

Memorandum

To: Tamara Camper
Environmental Coordinator
District 01-Environmental Management E1 Branch

Date: January 20, 2016

From: DEPARTMENT OF TRANSPORTATION
DISTRICT 3/NORTH REGION
Office of Environmental Engineering South
Marysville

File: 01-DN-101
PM: 8.2/8.7
EA: 01-0B090
Bridge Replacement

Subject: Noise and Air Quality Analysis

Air Quality

Conformity

Del Norte County is in attainment or is unclassified for all current National Ambient Air Quality Standards (NAAQS). Therefore, conformity requirements do not apply.

Project Level Analysis

This is a bridge replacement project that will not change traffic composition, traffic speed or traffic volume so it will have a neutral impact on air quality in the project area. Further analysis is not required.

Construction Impacts

The proposed project may result in the generation of short-term construction-related air emissions, including fugitive dust and exhaust emissions from construction equipment. Fugitive dust, sometimes referred to as windblown dust or PM10, would be the primary short-term construction impact, which may be generated during excavation, grading and hauling activities. However, both fugitive dust and construction equipment exhaust emissions would be temporary and transitory in nature. 40 CFR §93.123(c) (5) states that: "CO, PM10, and PM2.5 hot-spot analyses are not required to consider construction-related activities which cause temporary increases in emissions. Each site which is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those which occur only during the construction phase and last five years or less at any individual site." Because construction of the project is expected to last less than five years, construction-related emissions associated with this project are not considered in the project-level or regional conformity analysis.

Caltrans Standard Specifications should effectively reduce and control emission impacts during construction under the provisions of Section 7-1.02C "Emission Reduction" and Section 14-9.03 "Dust Control". Section 14-9.02 "Air Pollution Control" requires the contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district.

Asbestos

Refer to hazardous waste section for information on structural or naturally occurring asbestos.

Noise

Title 23, Part 772 of the Code of Federal Regulations (23CFR772) provides procedures for preparing operational and construction noise studies and evaluating noise abatement considered for Federal and Federal-aid highway projects. Under 23CFR772.7, projects are categorized as Type I, Type II, or Type III projects.

The Federal Highway Administration (FHWA) defines a Type I project as a proposed Federal or Federal-aid project for the construction of a highway on a new location; the physical alteration of an existing highway where there is either substantial horizontal or substantial vertical alteration; the addition of through lane; the addition of auxiliary lanes, except when the auxiliary lane is a turn lane; the addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange; restriping existing pavement for the purpose of adding through-traffic lane or an auxiliary lane; or the addition of a new or substantial alteration of a weight station, rest stop, ride-share lot, or toll plaza. A Type II project involves construction of noise abatement on an existing highway with no changes to highway capacity or alignment. A Type III project is a project that does not meet the classifications of a Type I or Type II project. Type III projects do not require a noise analysis.

23CFR772 defines substantial vertical alignment alteration as a project that removes shielding thereby exposing the line-of-sight between the receptor and the traffic noise source. This is done by altering either the vertical alignment of the highway or the topography between the highway traffic noise source and the receptor. 23CFR772 defines substantial horizontal alignment alteration as a project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition.

Future Noise Impacts

This project meets the criteria for a Type III project as defined in 23CFR772; therefore, a noise study report is not required.

Traffic volumes, composition and speeds would remain the same in the build and no build condition. This project will not result in adverse noise impacts.

Construction Noise

Noise generated by construction activities would be a function of the noise levels generated by individual pieces of construction equipment, the type and amount of equipment operating at any given time, the timing and duration of construction activities, and the proximity of nearby sensitive receptors.

This project will include demolition, earthwork, excavation, grading, paving, concrete work, and pile driving. Construction noise would primarily result from the operation of heavy construction equipment and arrival and departure of heavy-duty trucks. Construction noise levels will vary on a day-to-day basis during each phase of construction depending on the specific task being completed.

FHWA's Roadway Construction Noise Model (RCNM) was used to calculate the maximum and average noise levels anticipated during each phase of construction. The construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction

of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power. Vehicles and equipment anticipated during each phase of construction were input into RCNM to calculate noise levels at 50 feet. Table 1 presents the construction noise levels calculated for each major phase of the project. Noise generated by construction equipment drops off at a rate of 6 dB per doubling of distance.

Table 1-Construction Noise Levels

Construction Phase	Maximum Noise Level (L_{max} , dBA)	Hourly Average Noise Level ($L_{eq(h)}$, dBA)
	50 feet	50 feet
Demolition	89	84
Earthwork	85	84
Paving	85	84
Structures (Pile Driving)	101	94

This project may require the use of pile drivers. Pile driving generates noise levels ranging between 95 and 101 dBA L_{max} at 50 feet. The closest noise sensitive land uses are approximately 500 feet from the project area. At this distance, maximum noise levels during pile driving would be 81 dBA L_{max} or less.

