



City of Tracy

Modified Ellis Project

Draft Revised Environmental Impact Report

(State Clearinghouse No. 2012022023)



Volume 2: Appendices

Prepared for
The City of Tracy

Prepared by
RBF Consulting



July 2012





A Draft Initial Study, Notice of Preparation (NOP), and Scoping Comments

DRAFT INITIAL STUDY (IS)

Prepared by:
R&E Consulting
111 North Market Street, Suite 440
San Jose, California 95113

City of Tracy Ellis Specific Plan and Ellis Development Agreement Initial Study

Prepared for:

The City of Tracy, Department of Development and Engineering
Services

February 2012

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ENVIRONMENTAL DETERMINATION

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

<input type="checkbox"/> Aesthetics	<input type="checkbox"/> Agriculture Resources	<input checked="" type="checkbox"/> Air Quality	<input checked="" type="checkbox"/> Biological Resources
<input type="checkbox"/> Cultural Resources	<input type="checkbox"/> Geology/Soils	<input checked="" type="checkbox"/> Hazards & Hazardous Materials	<input type="checkbox"/> Hydrology/Water Quality
<input type="checkbox"/> Land Use / Planning	<input type="checkbox"/> Mineral Resources	<input checked="" type="checkbox"/> Noise	<input type="checkbox"/> Population/Housing
<input type="checkbox"/> Public Services	<input type="checkbox"/> Recreation	<input checked="" type="checkbox"/> Transportation / Traffic	<input checked="" type="checkbox"/> Utilities/Service Systems
<input checked="" type="checkbox"/> Mandatory Finding of Significance			

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that, although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☒ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that, although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable legal standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

For

Section 1 Introduction

This Initial Study has been prepared in compliance with the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] 21000 et seq.) and the *CEQA Guidelines* (California Administrative Code Sections 15000 et seq.), as amended January 1, 2006.

According to Section 15063 (a)(c) of the *CEQA Guidelines*:

- (a) *Following preliminary review, the lead agency shall conduct an initial study to determine if the project may have a significant effect on the environment. If the lead agency can determine that an EIR will clearly be required for the project, an initial study is not required but may still be desirable.*
- (c) *Purposes. The purposes of an initial study are to:*
 - 1) *Provide the lead agency with information to use as the basis for deciding whether to prepare an EIR or negative declaration;*
 - 2) *Enable an applicant or lead agency to modify a project, mitigating adverse effects before an EIR is prepared, thereby enabling the project to qualify for a negative declaration;*
 - 3) *Assist the preparation of an EIR, if one is required, by:*
 - a. *Focusing the EIR on the effects determined to be significant,*
 - b. *Identifying the effects determined not to be significant,*
 - c. *Explaining the reasons for determining that potentially significant effects would not be significant, and*
 - d. *Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.*
 - 4) *Facilitate environmental assessment early in the design of a project;*
 - 5) *Provide documentation of the factual basis for the finding in a negative declaration that a project will not have a significant effect on the environment;*
 - 6) *Eliminate unnecessary EIR's;*
 - 7) *Determine whether a previously prepared EIR could be used with the project.*

The *CEQA Guidelines* Section 15382 states:

"Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

The *CEQA Guidelines* Section 15365 further states:

An "Initial Study" means a preliminary analysis prepared by the lead agency to determine whether an EIR [Environmental Impact Report] or a negative declaration must be prepared and to identify the significant effects to be analyzed in an EIR.

The Initial Study for the proposed Project focuses on effects determined to be potentially significant, and has been prepared as an objective, full-disclosure document to inform agency decision-makers and the general public of the direct and indirect physical environmental effects of the proposed action and any measures to reduce or eliminate potential adverse impacts.

The environmental checklist, approved by the City of Tracy (City) and consistent with the *CEQA Guidelines*, is used to focus this study on physical, social, and economic factors that may be further impacted by the proposed Project. The checklist indicates one of the following determinations for each specified potential impact under each category of impact on the checklist:

- Potentially significant impact
- Potentially significant impact unless mitigation incorporation
- Less than significant impact
- No impact

Section 2 Project Description

1. **Project Title:** Ellis Specific Plan and Ellis Development Agreement.
2. **Lead Agency Name and Address:** City of Tracy, Department of Development and Engineering Services,
333 Civic Center Plaza
Tracy, CA 95376
3. **Contact Persons and Telephone Number:** Bill Dean, Assistant Director of Development and Engineering Services.
209-831-6400
4. **Project Location:** The Ellis Specific Plan (ESP) site is located in San Joaquin County, adjacent to the southwestern portion of the City of Tracy, within the City of Tracy's Sphere of Influence. The ESP site is bounded by agricultural land on the north, the Union Pacific Railroad on the south, the Delta Mendota Canal to the southwest, Corral Hollow Road on the east, and Lammers Road on the west.
5. **Project Sponsor's Name and Address:** Surland Companies
1024 Central Avenue
Tracy, CA 95376
209-832-7000
6. **General Plan Designation:**

City of Tracy:	TR-Ellis
County of San Joaquin:	Various/Limited Industrial (I/L) and Resource Conservation (OS/RC)
7. **Zoning:**

City of Tracy:	Various, to be established with annexation and rezoning.
County of San Joaquin:	Various/Agriculture-Urban Reserve (AU-20)
8. **Description of Project:** The proposed Project is the execution of the City of Tracy General Plan TR-Ellis land use designation through the implementation of the Ellis Specific Plan (ESP). A Development Agreement that encompasses the Ellis Specific Plan (ESP), including a proposed 16-acre, family oriented swim center is also part of the Project.

The ESP serves as a comprehensive land use policy, zoning, and design guideline document for the future development of an area defined in the Tracy General Plan as TR-Ellis. As proposed, it is the intent of the ESP to implement and comply with the goals, objectives, and policies of the General Plan, including the specific intent of the General Plan with respect to TR-Ellis.

The vision of the proposed ESP is to create a mix of residential, commercial, office/professional, and recreational uses with the focal point of community activities centered around the village center, where neighborhood-serving retail services, recreational facilities, and residences are within walking distances of each other.

