestrian refuge islands on medians.
- Update signal timing with adequate crossing time in the east-west directions.
- Refresh striping and add crosswalks, where applicable.

## **Typical Unsignalized Intersection**

- Provide a Class I multi-use path in the eastern median.
- Provide textured "mixing zone" at the intersection of southbound frontage and east-west cross streets.
- Provide pedestrian refuge islands on medians.
- Refresh striping and add crosswalks, where applicable.





















# Attachment B IAC Consultation

| From:    | Lee, Jason@DOT                                                                                                     |
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| Cc:      | Bromund, Claire; Yoon, Laura; Tracy Bettencourt                                                                    |
| Subject: | RE: Section 6004 CE - Project Level PM 2.5 Conformity Assessment for the City of Chico Esplanade Corridor          |
|          | Safety and Accessibility Improvement Project (CTIPS ID# 202-000-0194)                                              |
| Date:    | Friday, February 7, 2020 10:09:51 AM                                                                               |

#### All,

Caltrans concurs that this is not a project of air quality concern.

Thanks a lot,

Jason Lee, PE

Senior Engineer-Air Quality/Noise Office of Hazardous Waste, Air, Noise and Paleontology Division of Environmental Analysis California Department of Transportation Phone: 916-653-6297

From: OConnor, Karina < OConnor.Karina@epa.gov>

Sent: Friday, February 7, 2020 9:48 AM

To: Brian Lasagna <BLasagna@bcag.org>; Anderson, Cari@ARB <Cari.Anderson@arb.ca.gov>; Carson, Scott (FHWA) <Scott.Carson@dot.gov>; Carroll, Chris S@DOT <chris.carroll@dot.ca.gov>; Chris Devine <CDevine@bcag.org>; Fong, Alexander Y@DOT <alexander.fong@dot.ca.gov>; Ivan Garcia <IGarcia@bcag.org>; Jason Mandly <jmandly@bcaqmd.org>; Buss, Jeffrey <Buss.Jeffrey@epa.gov>; jerome.wiggins@fta.dot.gov; Elder, Jim M@DOT <jim.m.elder@dot.ca.gov>; Joseph.Vaughn@dot.gov; Lee, Jason@DOT <jason.lee@dot.ca.gov>; Lo, Doris <Lo.Doris@epa.gov>; marilee.mortenson@dot.ca.gov>; Lakin, Matt <Lakin.Matthew@epa.gov>; Kalandiyur, Nesamani@ARB <nesamani.kalandiyur@arb.ca.gov>; Kabirinassab, Nima@DOT <Nima.Kabirinassab@dot.ca.gov>; Tavitas, Rodney A@DOT <rodney.tavitas@dot.ca.gov>; Chowdhury, Shaila K@DOT <shaila.chowdhury@dot.ca.gov>; Culbertson, Shannon@DOT <shannon.culbertson@dot.ca.gov>; Ungvarsky, John <Ungvarsky.John@epa.gov> Cc: Bromund, Claire <Claire.Bromund@icf.com>; Yoon, Laura <Laura.Yoon@icf.com>; Tracy Bettencourt <tracy.bettencourt@Chicoca.gov>

**Subject:** RE: Section 6004 CE - Project Level PM 2.5 Conformity Assessment for the City of Chico Esplanade Corridor Safety and Accessibility Improvement Project (CTIPS ID# 202-000-0194)

**EXTERNAL EMAIL.** Links/attachments may not be safe.

EPA concurs that this is not a project of air quality concern.

Thanks, Karina

Karina OConnor

Air Planning Office US EPA Region 9 (AIR-2) 75 Hawthorne St. San Francisco, CA 94105 (775) 434-8176 oconnor.karina@epa.gov

From: Brian Lasagna <<u>BLasagna@bcag.org</u>>

#### Sent: Friday, February 7, 2020 8:47 AM

To: Brian Lasagna <<u>BLasagna@bcag.org</u>>; Cari Anderson <<u>Cari.Anderson@arb.ca.gov</u>>; Carson, Scott (FHWA) <<u>Scott.Carson@dot.gov</u>>; Chris Carroll <<u>chris\_carroll@dot.ca.gov</u>>; Chris Devine <<u>CDevine@bcag.org</u>>; Fong, Alexander Y@DOT <<u>alexander.fong@dot.ca.gov</u>>; Ivan Garcia <<u>IGarcia@bcag.org</u>>; Jason Mandly <<u>jmandly@bcaqmd.org</u>>; Buss, Jeffrey <<u>Buss.Jeffrey@epa.gov</u>>; jerome.wiggins@fta.dot.gov; jim.m.elder@dot.ca.gov; Joseph.Vaughn@dot.gov; OConnor, Karina <<u>OConnor.Karina@epa.gov</u>>; Lee, Jason@DOT <<u>jason.lee@dot.ca.gov</u>>; Lo, Doris <<u>Lo.Doris@epa.gov</u>>; marilee.mortenson@dot.ca.gov; Lakin, Matt <<u>Lakin.Matthew@epa.gov</u>>; nesamani.kalandiyur@arb.ca.gov; Nima Kabirinassab <<u>nima.kabirinassab@dot.ca.gov</u>>; rodney.tavitas@dot.ca.gov; shaila.chowdhury@dot.ca.gov; Shannon Culbertson <<u>shannon\_culbertson@dot.ca.gov</u>>; Ungvarsky, John <<u>Ungvarsky.John@epa.gov</u>>; Tracy Bettencourt <<u>tracy.bettencourt@Chicoca.gov</u>>

**Subject:** Section 6004 CE - Project Level PM 2.5 Conformity Assessment for the City of Chico Esplanade Corridor Safety and Accessibility Improvement Project (CTIPS ID# 202-000-0194)

#### E - MEMORANDUM

DATE: February 7, 2020

TO: BCAG Interagency Consultation Review (ICR) Group

FROM: Brian Lasagna, BCAG Regional Analyst

#### SUBJECT: ICR Consultation on Project Level PM2.5 Hot-Spot Conformity Assessment for the City of Chico's ATP, CMAQ, and locally funded Esplanade Corridor Safety and Accessibility Improvement Project (CTIPS ID# 202-000-0194) – NEPA Section 6004 Categorical Exclusion

The purpose of this memorandum is to request an Interagency Consultation Review (ICR) for Project Level PM2.5 Conformity Assessment for the City of Chico's ATP, CMAQ, and locally funded Esplanade Corridor Safety and Accessibility Improvement Project (CTIPS ID# 202-000-0194) – NEPA project type Section 6004 Categorical Exclusion.