Construction activities are temporary in nature, typically occurring during normal working hours. Construction noise is regulated by Caltrans Standard Specifications Section 14-8.02, "Noise Control". These requirements state: "Do not exceed 86 dBA L_{max} at 50 feet from the job site activities from 9 p.m. to 6 a.m. Equip an internal combustion engine with the manufacturer-recommended muffler. Do not operate an internal combustion engine on the job site without the appropriate muffler."

In addition to the Standard Specifications, construction noise impacts can be minimized through the following measures:

1. Limit operation of pile driver, jackhammer, concrete saw, pneumatic tools and demolition equipment to daytime hours.
2. Unnecessary idling of internal combustion engines should be prohibited.
3. Stationary construction equipment, such as compressors and generators, should be shielded and located as far away from residents as practical.

Construction impacts are temporary in nature and sensitive receptors would not be exposed to construction noise for any longer than necessary to complete the project. With the implementation of Caltrans standard construction practices, no substantial noise impacts from construction are anticipated.



Ryan Pommerenck
Air Quality/ Noise Unit
Office of Environmental Engineering South

Transportation Air Quality Conformity Findings Checklist

Project Name:	01-DN-101 Bridge Replacement		
Dist-Co-Rte-PM:	03-COI-20-PM 31.8/32.8	EA:	01-0B090
Federal-Aid No.:	[REDACTED]		
Document Type:	<input type="checkbox"/> 23 USC 326 CE	<input type="checkbox"/> 23 USC 327 CE	<input checked="" type="checkbox"/> EA <input type="checkbox"/> EIS

Step 1. Is the project located in a nonattainment or maintenance area for ozone, nitrogen dioxide, carbon monoxide (CO), PM2.5, or PM10 per EPA's [Green Book](#) listing of non-attainment areas?

If no, go to Step 17. **Transportation conformity does not apply to the project.**

If yes, go to Step 2.

Step 2. Is the project exempt from conformity per [40 CFR 93.126](#) or [40 CFR 93.128](#)?

If yes, go to Step 17. **The project is exempt from all project-level conformity requirements (40 CFR 93.126 or 128) (check one box below and identify the project type, if applicable).**

40 CFR 93.126 Project type: [REDACTED]

40 CFR 93.128

If no, go to Step 3.

Step 3. Is the project exempt from regional conformity per [40 CFR 93.127](#)?

If yes, go to Step 8. **The project is exempt from regional conformity requirements (40 CFR 93.127) (identify the project type).** Project type: [REDACTED]

If no, go to Step 4.

Step 4. Is the project located in a region with a currently conforming RTP and TIP?

If yes, **the project is included in a currently conforming RTP and TIP per 40 CFR 93.115. The project's design and scope have not changed significantly from what was assumed in RTP conformity analysis (40 CFR 93.115[b])** Go to Step 8.

If no and the project is located in an isolated rural area, go to Step 5.

If no and the project is not located in an isolated rural area, STOP and do not proceed until a conforming RTP and TIP are adopted.

Step 5. For isolated rural areas, is the project regionally significant per 40 CFR 93.101, based on review by Interagency Consultation?

If yes, go to Step 6.

If no, go to Step 8. **The project, located in an isolated rural area, is not regionally significant and does not require a regional emissions analysis (40 CFR 93.101 and 93.109[I]).**

Step 6. Is the project included in another regional conformity analysis that meets the isolated rural area analysis requirements per 40 CFR 93.109, including Interagency Consultation and public involvement?

If yes, go to Step 8. **The project, located in an isolated rural area, has met its regional analysis requirements through inclusion in a previously-approved regional conformity analysis that meets current requirements (40 CFR 93.109[I]).**

If no, go to Step 7.

Step 7. The project, located in an isolated rural area, requires a separate regional emissions analysis.

Regional emissions analysis for regionally significant project, located in an isolated rural area, is complete. Regional conformity analysis was conducted that includes the project and reasonably foreseeable regionally significant projects for at least 20 years. Interagency Consultation and public participation were conducted. Based on the analysis, the interim or emission budget conformity tests applicable to the area are met (40 CFR 93.109[I] and 95.105).¹ Go to Step 8.

Step 8. Is the project located in a CO nonattainment or maintenance area?

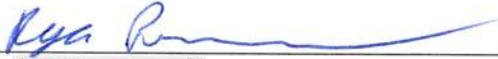
If no, go to Step 9. **CO conformity analysis is not required.**

If yes, **hot-spot analysis requirements for CO per the [CO Protocol](#) (or per EPA's modeling guidance, CAL3QHCR can be used with EMFAC emission factors²) have been met. Project will not cause or contribute to a new localized CO violation (40 CFR 93.116 and 93.123)³.** Go to Step 9.

¹ The analysis must support this conclusion before going to the next step.

² Use of the CO Protocol is strongly recommended due to its use of screening methods to minimize the need for modeling. When modeling is needed, the Protocol simplifies the modeling approach. Use of CAL3QHCR must follow U.S. EPA's latest CO hot spot guidance, using EMFAC instead of MOVES; see: <http://www.epa.gov/otaq/stateresources/transconf/projectlevel-hotspot.htm#co-hotspot>.