Implementation of the ESP would allow a mix of residential, commercial, office/professional, institutional, and recreational uses. The plan would accommodate up to a maximum of 2,250 residential units¹; 180,000 square feet of commercial use; and a 16-acre Swim Center.

9. Surrounding Land Uses and Existing Setting:

The City of Tracy is located in San Joaquin County, which is within the Central Valley region of California. The City is approximately 60 miles east of the San Francisco Bay, which is separated from the Central Valley by the Coastal Range. The southwestern portion of San Joaquin County is located within the Diablo Range, and generally consists of rolling hills cut by drainage channels. The topography in the vicinity of the City of Tracy flattens into the "low alluvial plains and fans" geomorphic units. The City lies adjacent to the foothills of the Diablo Range, just north of the Cedar Mountains. The land within and surrounding the City is relatively flat and uniform and is best characterized as open fields on a relatively flat agricultural plain.

The predominant land use surrounding the ESP site is agriculture, which is located to the north of the site. Union Pacific railroad lines are located south of the site and form the southern site boundary. The Delta Mendota Canal abuts the site to the southwest forming the southwestern site border. An MCI Telecommunications facility (switching station) is located adjacent to the southeastern corner of the ESP site. Further southeast of the ESP area, south of Linne Road and east of Corral Hollow Road, there are a number of large-scale aggregate mining and concrete production operations, while the Tracy Municipal Airport is located further southeast of this area. The Edgewood residential development is located east of the ESP site, across Corral Hollow Road. West of the ESP site, across Lammers Road, is characterized by sparse rural residential development. The proposed ESP site is raw land and largely undeveloped; however, a few residences and a residence operating a small tree growing operation are located within the site.

¹ Secondary residential units, as defined by the Tracy Municipal Code (T.M.C.) may be permitted within the ESP area provided they are located on lots that meet criteria to be established in the ESP.

2.1 Background and History

In 2006, the City approved a new General Plan to address changes in growth within the City of Tracy. Subsequently, the City approved an update to the General Plan in 2011 as well as a Sustainability Action Plan. The General Plan contains specific land use designations for the Ellis Specific Plan site, which include TR-Ellis, Village Center, and Commercial. The Tracy City Council adopted the General Plan update on February 1, 2011, which confirmed the TR-Ellis designation. With the update of the City's General Plan in 2011, and prior to adopting the General Plan, the City undertook environmental review of the potential direct and indirect environmental impacts pursuant to the CEQA and the CEQA Guidelines. The City certified the Final Environmental Impact Report (EIR) for the General Plan Update (SCH No. 2008092006) and adopted findings, mitigation measures, and a statement of overriding considerations on February 1, 2011.

2.2 Project Location

The City of Tracy is located in San Joaquin County, which is within the Central Valley region of California. The City is approximately 60 miles east of the San Francisco Bay, which is separated from the Central Valley by the Coastal Range.

The proposed ESP area is adjacent to the southwestern portion of the City of Tracy (City); refer to Figure 2-1 (Regional Location Map). The ESP area is bounded by agricultural land on the north, the Union Pacific Railroad on the south, the Delta Mendota Canal to the southwest, Corral Hollow Road on the east, and Lammers Road on the west; refer to Figure 2-2 (Local Vicinity Map).

2.3 Site Characteristics

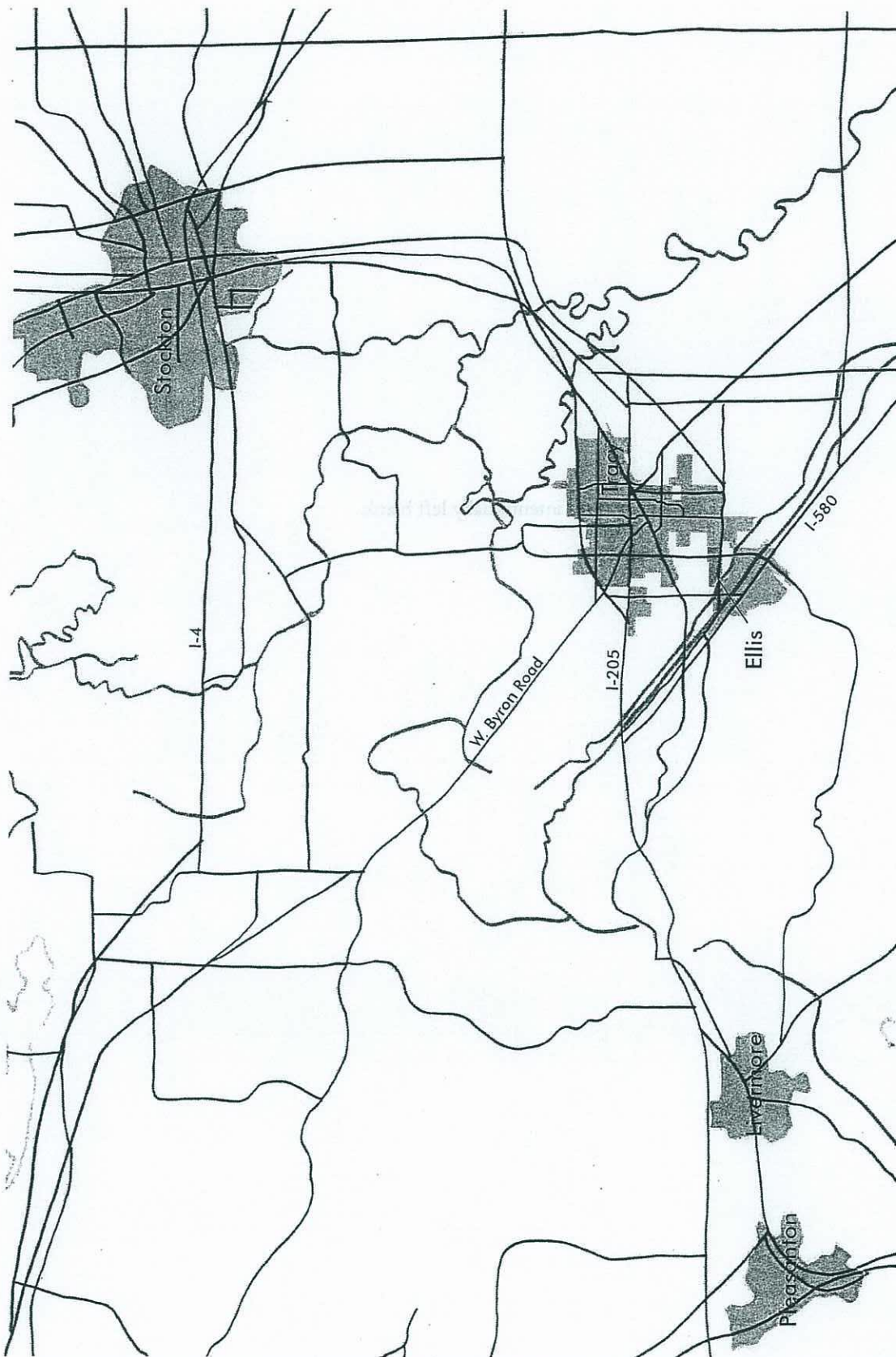
The southwestern portion of San Joaquin County is located within the Diablo Range, and generally consists of rolling hills cut by drainage channels. The topography in the vicinity of the City of Tracy flattens into the "low alluvial plains and fans" geomorphic units. The City lies adjacent to the foothills of the Diablo Range, just north of the Cedar Mountains. The land within and surrounding the City is relatively flat and uniform and is best characterized as open fields on a relatively flat agricultural plain.