The project sponsor (City of Chico) is requesting that <u>Caltrans and EPA</u> concur with its recommendation that the project is NOT a "Project of Air Quality Concern" by Friday, February 21, 2020.

Attached for the ICR's review is the project sponsor's memorandum and completed project summary form. Please respond with any comments on the assessment to all ICR members including the project sponsors (included in the CC section of the email).

BCAG staff is requesting that **ICR members respond with any comments prior to the established two-week review deadline of Friday, February 21, 2020.** If a significant number of responses are received or any member of the ICR requests a formal conference call to discuss, BCAG staff will notify the ICR and proceed to schedule a meeting.

If you have any questions regarding the review procedures, please feel free to contact me.

Again, please respond with any comments on the assessment to all ICR members including the project sponsors (included in the CC section of the email).

Thank you,

Brian Lasagna Regional Analyst Butte County Association of Governments 326 Huss Dr, Suite 150 Chico, CA 95928 Ph 530.809.4616 Fax 530.879.2444 Email <u>blasagna@bcag.org</u>

## Attachment C Roadway Construction Emissions Model Inputs

| Input                               | Assumption                 |
|-------------------------------------|----------------------------|
| Construction Start Year             | 2022                       |
| Project Type                        | Road Widening <sup>a</sup> |
| Project Construction Time           | 9 months                   |
| Working days per month              | 22 days                    |
| Predominant Soil/Site Type          | Weather Rock-Earth         |
| Project Length                      | 1.25 miles                 |
| Total Project Area                  | 48 acres                   |
| Maximum Area Disturbed/Day          | 4 acres                    |
| Water Trucks Used?                  | Yes                        |
| Soil Imported/Exported by Phase     |                            |
| Site Preparation                    | 2.8 cubic yards per day    |
| Grading/Excavation                  | 8.3 cubic yards per day    |
| Asphalt Imported/ Exported by Phase |                            |
| Grading/Excavation                  | 1.7 cubic yards per day    |
| Paving Activities                   | 3.3 cubic yards per day    |
| Average Truck Capacity              | 20 cubic yards             |

#### Table C-1. General Project Inputs

Source: Erdahl pers. comm.

<sup>a</sup> Because the RCEM does not have a "complete streets" project category, the "roadway widening" category was used to inform the equipment and vehicle inventory for emissions estimating purposes. While the proposed project includes some roadway improvements (e.g., pedestrian crossing islands), these are minor compared to widening activities, and as such, the resulting RCEM defaults generated for vehicle trips (Table C-2) and off-road equipment (Table C-3) are likely conservative.

#### Table C-2. RCEM Defaults for Vehicle Trips

| Phase and Trip Type            | Trips per Day | Miles per Day |
|--------------------------------|---------------|---------------|
| Soil Hauling                   |               |               |
| Site Preparation               | 1             | 30            |
| Grading/Excavation             | 1             | 30            |
| Asphalt Hauling                |               |               |
| Grading/Excavation             | 1             | 30            |
| Paving Activities              | 1             | 30            |
| Worker Commute                 |               |               |
| Site Preparation               | 16            | 320           |
| Grading/Excavation             | 46            | 920           |
| Drainage/Utilities/Landscaping | 34            | 680           |
| Paving Activities              | 26            | 520           |
| Water Trucks                   |               |               |
| Site Preparation               | 5             | 40            |
| Grading/Excavation             | 5             | 40            |
| Drainage/Utilities/Landscaping | 5             | 40            |
| Paving Activities              | 5             | 40            |

#### Table C-3. RCEM Defaults for Off-Road Equipment

| Phase and Trip Type            | Equipment              | Number per Day | Hours per Day |
|--------------------------------|------------------------|----------------|---------------|
| Site Preparation               | Crawler Tractor        | 1              | 8             |
|                                | Excavator              | 2              | 8             |
| Grading/Excavation             | Crawler Tractor        | 1              | 8             |
|                                | Excavator              | 3              | 8             |
|                                | Grader                 | 2              | 8             |
|                                | Roller                 | 2              | 8             |
|                                | Rubber Tired Loader    | 1              | 8             |
|                                | Scraper                | 2              | 8             |
|                                | Tractor/Loader/Backhoe | 4              | 8             |
| Drainage/Utilities/Landscaping | Air Compressor         | 1              | 8             |
|                                | Generator Set          | 1              | 8             |
|                                | Grader                 | 1              | 8             |
|                                | Plate Compactor        | 1              | 8             |
|                                | Pump                   | 1              | 8             |
|                                | Rough Terrain Forklift | 1              | 8             |
|                                | Scraper                | 1              | 8             |
|                                | Tractor/Loader/Backhoe | 3              | 8             |
| Paving Activities              | Paver                  | 1              | 8             |
|                                | Paver Equipment        | 1              | 8             |
|                                | Roller                 | 2              | 8             |
|                                | Tractor/Loader/Backhoe | 3              | 8             |