

# **NOISE TECHNICAL MEMORANDUM**

## **Inland Rail Trail Project Cities of San Marcos and Vista, San Diego County DISTRICT 11—SD—CML 5381(003)**

Attention: Kevin Hovey, Environmental Branch Chief, Caltrans District 11

From: Tim Chamberlain, Associate Environmental Planner, Dokken Engineering

Subject: Temporary Construction Noise – Inland Rail Trail Project  
Federal Aid No. CML 5381(003)

Date: October 31, 2012

### **Introduction**

This memorandum discusses temporary construction noise impacts from implementation of the Inland Rail Trail Project (see Figure 1: Project Vicinity and Figure 2: Project Location).

### **Project Background**

In 1999 and 2000, NEPA and CEQA environmental documents were approved for the Inland Rail Trail Project; a 31-mile long Class 1 bikeway project spanning from the City of Escondido to the City of Oceanside in San Diego County, California. The majority of this bikeway was proposed to be located on North County Transit District (NCTD) right-of-way, with the western most portion in the City of Oceanside to be located along Oceanside Boulevard. The City of San Marcos was the lead agency under CEQA (representing the Cities of Escondido, Vista, Oceanside, and San Diego County), while the California Department of Transportation (Caltrans) was the lead agency under NEPA, acting under delegation from the Federal Highways Administration. NEPA approval for this project was necessary because the project utilized federal funding. Since the initial environmental approvals in 1999 and 2000, the eastern most portion of the bikeway has been constructed from the Escondido Rail Station in the City of Escondido to the intersection of West Mission Road and North Pacific Street in the City of San Marcos.

In 2011, the San Diego Association of Governments (SANDAG) agreed to take over responsibility as the CEQA lead agency and decided to design and construct the next seven miles of the Inland Rail Trail Project from the intersection of West Mission Road and North Pacific Street in the City of San Marcos to the intersection of North Melrose Drive and West Bobier Drive. In order to accurately document changes in the natural and built environment, as well as any changes in environmental regulations since 2000, SANDAG will prepare a revalidation of the NEPA environmental document and a CEQA

environmental document to fully update the environmental record. This process will document changes to the proposed project and any additional avoidance, minimization, and mitigation measures, to reduce potential environmental impacts caused by the project.

## **Project Description**

SANDAG, in cooperation with the City of San Marcos, County of San Diego, City of Vista, and Caltrans, proposes to construct a seven-mile segment of the Inland Rail Trail within the Cities of San Marcos and Vista, and the County of San Diego. Construction is estimated to require 500 working days and to begin in April 2014 and extend approximately through April 2016 to allow for potential phasing of construction. The purpose of this project is to provide a continuous east-west, non-motorized vehicle route along the SR 78 corridor in order to aid in the improvement of regional air quality. A secondary benefit of this project is to provide a safer bicycle and pedestrian route off of major arterial roadways between Escondido and Oceanside.

The proposed project would involve the construction of a Class I bikeway along the NCTD railroad right-of-way between the intersection of West Mission Road and North Pacific Street in the City of San Marcos and the intersection of North Melrose Drive and West Bobier Drive. The bikeway would typically consist of two 5-foot bicycle lanes, two 2-foot unpaved shoulders and two 2-foot landscaped zones, but the width may be reduced in small sections to avoid impacts to environmental resources or due to topographical and right-of-way constraints. The California Public Utilities Commission has required the bikeway to depart the NCTD railroad right-of-way to meet the nearest intersection when there are at-grade crossings with City and County roadways to ensure bicycle and pedestrian safety.

In addition to construction of the trail facility, additional features of this project include fencing on both sides of the trail (where necessary), landscaping, lighting, retaining walls to accommodate for areas with steep slopes, and several small structures to span across existing drainages and the Buena Creek. Improvements associated with the trail, accessibility, and its connections may also be necessary at the Sprinter train stations as well as where the trail crosses local roadways. Some of these crossings may require improvements to existing sidewalk, crosswalk, and other pedestrian/bicycle facilities.

## **Noise Setting**

In accordance with the Caltrans Environmental Handbook guidelines, noise is defined as unwanted sound. Sound levels usually are measured and expressed in decibels (dB), with 0 dB being the threshold of hearing. Decibel levels range from 0 to 140: 50 dB for light traffic is considered a low decibel level, whereas 120 dB for a jet takeoff at 200 feet is considered a high decibel level.

Under the Caltrans Traffic Noise Analysis Protocol (CaTNAP) 1998, projects that are not Type 1 only require an evaluation of predicted construction noise. The project is not a Type 1 project as defined in 23 CFR 772.5(h); "construction on new location or the physical alteration of an existing highway, which significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes." The proposed project is to construct a multi-use path for pedestrian and bicycle use.

Although it is a new facility, the expected uses will not generate substantial noise and therefore, only construction noise impacts are discussed.

The project would generally take place within railroad right-of-way and would be adjacent to areas zoned Residential, Commercial, and Industrial. The nearest residences to the project are located adjacent to the railroad right-of-way and the proposed alignment of the trail (roughly 50 ft distance minimum).