The ESP area is currently sparsely developed. The great majority of land area is in large land holdings that consist of undeveloped land, and fields. Residential development occurs along Lammers Road and is characterized by large lots (five- and ten-acre parcels) that are developed with homes and accessory structures (barns, storage sheds, etc.). In addition, tree growing occurs within the site.

2.4 Regulatory Setting

In order to comprehensively plan for the City's future growth into lands outside the City limits, but within the City's Sphere of Influence (SOI), the General Plan provides for the land use designations of "Urban Reserve", "TR-Ellis," Residential Low, Commercial, Industrial, among others. In order for the development of TR-Ellis to proceed, it is a mandatory obligation of TR-Ellis that the City first adopt a Specific Plan that implements at least four residential criteria as currently described in TR-Ellis. The Project would amend the City of Tracy General Plan to modify density and acreage ranges of TR-Ellis in the General Plan from what was approved on February 1, 2011.

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Source: Urban Design Associates, August 2006

City of Tracy Ellis Specific Plan Approvals and
Ellis Development Agreement Initial Study

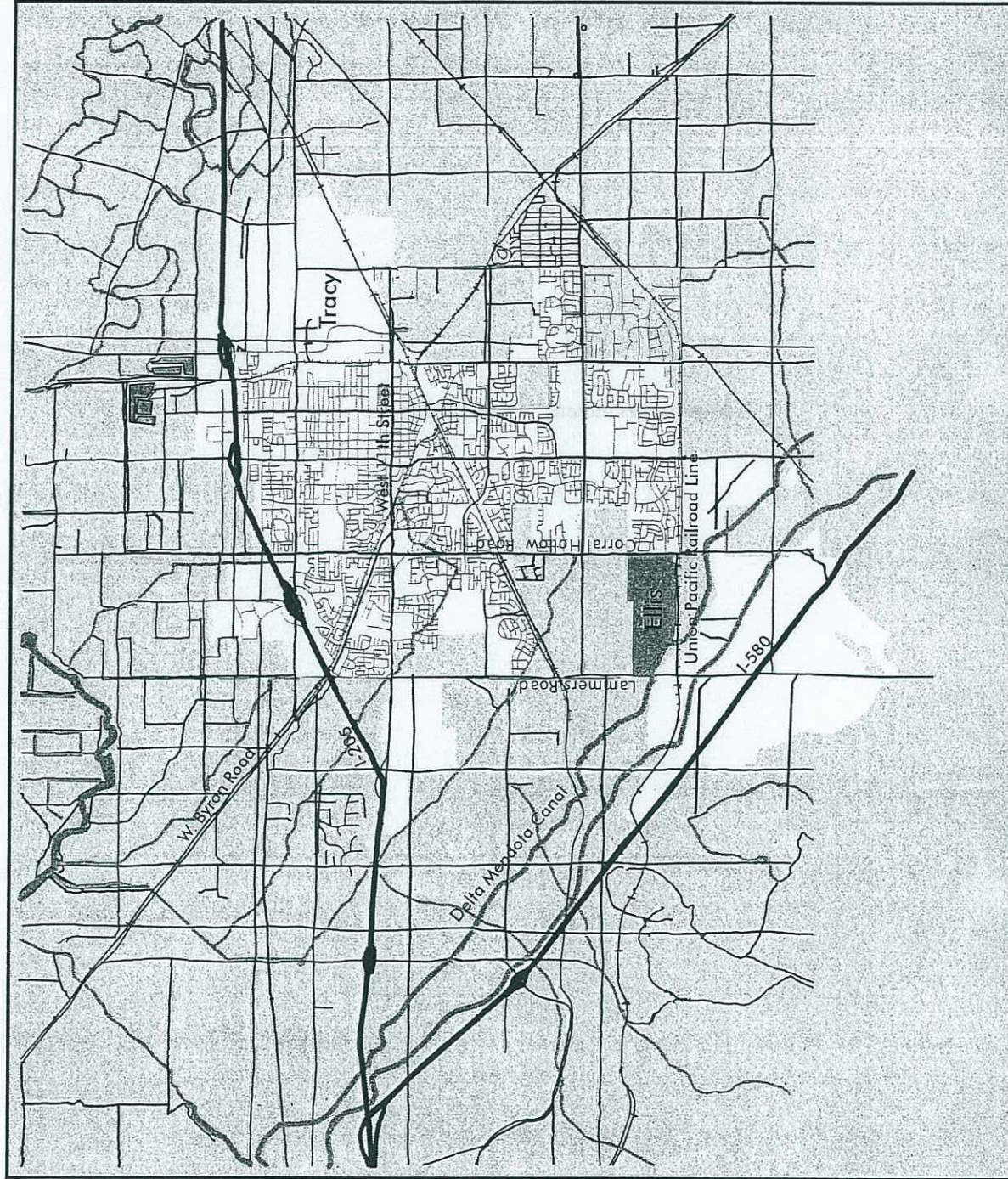
Regional Location Map

Figure 2-1



Figure 3-1
Regional Location Map
City of Tracy Ellis Specific Plan Approvals and
Development Agreement Initial Study