³ As of October 1, 2007, there are no CO nonattainment areas in California. Therefore, the requirements to not worsen existing violations and to reduce/eliminate existing violations do not apply.

<p>Step 9. Is the project located in a PM10 and/or a PM2.5 nonattainment or maintenance area?</p> <input type="checkbox"/> If no, go to Step 13. PM2.5/PM10 conformity analysis is not required.
<input type="checkbox"/> If yes, go to Step 10.
<p>Step 10. Is the project considered to be a Project of Air Quality Concern (POAQC), as described in EPA's Transportation Conformity Guidance for PM 10 and PM 2.5?</p> <input type="checkbox"/> If no, the project is not a project of concern for PM10 and/or PM2.5 hot-spot analysis based on 40 CFR 93.116 and 93.123 and EPA's Hot-Spot Analysis Guidance. Interagency Consultation concurred with this determination on _____. Go to Step 12.
<input type="checkbox"/> If yes, go to Step 11.
<p>Step 11. The project is a POAQC.</p> <input type="checkbox"/> The project is a project of concern for PM10 and/or PM2.5 hot-spot analysis based on 40 CFR 93.116 and 93.123, and EPA's Hot-Spot Guidance. Interagency Consultation concurred with this determination on _____. Detailed PM hot-spot analysis, consistent with 40 CFR 93.116 and 93.123 and EPA's Hot-Spot Guidance, shows that the project would not cause or contribute to, or worsen, any new localized violation of PM10 and/or PM2.5 standards. Go to Step 12.
<p>Step 12. Does the approved PM SIP include any PM10 and/or PM2.5 control measures that apply to the project, and has a written commitment been made as part of the air quality analysis to implement the identified SIP control measures? [(Control measures can be found in the applicable Federal Register notice at: http://www.epa.gov/otaq/stateresources/transconf/reg9sips.htm#ca.)]</p> <input type="checkbox"/> If yes, a written commitment is made to implement the identified SIP control measures for PM10 and/or PM2.5 through construction or operation of this project (40 CFR 93.117). Go to Step 14.
<input type="checkbox"/> If no, go to Step 13.
<p>Step 13a. Have project-level mitigation or control measures for CO, PM10, and/or PM2.5, included as part of the project's design concept and scope, been identified as a condition of the RTP or TIP conformity determination? AND/OR</p> <p>Step 13b. Are project-level mitigation or control measures for CO, PM10, and/or PM2.5 included in the project's NEPA document?</p> <p>AND</p> <p>Step 13c (applies only if Step 13a and/or 13b are answered "yes"). Has a written commitment been made as part of the air quality analysis to implement the identified measures?</p> <input type="checkbox"/> If yes to 13a and/or 13b and 13c, a written commitment is made to implement the identified mitigation or control measures for CO, PM10, and/or PM2.5 through construction or operation of this project. These mitigation or control measures are identified in the project's NEPA document and/or as conditions of the RTP or TIP conformity determination¹ (40 CFR 93.125(a)). Go to Step 14.
<input type="checkbox"/> If no, go to Step 14.
<p>Step 14. Does the project qualify for a 771.117(c)(22) or 771.117(c)(23) Categorical Exclusion pursuant to 23 USC 326 and is an Air Quality Conformity Analysis required to document any analysis required by Steps 1 through 13 of this form?⁴</p> <input type="checkbox"/> If yes, then Caltrans prepares the Air Quality Conformity Analysis and makes the conformity determination. No FHWA involvement is required. See the AQCA Annotated Outline . Go to Step 17.
<input type="checkbox"/> If no, go to Step 15.
<p>Step 15. Does the project qualify for any other Categorical Exclusion pursuant to 23 USC 326 (but NOT 771.117(c)(22) or 771.117(c)(23))?</p> <input type="checkbox"/> If yes, then no FHWA involvement is required and Caltrans makes the conformity determination through its signature on the CE form. An Air Quality Conformity Analysis (AQCA) is not needed. Go to Step 17.
<input type="checkbox"/> If no, go to Step 16.
<p>Step 16. Does the project require preparation of a Categorical Exclusion, EA, or EIS pursuant to 23 USC 327?</p> <input type="checkbox"/> If yes, then Caltrans submits a conformity determination to FHWA for FHWA's conformity determination. An AQCA is needed. See the AQCA Annotated Outline . <p>Date of FHWA air quality conformity determination: _____</p> <p>Go to Step 17.</p>
<p>Step 17. STOP as all air quality conformity requirements have been met.</p>
<p>Signature: </p>
<p>Printed Name: <u>Ryan Pommerenck</u> Date: <u>January 22, 2016</u></p>
<p>Title: <u>Air/Noise Specialist</u></p>

⁴ Please note that for ALL projects the project file must include evidence that one of the three following situation applies: 1) Conformity does not apply to the project area; or 2) The project is exempt from all conformity analysis requirements; or 3) The project is subject to project-level conformity analysis (and possibly regional conformity analysis) and meets the criteria for a conformity determination. The project file must include all supporting documentation and this checklist.