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Format and Content Recommendations

Noise Technical Report

October 2024

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Purpose

This Noise Technical Report Format and Content Recommendations document provides guidance on preparing reports for submittal to the City of San Marcos (City) for discretionary and other projects. These guidelines are designed to accomplish the following:

- Ensure the quality, accuracy, and completeness of the reports
- Assist in City staff's efficient and consistent review of maps and documents from different consultants
- Provide adequate information to make appropriate decisions and determinations regarding conformance with applicable regulations
- Increase the efficiency of the environmental review process and avoid unnecessary time delays

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Table of Contents

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A. Introduction

All Noise Technical Reports submitted to the City of San Marcos (City) shall follow these guidelines unless otherwise approved by the Planning Director. The length of reports and amount of information to include will vary depending on the size and scope of the project, regional setting, potential project-generated noise sources, and degree of impacts proposed.

A.1 Full Noise Technical Report

A Full Noise Technical Report is required for projects anticipated to result in construction and operational noise impacts in an area with existing sensitive receptors. As defined in the City's General Plan Noise Element, sensitive land uses include residences, hospitals, convalescent and daycare facilities, schools, and libraries. It is recommended that full reports include ambient noise level measurements (refer to Section 2.3 in Section B.2, Full Noise Technical Report).

A.2 Noise Technical Letter Report

A Noise Technical Letter Report may be adequate for smaller projects and those with limited anticipated noise sources. Through a project-specific analysis, City staff will determine if a letter report is adequate. A letter report may be appropriate when a project's impacts are anticipated to be limited to construction, and detailed vehicle or stationary noise source modeling is not necessary (refer to Section 5 in Section B.2). Similarly, a letter report may be adequate to provide a summary of vehicle noise modeling or stationary source modeling if remaining construction and operational noise sources are analyzed based on typical reference noise levels (Section 5 in Section B.2). Impacts addressed in an Initial Study or Environmental Impact Report section should still include analysis to the level of detail outlined in Section B.2 for a Full Noise Technical Report.

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B. Report Format Requirements

B.1 General Report Guidelines

Noise Technical Reports shall follow these general guidelines:

- Reports shall be technical in nature and avoid anecdotal or extraneous information.
- Reports shall be concise and written in a professional manner suitable for peer review. City staff may reject reports based on quality if the report is written in such a manner that a timely and accurate review cannot be completed.
- Attached plans shall be to scale and contain a north arrow and both number and bar scales. When maps are reduced, adjust the scale or mark the map "Reduced/Use Bar Scale."
- For Full Noise Technical Reports, each section and subsection of the reports shall be clearly delineated and may use the numerical headings contained in this Noise Technical Report Format and Content Recommendations document.
- Draft copies of the reports shall have all changes made in response to City staff comments in strikeout/underline form. Final copies of the reports shall be clean, with all strikeout/underline removed.

Noise Technical Reports will be reviewed for technical accuracy and completeness by City staff and the City's peer review consultant. Reports are considered drafts until City staff determines the reports to be complete.

B.2 Full Noise Technical Report

B.2.1 Outline

The required sections of a Full Noise Technical Report are provided in the outline below:

Report

Title Page
Table of Contents
    List of Tables
    List of Appendices
Acronyms and Abbreviations
Executive Summary
Section 1. Introduction
    1.1. Purpose of the Report
    1.2. Project Location and Description

Section 2. Existing Conditions
- 2.1. Noise Basics
  - 2.1.1. Quantification of Noise
  - 2.1.2. Noise Effects
- 2.2. Environmental Vibration Basics
- 2.3. Existing Noise Environment

Section 3. Regulatory Framework
Section 4. Methods and Significance Thresholds
- 4.1. Methods
  - 4.1.1. Excessive Noise Levels
  - 4.1.2. Groundborne Vibration
- 4.2. Significance Thresholds

Section 5. Project Impacts, Significance, and Mitigation Measures/Project Design Features
- 5.1. Threshold 1: Excessive Noise Levels
- 5.2. Threshold 2: Groundborne Vibration
- 5.3. Threshold 3: Aircraft Noise

Section 6. Conclusion
Section 7. Summary of Mitigation Measures/Project Design Features
Section 8. References
Section 9. List of Preparers