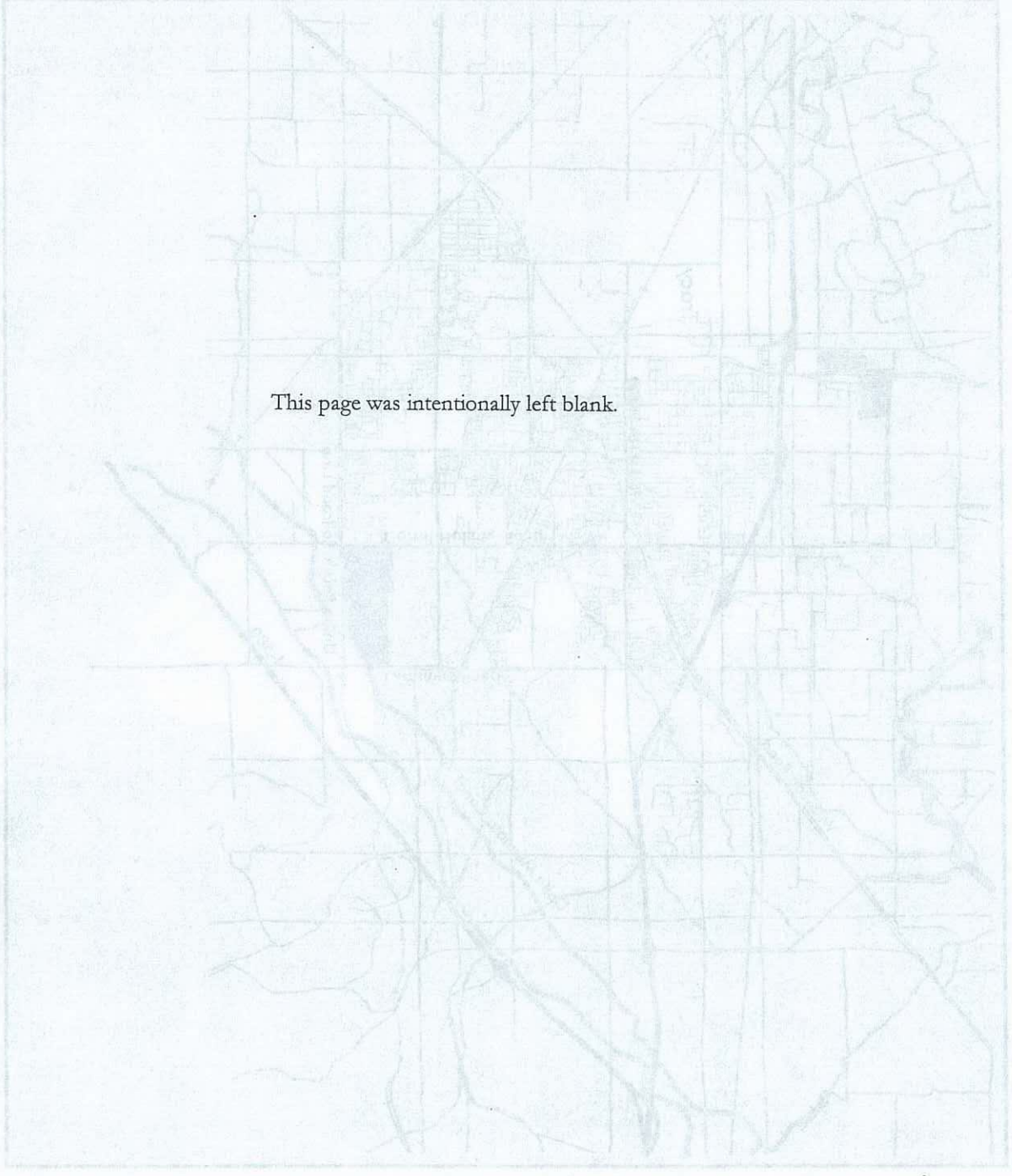
Source: Urban Design Associates, August 2006

City of Tracy Ellis Specific Plan Approvals and
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Local Vicinity Map

Figure 2-2

Figure 3-3
Local Agency Web
City Description
City of Tracy Ellis Specific Plan Approvals and Tracy Ellis Development Agreement



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2.5 Purpose of the Proposed Project

The purpose of the ESP is to provide for comprehensive planning policy, regulatory standards, and design guidelines to ensure quality future development of the ESP Plan area (TR-Ellis, as identified in the General Plan). The ESP is a document to be used by designers, developers, builders, planners, and regulators. The ESP incorporates a Pattern Book that sets forth the standards for the development of buildings on lots. Together, the ESP and Pattern Book would serve as the prime regulatory document to guide land use decisions and reinforce the City's goals and expectations for quality development of the Ellis Community. The ESP generally regulates development of lots with their land uses, parks, public landscaping, roads, and utilities, while the Pattern Book generally governs the placement of buildings on lots and the exterior architecture of buildings.

2.6 Project Characteristics

Overview

The proposed ESP is intended to implement the City of Tracy General Plan for a specific location within the City's SOI (TR-Ellis). The proposed ESP also includes a vision, assumptions, guiding principles, and objectives, as well as zoning, regulatory, design concepts and guidelines, and implementation phasing components to guide future development within the ESP area boundaries.