Noise sources that contribute to ambient noise levels in and adjacent to the project site include substantial periodic noise of the Springer and freight trains as well as low levels of traffic from local streets and noise from residential activities. Table 1 summarizes typical ambient noise levels based on population density.

**Table 1. Population Density and Associated Ambient Noise Levels**

Population Density	dBA, Ldn
Rural Suburban	40–50
Quiet suburban residential or small town	45–50
Normal suburban residential urban	50–55
Normal urban residential	60
Noisy urban residential	65
Very noisy urban residential	70
Downtown, major metropolis	75–80
Under flight path at major airport, 0.5 to 1 mile from runway	78–85
Adjoining freeway or near a major airport	80–90
Sources: Cowan 1984, Hoover and Keith 1996	

Potentially sensitive noise receptors in the vicinity of the project site include the residential units adjacent to the project alignment. The vicinity of the project area is most similar to that of “noisy urban residential” setting due to the close proximity to the railroad tracks with an expected typical noise level of 65 dBA. Appropriate community noise exposure is indicated in the City of Vista General Plan Noise Element (Chapter 6). As shown in Table 2 below, the presumed ambient noise level for residential during the day is 0-60 dBA for normally acceptable, 55-70 dBA for Conditionally Acceptable, 70-75 dBA for Normally Unacceptable, and 75 dBA or greater for Clearly Unacceptable.

**Table 2. City of Vista Ambient Noise Level (Residential)**

Normally Acceptable	0-60 dBA
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Conditionally Acceptable	55-70 dBA
Normally Unacceptable	70-75 dBA
Clearly Unacceptable	75 dBA and above

The City of San Marcos has similar guidance and it is represented in Table 3 below. The presumed ambient noise level for residential during the day is 0-60 dBA for normally acceptable, 60-75 dBA for Conditionally Acceptable, and 75 dBA or greater for Unacceptable.

**Table 3. City of San Marcos Ambient Noise Level (Residential)**

Normally Acceptable	0-60 dBA
Conditionally Acceptable	60-75 dBA
Unacceptable	75 dBA and above

## **ENVIRONMENTAL CONSEQUENCES**

Generally, noise levels at construction sites can vary from 55 dBA to a maximum of nearly 80 dBA when heavy equipment is used. During construction of the project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction noise is regulated by Caltrans Standard Specifications Sections 7-1.011 "Sound Control Requirements," and 14-8.02 "Noise Control," which state that noise levels generated during construction shall comply with applicable local, state, and federal regulations, and that all equipment shall be fitted with adequate mufflers according to the manufacturers' specifications.

Construction noise of this project would be intermittent, and noise levels would vary depending on the type of construction activity. Further, the existing noise environment is currently impacted by the close proximity of the railroad tracks and frequent running of the sprinter and freight trains throughout the day. The loudest construction activities are likely to be engine noise from construction vehicles. For this project, lowest construction equipment-related noise levels would be 55 dBA at a distance of 50 ft for sound from use of a pick-up truck. Highest noise levels would be up to 80 dBA (at a distance of 50 ft) for jackhammering and major earth work activities, and construction related to installation of certain portions of the trail facility such as the Buena Creek Bridge. However, when considering the type of construction necessary to complete this type of work, the majority of construction activities will be on the lower side of the estimate as the activities necessary to install the paved trail will not require large amounts of heavy (and noisy) equipment.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans Standard Specifications Sections 7-1.011 and 14-8.02, as well as applicable local noise standards. Construction noise would be short-term and intermittent. Construction is expected to take approximately 12 months.

Implementation of the measures below would minimize the temporary noise impacts from construction.

## **CONSTRUCTION NOISE CONTROL/MINIMIZATION MEASURES**

The City of San Marcos General Plan identifies two policy goals to reduce the potential for impacts associated with construction or maintenance operations.

Policy N-3.1: When adjacent to noise sensitive receptors, require developers and contractors to employ noise reduction techniques during construction and maintenance operations.

Policy N-3.2: Limit the hours of construction and maintenance operations located adjacent to noise-sensitive land uses.

In order to comply with these policy goals, the project will follow the standard construction noise requirements regulated by Caltrans Sections 7-1.01I and 14-8.02 of the Standard Specifications which states the following:

- Do not exceed 86 dBA 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.

## **SUMMARY**

From the above discussion, it is concluded that construction noise impacts due to the project would not be substantial based on 1) the project is not a Type 1 project; 2) proposed construction duration is temporary; and 3) construction of the project would use proposed minimization methods. Temporary construction-related noise impacts will be minimized by implementation of Caltrans standard noise control requirements.

No adverse noise impacts from construction are anticipated because construction would be conducted in accordance with Caltrans' standard specifications, would be consistent with local policies, and would be short term and intermittent.

## REFERENCES

City of Vista, General Plan Update 2030. Chapter 6 – Noise.