Technical Appendices (order will be determined by reference in the report)

A. Figures (unless included in the body of the report)
B. Any other documents necessary to supplement the information provided in the report (i.e., monitoring results, modeling output, and datasheets)

B.2.2 Content

Title Page

The title page shall include the following information:

- Project number and name
- Date (original report date plus all revisions), which must be revised in each version of the draft report
- Name of City-approved California Environmental Quality Act (CEQA) consultant preparing document, firm name (if applicable), and address
- Signature of City-approved CEQA consultant
- Project proponent's name and address
- The following statement: "Prepared for the City of San Marcos"

Table of Contents

Include a table of contents that follows the order and format outlined in this Noise Technical Report Format and Content Recommendations document. Page numbers should be assigned when possible. Titles of the tables, figures, and appendices should be listed in the order in which they appear in the report.

Acronyms and Abbreviations

Provide a list of acronyms and abbreviations used in the report.

Executive Summary

Provide a brief summary of the project, potential impacts of the project, and proposed mitigation. No new information shall be provided in the summary that is not further explained elsewhere in the report. The purpose of the summary is to provide a quick reference for the public and decision makers. Therefore, the language shall be less technical than that used in the remainder of the report.

Section 1 Introduction

1.1 Purpose of the Report

Discuss the purpose of the report. Example language: "The purpose of this report is to document the sensitive noise receptors identified as potentially affected by the project; identify potential noise impacts resulting from the project; determine compatibility of the existing noise environment with proposed land uses; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with applicable regulations, including the City's Noise Ordinance (Municipal Code, Chapter 10.24), noise-related Performance Standards (Municipal Code, Section 20.300.070), and the Noise Element of the General Plan."

1.2 Project Location and Description

Project Location. Discuss the project location in the regional and local context and identify the City's General Plan and zoning designations of the project site and surrounding area. Include a project location map as a numbered figure with the site clearly identified and labeled.

Project Description. Provide a detailed description of the project, including any design alternatives and all project components (i.e., staging areas and equipment storage areas or other areas not directly on the main project site).

Describe the whole of the project, not just the immediate action being pursued. For example, a Tentative Parcel Map proposes to subdivide property. The project in question is not just the increase in the number of lots but the ultimate outcome of residential or commercial development.

Another example is an application for a grading permit. The project is not just the immediate grading but also the end result for which the land was graded.

The project description shall be as thorough as possible and include the following details:

- Size of the project site and area proposed for development
- Purpose and scale of the proposed uses associated with the project, such as residential development
- Proposed structures (e.g., size, location, purpose)
- Location of all easements, including those for biological open space, utilities, and roads
- Proposed or potential uses including any existing structures and uses that will continue under the proposed action
- Description of any anticipated stationary noise sources, such a heating, ventilation, and air conditioning (HVAC) systems, generators, or industrial equipment
- Off-site improvements, such as roads, utility extensions, or stormwater facilities
- Construction equipment staging areas
- Proposed site access

The project description shall include a site plan as a numbered figure with proposed uses clearly labeled.

Section 2 Existing Conditions

2.1 Noise Basics

Provide necessary information regarding noise quantification and noise effects. Noise quantification information shall include relevant definitions, methodology behind noise metrics, and describe how noise level changes are generally perceived by individuals. Noise attenuation over distance should also be explained. These discussions are meant to provide necessary technical information to guide understanding in further technical analysis.

2.2 Environmental Vibration Basics

Provide a discussion of vibration, including vibration metrics, relevant definitions, and general thresholds for human response and building damage.

2.3 Existing Noise Environment

Discuss noise sources and noise levels that exist in the area, including transit and vehicle transportation noise sources. The report should review noise sources described in the City's General Plan Noise Element and include if the project site is in a noise contour as indicated in the Noise Element. This section shall also include discussions of the nearest noise sensitive land uses and nearest vibration sensitive land uses.