Objectives

The objectives of the proposed Project include the following:

- Integrate the Ellis community into the physical and social fabric of the City of Tracy, as well as existing and planned infrastructure systems.
- Develop and implement the Specific Plan in a way that allows Ellis to become a unique community with distinct character and style.
- Create a Village Center area as an integrated, multi-use Village Center. The Village Center shall promote businesses that are small, local, and neighborhood serving.
- Base development standards on the precedents found in traditional towns in northern California to ensure that Ellis becomes a place of memorable beauty and lasting urban quality.
- Create a village concept that provides a superior living environment.
- Create a family-oriented Swim Center.

2.7 Ellis Specific Plan Characteristics

The proposed Project is the execution of the City of Tracy General Plan TR-Ellis land use designation through the implementation of the Ellis Specific Plan (ESP). A Development Agreement that encompasses the Ellis Specific Plan (ESP), including a proposed 16-acre, family oriented swim center is also part of the Project.

ESP Vision

The vision of the ESP is to create a mixed-use village (with housing and commercial and recreational uses) that is a pedestrian friendly, planned development.

Land Use Concept

The ESP includes a mix of residential, commercial, office/professional, institutional, and recreational uses. The Plan will accommodate a maximum of 2,250 residential units, 180,000 square feet of commercial use, a 16-acre Swim Center, and parks; refer to Figure 2-3 (Land Use Plan) for a depiction of the proposed land use plan. The Pattern Book (design guidelines) calls for a mix of architectural styles historically popular in the Tracy area to guide the design of all buildings within the ESP area. Housing would be the predominant land use. The ESP proposes three residential neighborhoods that would have pedestrian-scaled streets, neighborhood parks, and open spaces, as well as Residential Mixed low, Residential Mixed Medium, and Residential Mixed High-density housing. In some cases, residential garages would be accessed by way of rear driving lanes (alleys). A village with commercial, office/retail, and/or civic facilities is proposed to support the residential land uses. The ESP also provides for a Swim Center currently envisioned to include a 50-Meter Olympic-sized swimming pool, recreation pool, water slide, lazy river, flow rider, sprayground area, wet play structure, sand volleyball, and picnic area on a 16-acre site. A commercial area is also proposed to support residential land uses. Proposed park, open space, and buffer areas would provide the community with both passive and active recreation opportunities.

Residential Land Uses

The goal of the residential component of the ESP is to provide a range of housing choices to the residents of the City of Tracy: Residential Mixed Low (RML), Residential Mixed Medium (RMM), and Residential Mixed High (RMH). Residential Mixed Low provides for relatively low-density housing consisting of one and two-story detached houses. Residential Mixed Medium would allow one and two-story detached houses, and two and three-story attached townhouses. Residential Mixed High housing would consist of single- and multi-family, detached houses, and attached townhouses and apartments.

Village Center

The ESP would accommodate up to 60,000 square feet of commercial uses in the Village (V). Some of the permitted commercial uses would include retail shops, art galleries, personal services, banking, professional offices, cafes, and restaurants. Permitted public uses include a post office and/or civic facilities, including administrative offices. Up to 50 residential units, would be allowed in the Village portion of the ESP.



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Land Use Plan

Figure 2-3



RBF
CONSULTING

Commercial

At the northeast corner of the Project site, there are multiple sites designated for up to 40,000 square feet of commercial uses. While a variety of commercial uses are permitted, the preferred uses include a gas station bank, a small office building, and a coffee shop.

Limited Use

The Limited Use designation is intended to allow for up to 80,000 square feet of development within the Tracy Airport Outer Approach Zone.

Parks

Improved and Passive Parks

A portion of the ESP is reserved for parks. The system is designed to serve a broad cross-section of residents by providing a diverse mix of active and passive recreational opportunities. The park areas would also be designed to be in compliance with the City of Tracy General Plan and the State of California's Quimby Act. The ESP proposes approximately 3 acres of improved and passive parks per 1,000 residents that would be distributed throughout the ESP residential neighborhoods. The parks are designed to provide a diverse set of passive and active recreational opportunities, including walking paths, playing fields, play areas, court games, and community gathering places.

Swim Center

A 16-acre site along Corral Hollow Road has been designated for a Swim Center. Uses in the Swim Center may include a competition swimming pool, recreation pool, wet play structures, recreational rivers, support facilities, volleyball, and associated parking and landscaping. The land dedication for and contribution towards the swim center is in-lieu of any community park requirements for the Ellis Program.

Landscaping

The ESP recommends a variety of landscape materials. In addition, the ESP states that each park and public open space may utilize a native plant palette if it complements the streetscape plantings and provides a for variety amongst the distribution of species. The ESP also encourages the use of drought-tolerant landscaping.

Parking

The ESP calls for parking spaces to be located on-street, in designated lots, and on private properties accessed via streets and rear lanes (alleys). Residential parking would be located on-streets, in driveways, garages, and in some cases accessed via a rear lane (alley) network. On-street visitor parking would be allowed on most streets types. The Village would be served by a series of designated lots and on-street convenience parking. Neighborhood parks would typically be served by on-street parking; however, some parking would be provided in designated off-street lots.

Phasing

The proposed ESP would be developed in three phases. Phase I would be started during Year 1, Phase II started in Years 3 & 4, and Phase III started in Years 5 & 6. All phases may at some point be under concurrent construction until buildout. The Village could be built on its own or concurrently with another phase.

Infrastructure/ Public Utilities

Procurement, development, and construction of a variety of infrastructure improvements would be required to support the proposed land uses. Necessary utilities include, but are not limited to: water supply sources, a water distribution system, a wastewater system, a storm water conveyance system, and roads and sidewalks. A Finance and Implementation Plan will be completed for the ESP that will describe the funding and phasing of necessary infrastructure improvements.

Section 3

Evaluation of Environmental Impacts

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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I. Aesthetics

Would the project:

- a. Have a substantial adverse effect on a scenic vista?

☐☐☒☐

LESS THAN SIGNIFICANT IMPACT. The Ellis Specific Plan (ESP) site is currently sparsely developed. The majority of land area is in large agricultural holdings that consist of crops and fields. Residential development occurs along Lammers Road and is characterized by large lots (five- and ten-acre parcels) that are developed with homes and accessory structures (barns, storage sheds, etc.). In addition, a tree nursery is located within the site. The City of Tracy General Plan (General Plan) does not identify any scenic vistas or scenic routes within the vicinity of the ESP site.