City of San Marcos General Plan Update 2030. Chapter 7 – Noise.

City of Vista Noise Ordinance

City of San Marcos Noise Ordinance

Cowan, J. P. 1984. Handbook of Environmental Acoustics. New York, NY: John Wiley & Sons.

California Department of Transportation: Division of Environmental Analysis. 2006. Traffic Noise Analysis Protocol: For New Highway Construction, Reconstruction, and Retrofit Barrier Projects.

Hoover, R.M., and R.H. Keith. 1996. Noise Control for Buildings, Manufacturing Plants, Equipment and Products.



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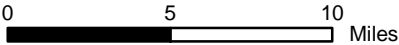
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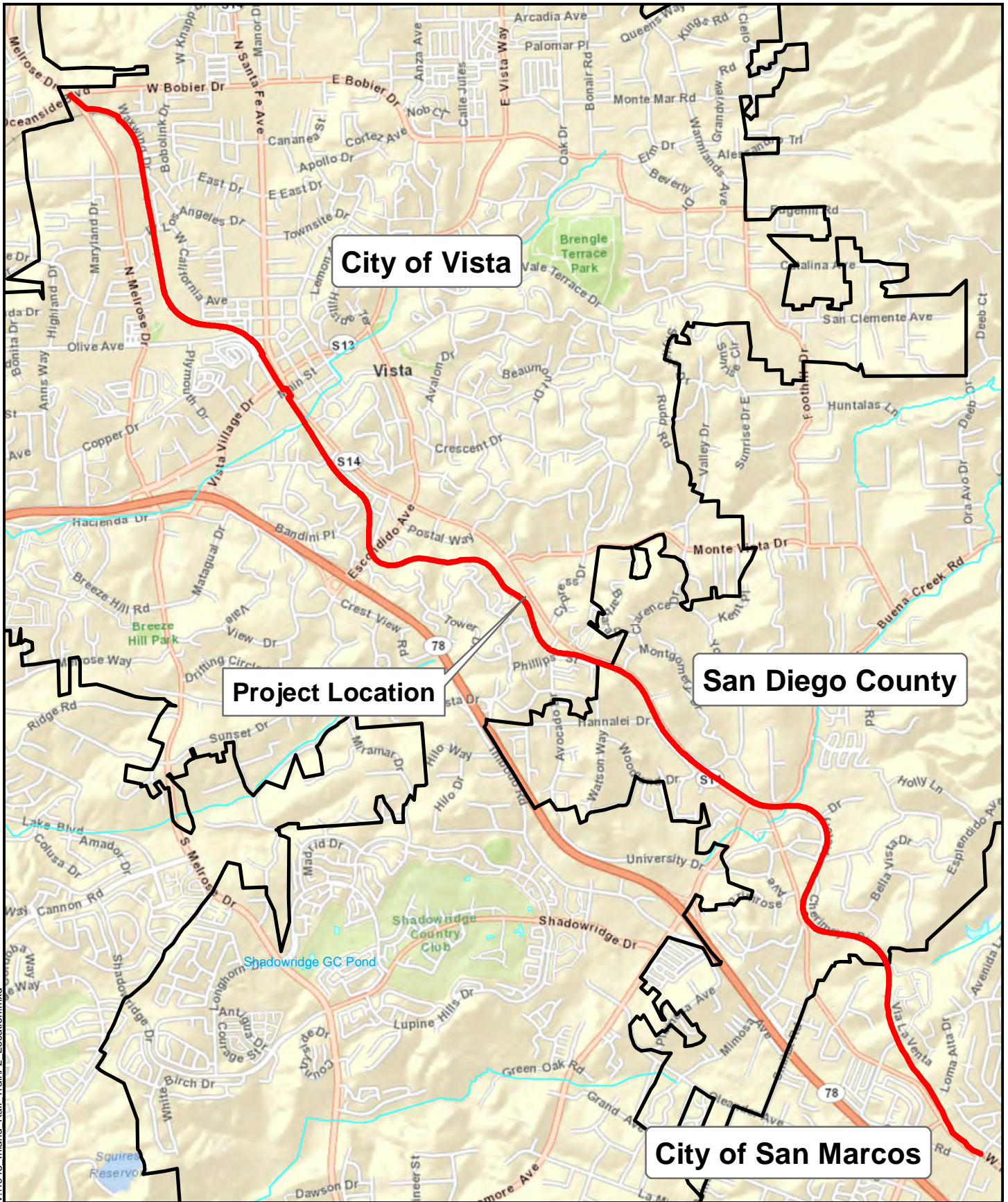
**FIGURE 1**  
**Project Vicinity**

CML 5381(003)

Inland Rail Trail Project

San Diego County, California





VA1948 Inland Rail Trail F2 Location.mxd

Source: ESRI 2008; Dokken Engineering 11/2/2012; Created By: timc



0 0.5 1 Miles

**FIGURE 2**  
**Project Location**  
 CML 5381(003)  
 Inland Rail Trail Project  
 San Diego County, California