For Full Noise Technical Reports, it is recommended that the report include a noise survey to characterize the existing noise environment. Surveys shall be conducted in accordance with Section 20.300.070(E)(1) of the City's Municipal Code. In addition to these requirements, surveys should include sufficient locations to characterize the project site and existing noise levels at potentially affected sensitive receptors. Survey duration shall be a minimum of 15 minutes where noise levels are relatively constant. At least one 24-hour measurement is recommended for projects that are anticipated to generate noise during nighttime hours or where the project proposes new sensitive receptors. A figure shall be provided that identifies all measurement locations. Measurements results and field conditions, including photographs, shall be included as an appendix to the report.

Section 3 Regulatory Framework

Summarize federal, state, regional, and local regulations, plans, policies, and programs that provide protection from excessive noise that are applicable to the project or referenced in the project impact analysis. Local regulations listed shall include applicable sections of the City's Noise Ordinance (Municipal Code, Chapter 10.24), noise-related Performance Standards (Municipal Code, Section 20.300.070), hourly limitations on grading (Municipal Code, Section 17.32.180), and the Noise Element of the General Plan.

Section 4 Methods and Significance Thresholds

4.1 Methods

Provide a discussion of methods and metrics used to determine impacts for excessive noise levels and groundborne vibration. Discuss how impacts are assessed (i.e., comparison of land uses) and how project noise levels are estimated. Include descriptions of models used, as well as data inputs and assumptions. Include references to sources for relevant data, such as the project traffic analysis, and sources for reference noise levels, such as construction equipment noise levels from the Federal Highway Administration. Where a similar project is used for a reference noise level, explain why it is an appropriate reference for the proposed project. Where manufacturer specifications are used, include specification sheets as an appendix.

Based on guidance from the California Department of Transportation, vehicle noise modeling should be conducted when a project would have the potential to double traffic volumes on any roadway segment.[1] If modeling is not prepared, a report should contain sufficient evidence to demonstrate that a doubling of traffic would not occur. If a project involves truck traffic-generating use, such as a warehouse facility, modeling should be conducted even if volumes do not double compared to existing conditions.

[1] California Department of Transportation. 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. September.

4.2 Significance Thresholds

Include a list of the significance guidelines or criteria provided by CEQA and current Appendix G issues. Example language is below:

> Appendix G of the CEQA Guidelines (CEQA Guidelines, Section 15000 et seq.) defines "significant effect on the environment" as a "substantial, or potentially substantial adverse change in the environment." Appendix G of the CEQA Guidelines further indicates that there may be a significant effect on the environment if the project would:
>
> 1. Generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies.
> 2. Generate excessive groundborne vibration or groundborne noise levels.
> 3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public use airport or private airstrip, expose people residing or working in the project area to excessive noise.

Each of the items listed in the Significance Thresholds section should be evaluated in the following sections of the report to provide evidence to support the determination of if the impact is significant or not.

Section 5 Project Impacts, Significance, and Mitigation Measures/ Project Design Features

Summarize direct and indirect noise impact anticipated as a result of the proposed action, including but not limited to during construction activities and post-construction impacts. The section shall also include an analysis of the compatibility of existing noise levels with proposed land uses in accordance with the City's General Plan Noise Element. Potential impacts resulting from any part of the project must be included, even if the impacts are temporary, off site, or may not occur until a future phase of the project, such as grading.

5.1 Threshold 1: Excessive Noise Levels

Significance Criteria

List applicable criteria from the City's Noise Ordinance (Municipal Code, Chapter 10.24), noise-related Performance Standards (Municipal Code, Section 20.300.070), and the Noise Element of the General Plan. The exterior noise standards in Table 20.300-4 of the noise-related Performance Standards (and referenced in the Noise Ordinance) will generally apply to new operational sources of a project, including mechanical equipment.

Regarding construction, this section should evaluate if the project would comply with limitations on grading hours of operation in City's Municipal Code, Section 17.32.180, and an 8-hour average noise limit of 75 A-weighted decibel (dBA) for construction activities. This noise level limit is based on Section 36.409 of the County of San Diego Noise Ordinance.