The proposed ESP is intended to comprehensively guide future development within the ESP site to ensure quality future development occurs. Long-term buildout of the ESP site would produce a mix of uses and a variety of building types. The ESP incorporates a Pattern Book that establishes standards for building architecture and building placement on lots, among other things. As the ESP site is not considered a scenic resource and the ESP includes development standards and design guidelines to ensure quality development of the ESP site, future development that would be facilitated by the ESP is not anticipated to result in a substantial effect on a scenic vista. Less than significant impacts would occur with implementation of the proposed ESP. Additionally, impacts associated with development of the ESP site were previously contemplated and analyzed in the General Plan EIR.

(Sources: 1, 2, 3)

- b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

☐☐☐☒

NO IMPACT. The ESP site is not located near or within an officially designated or eligible state scenic highway. Moreover, no scenic rock outcroppings or historic buildings are located on the ESP site. Future development facilitated by the proposed ESP would result in the removal of a number of ornamental trees; however, these trees are not considered scenic resources. Therefore, no impact would occur.

(Sources: 1, 2, 3)

- c. Substantially degrade the existing visual character or quality of the site and its

☐☒☐☐

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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surroundings?

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Implementation of the ESP would result in a significant alteration of the existing visual character of the ESP site. ESP construction activities would temporarily disrupt views across the site from surrounding areas. Graded surfaces, construction debris, construction equipment, and heavy truck traffic would be visible. The staging and operation of heavy equipment, graded areas, and material and debris stockpiles would result in the degradation of the aesthetic qualities of the ESP site. Short-term impacts from construction-related activities such as grading and equipment storage could also degrade short-term public views from I-580 and other surrounding roadways. Additionally, long-term buildout of the ESP site would produce a mix of uses and a variety of building types.

Implementation of the ESP would permanently alter the nature and appearance of the ESP site from active farmland to residential development. On-site structures would be visible from surrounding areas. This alteration of appearance is permanent and would continue through the life of the ESP. However, the *General Plan* land use designation for the Project site is TR-Ellis; buildout of the Project site was previously contemplated and analyzed as part of the General Plan EIR. The Project is consistent with the General Plan, and less than significant aesthetic impacts would occur. Additionally, the following General Plan mitigation measure to further reduce potential impacts related to light and glare applies to the Project:

Mitigation Measure AES-1: With submittal of a final subdivision map application, the Project Applicant shall show the temporary construction equipment staging areas within the ESP site through the duration of construction. These areas shall be clustered in order to minimize visual impacts during construction.

(Sources: 1, 2, 3)

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

☐
☒
☐
☐

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Future uses facilitated by implementation of the proposed ESP would introduce new sources of light and glare on the site and in the ESP vicinity and, in particular, to an area that currently produces little nighttime light. Sources of light may include interior and exterior lighting, street lights, security lighting, and light and glare from headlights of vehicles on the ESP site. Structures, equipment, and paved surfaces may cause glare impacts on adjacent land uses. As stated previously, the *General Plan* land use designation for the Project site is TR-Ellis; buildout of the Project site was previously analyzed as part of the General Plan EIR. Therefore, the Project is consistent with the General Plan, and less than significant impacts would occur. Additionally, the following mitigation measure to further reduce potential impacts related to light and glare applies to the Project:

Mitigation Measure AES-2: ESP design features shall be incorporated by the Project Applicant and future Project Applicants to reduce visibility of the ESP caused by light and glare. Such design features include, but are not limited to shielding sources of light from "spilling" onto adjacent areas, where feasible.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
--------------------------------------	---	------------------------------------	--------------

(Sources: 1, 2, 3)

II. Agricultural Resources

Would the project: {In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland.}

- a. *Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?*

☐ ☐ ☒ ☐

LESS THAN SIGNIFICANT IMPACT. Programs applicable to agricultural resources include the California Department of Conservation (CDC) Farmland Mapping and Monitoring Program and the California Land Conservation (Williamson) Act. The CDC Farmland Mapping and Monitoring Program identifies and designates lands that are prime farmland or farmland of statewide importance.

According to the 2002 San Joaquin County Important Farmland Map prepared by the Farmland Mapping and Monitoring Program of the California Resources Agency, the proposed ESP site is classified as Prime Farmland. Implementation of the ESP would facilitate the conversion of 320-acres of prime farmland to residential, commercial, office, and recreational uses. However, the General Plan land use designation for the Project site is TR-Ellis; buildout of the Project site was previously analyzed as part of the General Plan EIR. Therefore, the Project is consistent with the General Plan, and less than significant impacts to agricultural resources would occur. In addition, the Project Applicant will be subject to the payment of the appropriate Agricultural Mitigation Fee to the City of Tracy, in accordance with Chapter 13.28 of the Tracy Municipal Code. Less than significant impacts would occur.

(Sources: 1, 2, 3)

- b. *Conflict with existing zoning for agricultural use, or a Williamson Act contract?*

☐ ☐ ☒ ☐

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Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
--------------------------------------	---	------------------------------------	--------------

LESS THAN SIGNIFICANT IMPACT. None of the parcels that make up the ESP site are under a Williamson Act contract. However, the ESP site is currently zoned for agricultural use by San Joaquin County. As previously stated, the General Plan land use designation for the Project site is TR-Ellis; buildout of the Project site was previously contemplated and analyzed as part of the General Plan EIR. Therefore, the Project is consistent with the General Plan, and less than significant impacts related to existing zoning and Williamson Act contracts would occur.

(Sources: 1, 2, 3)

- c. Conflict with existing zoning for, or cause rezoning of forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526) or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))?

☐
☐
☐
☒

NO IMPACT. The Project site does not contain forest land. Therefore, no impacts would occur.

(Sources: 1, 2, 3)

- d. Result in the loss of forest land or conversion of forest land to non forest use?

☐
☐
☐
☒

NO IMPACT. Refer to the response to Checklist Item II.c above. No impacts would occur.

(Sources: 1, 2, 3)

- e. Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?

☐
☒
☐
☐

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Refer to the response to Checklist Items II.a. and II.b., above. In addition, the following mitigation measure applies to the Project:

Mitigation Measure AG-1:

As construction occurs along the northern Ellis boundary, fencing consistent with the ESP shall be required prior to occupancy of those structures.

(Sources: 1, 2, 3)

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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III. Air Quality

Would the project:

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



POTENTIALLY SIGNIFICANT IMPACT. The proposed ESP area is within the San Joaquin Valley Air Basin (SJVAB), which has been classified as “non-attainment” by the Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) for ozone and respirable particulate matter (PM₁₀) as defined by the Federal Clean Air Act. The San Joaquin Valley Air Pollution Control District (SJVAPCD) has been established by the state in an effort to control and minimize air pollution.

Future development facilitated by the ESP is likely to result in increased vehicular emissions during both the construction and post construction phases. Therefore, it could contribute to ozone precursors and particulate matter in the local airshed, potentially resulting in a violation of air quality standards. A violation of air quality standards by future development facilitated by implementation of the ESP would be considered a potentially significant impact. Though development of this site was contemplated in the General Plan EIR and the preparation of the City’s Sustainability Action Plan (SAP), site specific impacts will be evaluated in the EIR.

The SJVAPCD’s *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) establishes thresholds of significance for construction and operation (post-construction) phases of projects. The SJVAPCD guidelines and thresholds for determining significance will be utilized in the EIR’s assessment of site-specific construction, operational and long-term impacts. In addition, consistency with Clean Air Plan, applicable City of Tracy General Plan policies and the City of Tracy General Plan EIR will also be analyzed in the EIR.

(Sources: 1, 2, 3)

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



POTENTIALLY SIGNIFICANT IMPACT. Future development facilitated by implementation of the ESP would result in construction activities, such as site preparation, grading, excavation and other general construction activities, which could increase the amount of dust and construction emissions. Construction may create temporary impacts from fugitive dust to occupants of neighboring properties to the east and west. The San Joaquin Valley Air Basin is currently in non-attainment for particulate matter (dust) less than 10 microns in diameter (PM₁₀). Under the long-term, the operational activities of future development facilitated by the ESP would generate traffic from residential, commercial/office, and activities within the ESP site and would emit additional pollutants along local roadways (including ozone precursors), adding to the regional burden of pollution within the larger air basin. The San Joaquin Valley Air Basin is currently in non-attainment for ozone. These issues will be evaluated in the EIR using SJVAPCD’s *Guide for Assessing and Mitigating Air Quality Impacts*.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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(Sources: 1, 2, 3)

- c. Result in a cumulatively considerable net increase any criteria pollutant for which the project region is non – attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?



POTENTIALLY SIGNIFICANT IMPACT. Implementation of the ESP has the potential to increase PM₁₀ and ozone precursors. Because the San Joaquin Valley Air Basin is currently in non-attainment for PM₁₀ and ozone, the proposed ESP could contribute to cumulative air quality impacts. Potentially significant cumulative air quality impacts will be evaluated in the EIR using SJVAPCD's *Guide for Assessing and Mitigating Air Quality Impacts*.

(Sources: 1, 2, 3)

- d. Expose sensitive receptors to substantial pollutant concentrations?



POTENTIALLY SIGNIFICANT IMPACT. Construction activities, including excavation, grading, demolition, vehicle travel on unpaved surfaces, and vehicle and equipment exhaust may generate dust that could potentially affect nearby sensitive receptors, such as the residential communities located to the east and west of the ESP site. Air quality impacts on sensitive receptors will be analyzed in the EIR.

(Sources: 1, 2, 3)

- e. Create objectionable odors affecting a substantial number of people?



NO IMPACT. The proposed ESP would facilitate the development of residential, commercial, office, and recreational uses. None of the proposed land uses would create objectionable odors that would affect a substantial number of people. No impacts would occur as a result of the proposed ESP.

(Sources: 1, 2, 3)

IV. Biological Resources

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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- a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

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POTENTIALLY SIGNIFICANT IMPACT. The ESP site is primarily comprised of agricultural lands. Agricultural lands provide breeding, foraging, and/or sheltering habitat for several animal species, including special-status species. Therefore, future development facilitated by the ESP could result in direct and indirect impacts to special-status species. Impacts to special-status species are considered significant and will require further analysis in the EIR. It should be noted that, as stated in the General Plan EIR, all development projects within City limits are required to meet all Federal, State, and local regulations for habitat and species protection (General Plan Objective OSC-1.1). Additionally, the ESP site falls under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Though development of this site was contemplated in the General Plan EIR site specific impacts to biological resources will be evaluated in the EIR. Further analysis will be conducted in the EIR.

(Sources: 1, 2, 3)

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

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LESS THAN SIGNIFICANT IMPACT. One irrigation ditch, totaling approximately 1.6 acres, or less than 1 percent of the site, is located at the northern end of the site. Additionally, three agricultural tail water irrigation ponds are located within the ESP boundaries. These features have the potential to contain riparian habitat. As stated in the General Plan Supplemental EIR, not all sensitive species, especially in conjunction with wetland habitats, are covered by the SJMSCP. Regardless, State and federal requirements for wetlands mitigation as outlined in the Clean Water Act must be met prior to project approval. Any development project proposed in a wetland area would under-go CEQA review for biological resources, and review by CDFG, in order to determine if additional mitigation measures are required. For example, a detailed wetland delineation and verification by the Corps would be required to determine the extent of jurisdictional wetlands on sites where modifications are proposed and to provide the basis for mitigation. Therefore, less than significant impacts to wetlands are expected to occur.