The Noise and Land Use Compatibility Guidelines for Transportation-Related Noise in Table 7-3 and Noise Standards in Table 7-4 of the City's General Plan Noise Element apply for determining the significance of ambient vehicle noise levels and determining the compatibility of the existing noise environment on the project. A project would result in a significant impact related to ambient vehicle noise if it would cause a roadway noise level to exceed the applicable normally compatible noise standard at land uses adjacent to the segment or cause a 3 dBA Community Noise Equivalent Level (CNEL) or more increase on a roadway segment that would exceed the compatibility standard without the project. A noise compatibility impact would occur if the project would result in development of new receptors that would be exposed to noise levels in excess of the applicable standards in General Plan Noise Element Tables 7-3 and 7-4.

Analysis of Impacts

Using the guidelines outlined above, discuss the significance of any potential direct and indirect impacts identified on the site for construction and future operations. Headings in the analysis shall be used to clearly differentiate between temporary and permanent impacts. If the project includes several types of development, noise level impacts shall be addressed by type of development. Modeling results shall be summarized in tables as applicable. For example, construction noise levels should be provided at the construction area and at the nearest sensitive receptors. Reference noise levels may be obtained from several sources, including the Federal Highway Administration Roadway Construction Noise Model. However, if specialized equipment would be required, such as a rock crusher or blasting, additional project-specific information should be provided.

Roadway noise levels should be provided for each modeled segment with and without project implementation for comparison. Stationary operational noise sources should also be quantified at the nearest sensitive receptors. Roadway and train noise should be considered when determining ambient noise compatibility with proposed land uses. Contours contained in the General Plan Noise Element may be used to screen for potential noise level exposure. The report should describe any design features that would minimize noise exposure to existing and proposed receptors and indicate if calculated noise levels account for these features. The analysis must make a conclusion, based on the significance guidelines, regarding if these impacts are significant or not.

Mitigation Measures and Design Considerations

Provide brief descriptions of the proposed mitigation measures and design considerations. For each measure, state the impact being mitigated. Mitigation measures should detail the mitigation location and barrier height if applicable. A figure should be provided that indicates barrier location,

if applicable. For each significant impact, determine if the proposed mitigation measures have reduced the significance level to "less than significant" in accordance with the stated significance guidelines. General Plan Noise Element Policies N-1.3, N-1.4, N-2.5, and N-3.1 through N-3.5 should be considered related to construction and operation mitigation. If a significant and unavoidable impact is identified, this section should detail mitigation measures that were considered but rejected as infeasible.

Significance after Mitigation

Provide a brief analysis of the level of significance after the mitigation measures and/or project design features are applied.

5.2 Threshold 2: Groundborne Vibration

Significance Criteria

The City does not have adopted vibration criteria for construction. It is recommended that projects use guidance from the California Department of Transportation or Federal Transit Administration related to building damage, receptor annoyance, and disturbance of vibration sensitive equipment, as applicable. Document the applicable standards used in the analysis. California Department of Transportation guidelines may be obtained from the Transportation and Construction Vibration Guidance Manual (last updated in April 2020). Federal Transit Administration guidelines may be obtained from the Transit Noise and Vibration Impact Assessment Manual (last updated in September 2018).

Analysis of Impacts

Using the selected criteria described above, discuss the significance of the direct and indirect groundborne vibration impacts that might occur as a result of the project. This shall include groundborne vibration impacts related to human annoyance, damage to existing structures, and interference with vibration sensitive equipment, as applicable. The project should include a quantitative analysis of potential construction impacts. Using reference vibration levels from the Federal Transit Administration's Transit Noise and Vibration Impact Assessment Manual is recommended. Similar to construction noise, if specialized equipment would be required, such as a rock crusher or blasting, additional project-specific information should be provided. Vibration levels should be quantified at affected receptors and compared to applicable thresholds. At a minimum, assessment of operational impacts should qualitatively describe why a project would not be a source of substantial vibration. Any potential sources of operational vibration, such as ongoing heavy equipment operation, should be addressed quantitatively similar to construction. The section should provide a determination of if the impact is significant and if mitigation may be applied to reduce the significance.

Mitigation Measures and Design Considerations

Follow the instructions in Section 5.1, Threshold 1: Excessive Noise Levels, regarding format and discussion.

Significance after Mitigation

Provide a brief analysis of the level of significance after the mitigation measures and/or project design features are applied.

5.3 Threshold 3: Aircraft Noise

Significance Criteria

A project would result in a significant impact if it would expose new or existing receptors to noise levels in excess of the City's Noise Element compatibility standards as a result of aircraft noise exposure.

Analysis of Impacts

The McClellan Palomar Airport is the applicable airport for evaluating potential aircraft noise impacts. Detail project distance from the McClellan Palomar Airport, identify if the project is located within the City's airport overflight notification zone, and reference the airport's Airport Land Use Compatibility Plan to determine if the project is located in a noise exposure contour and would potentially expose people residing or working on the project site to excessive noise levels.

Mitigation Measures and Design Considerations

Follow the instructions in Section 5.1 regarding format and discussion.

Significance after Mitigation

Provide a brief analysis of the level of significance after the mitigation measures and/or project design features are applied.

Section 6 Conclusion

Provide an overview of impacts resulting from project implementation. Briefly include significance of impacts for each significance criteria.

Section 7 Summary of Mitigation Measures/Project Design Features

Provide a brief text summary of the mitigation measures for project impacts and/or project design features. This section shall provide a mitigation table that summarizes the mitigation measures and/or project design features and refers to the guidelines that require each mitigation measure or project design feature. Use the sample table provided below.

Table X. Summary of Mitigation Measures/Project Design Features

Proposed Mitigation/ Project Design Features	Level of Significance after Mitigation	Guideline Addressed

Source: XX.
Note: XX.

Section 8 References

Include a list of documents referenced in the report.

Section 9 List of Preparers

Provide a list of preparers, noting each person included on the City's list of approved consultants. The principal author must be on the list, or the report will not be accepted.

Technical Appendices

List in the table of contents each document appended to the report in the order in which they are referenced in the report. The following documents must be included in the report, either in the text (if size is appropriate) or as an appendix:

A. Figures (unless included in the body of the report)
B. Any other documents necessary to supplement the information provided in the report (i.e., monitoring results, modeling output, and datasheets)

B.3 Noise Technical Letter Report

A letter report may be adequate to document noise impacts for smaller projects and those with limited anticipated noise sources. A letter report may be appropriate when a project's impacts are anticipated to be limited to construction and detailed vehicle or stationary noise source modeling is not necessary (refer to Section 5 in Section B.2). Similarly, a letter report may be adequate to provide a summary of vehicle noise modeling or stationary source modeling, if remaining noise construction and operational sources may be analyzed based on typical reference noise levels (refer to Section 5 in Section B.2). Based on the information provided in the letter report, the City may require a Full Noise Technical Report.

B.3.1 Outline

The required sections of the Noise Technical Letter Report are provided in the outline below. Sections should generally follow the format and required contents of the sections provided in the Full Noise Technical Report outline above.

Introduction, Project Description, and Location
Environmental Setting
Regulatory Framework
Significance of Project Impacts and Proposed Mitigation/Project Design Features
References
Technical Attachments

B.3.2 Content

Although a title page is not required for a letter report, the first page of the report shall contain the following information:

- Project name and number
- Date (original letter report date plus all revisions)
- Name of City-approved CEQA consultant preparing the document, firm name (if applicable), and address

Introduction, Project Description, and Location

Describe all components of the project, including all off-site impacts. Provide a brief summary of the project location.

Environmental Setting

Discuss noise sources and noise levels that exist in the area, including transit and vehicle transportation noise sources. The letter report should review noise sources described in the City's General Plan Noise Element and include if the project site is located in a noise contour as indicated in the Noise Element. If applicable, present measurements of existing noise levels on and near the project site and explain methodology and results of noise measurements. This section shall also include discussions of the nearest noise sensitive land uses, and nearest vibration sensitive land uses, as applicable to the impact analysis.

Regulatory Framework

Limit this section to regulations referenced in the impact analysis but include all applicable standards used in the letter report.

Significance of Project Impacts and Proposed Mitigation/ Project Design Features

Specify what impacts are addressed in the letter report, including applicable CEQA Appendix G issue questions. Significance criteria, impact analysis, and mitigation measures should include similar content and details as described for applicable analyses in Section 5 for a Full Noise Technical Report.

References

Include a list of documents referenced in the letter report.

Technical Attachments

Include any figures and supplemental information referenced in the letter report, such as noise monitoring or modeling results.