(Sources: 1, 2, 3)

- c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited

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to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

LESS THAN SIGNIFICANT IMPACT. Wetlands are considered sensitive habitats because by nature they are fragile, and because of their decreasing distribution in the region and throughout the state. In addition, they provide flood control, pollution control, habitat for native plants and animals, and aesthetic and recreational amenities. Three agricultural tail water irrigation ponds and one irrigation ditch are located within the ESP boundaries that contain water only during irrigation events. All of the ponds have been excavated on dry, level land to function as irrigation holding ponds or as irrigation water runoff basins. There is no evidence that these areas are being supported by any other hydrology. Given these characteristics, these features are not considered wetlands. Additionally, as stated in the General Plan EIR, all development projects within City limits are required to meet all Federal, State, and local regulations for habitat and species protection (General Plan Objective OSC-1.1). Additionally, the ESP site falls under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Therefore, less than significant impacts are anticipated.

(Sources: 1, 2, 3)

- d. *Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

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LESS THAN SIGNIFICANT IMPACT. The ESP site is located in a developing area adjacent to the City of Tracy. Agricultural lands and open space are located to the north and south of the ESP site. Given the Delta Mendota Canal is located adjacent to the site and there is neighboring open space, it is reasonable to assume that the site may be used for the movement of wildlife. However, it should be noted that, as stated in the General Plan EIR, all development projects within City limits are required to meet all Federal, State, and local regulations for habitat and species protection (General Plan Objective OSC-1.1). Additionally, the ESP site falls under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Therefore, less than significant impacts would occur.

(Sources: 1, 2, 3)

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

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LESS THAN SIGNIFICANT IMPACT. No protected trees exist within the Project site. The City of Tracy has a tree ordinance (Tracy Municipal Code [T.M.C.] Chapter 7.08) that protects "street trees" planted within rights-of-way or planting easements. However, the City's tree ordinance does not cover trees on agricultural lands, and therefore, impacts are considered to be less than significant.

(Sources: 1, 2, 3)

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

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LESS THAN SIGNIFICANT IMPACT. The ESP site is located within the jurisdiction of the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The SJMSCP is a 50-year plan aimed at preserving habitat for a multitude of species found in San Joaquin County. Administered by SJCOG, Inc., the plan is funded through grants and developer fees that are used to acquire easements or land in order to protect habitat. Participation in the SJMSCP is voluntary for both local jurisdictions and project proponents. Only agencies adopting the SJMSCP will be covered by the SJMSCP. On February 6, 2001, the Tracy City Council adopted the SJMSCP by means of Resolution 2001-050. As noted in the Ellis Specific Plan (Section 2.4), the Project Applicant would work with the City to implement the SJMSCP as it relates to implementation of the Ellis Specific Plan. The Project Applicant would be required to pay fees at time of ground disturbance permits (such as grading and/or building permits) as set forth in the Plan to implement recommendations (called "minimization measures") as required by an SJCOG appointed qualified biologist on a case-by-case basis throughout the Ellis Specific Plan Area prior to ground disturbance of that area. These standard procedures apply to all projects, including the Ellis Specific Plan, that are covered under the SJMSCP. Less than significant impacts would occur in this regard.

(Sources: 1, 2, 3)

V. Cultural Resources

Would the project:

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

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NO IMPACT. Historical resources include any resource listed in or determined to be eligible for listing in the California Register of Historical Resources, a resource included in a local register of historical resources, or any object building, structure, site, area, place, record, or manuscript that a lead agency determines to be historically significant. There are no buildings, structures, facilities, or other resources within the ESP site that would be considered historically significant. Therefore, future development facilitated by the ESP would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5. No impacts would occur.

(Sources: 1, 2, 3)

- b. Cause a substantial adverse change in the

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significance of an archaeological resource pursuant to §15064.5?

LESS THAN SIGNIFICANT IMPACT. The Tracy Planning Area likely contains undiscovered archaeological and paleontological sites, including human remains, especially in undeveloped areas. Implementation of the ESP would result in the development of one of these areas, which may include grading, ground removal, and other disturbances. These actions could result in a potentially significant impact to paleontological and archaeological resources. Mitigation was identified in the General Plan EIR to reduce potentially significant impacts to archaeological and paleontological resources to a less than significant level. Future development facilitated by the ESP would be required to comply with the mitigation identified in the General Plan EIR. Therefore, less than significant impacts would occur.

(Sources: 1, 2, 3)

- c. *Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

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LESS THAN SIGNIFICANT IMPACT. There are no known paleontological resources or unique geologic features within the proposed ESP site. Grading and earth excavation during future construction of development facilitated by the implementation of the ESP could result in the discovery of unknown resources. If paleontological resources and/or unique geologic features are uncovered as a result of ESP implementation, adherence to mitigation measures identified in the General Plan EIR would reduce potential impacts to less than significant levels.

(Sources: 1, 2, 3)

- d. *Disturb any human remains, including those interred outside of formal cemeteries?*

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LESS THAN SIGNIFICANT IMPACT. There are no known human remains buried within the ESP site. However, buried remains could be present and unearthed as a result of excavation and grading associated with future development facilitated by the ESP. Implementation of mitigation measures identified in the General Plan EIR would reduce potential impacts on human remains to a less than significant level.

(Sources: 1, 2, 3)

VI. Geology and Soils

Would the project:

- a. *Expose people or structures to potential substantial adverse effects, including the risk of*

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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loss, injury, or death involving:

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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NO IMPACT. The ESP area is not located in a designated Alquist-Priolo Earthquake Fault Zone. Therefore, the probability of ground surface rupture at the site due to displacement along a fault is considered remote. No impacts would occur as a result of the implementation of the ESP.

(Sources: 1, 2, 3)

- Strong seismic ground shaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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LESS THAN SIGNIFICANT IMPACT. The ESP site is not located within an Earthquake Fault Zone, as defined by the State Geologist. The nearest mapped active fault (Carnegie/Corral Hollow) is located approximately eight miles southwest of the site. However, due to the proximity of the ESP site to numerous inactive and active faults in the surrounding region, the ESP site has the potential to experience groundshaking. The impact of groundshaking to people or property caused by seismic activity on nearby faults would be increased as a result of site development. Therefore, to minimize potential damage to the proposed structures caused by groundshaking, all construction would comply with the latest California Building Code standards, as required by the City of Tracy Municipal Code 9.04.030. Implementation of the California Building Code standards, which include provisions for seismic building designs, would ensure that impacts associated with groundshaking would be less than significant.

(Sources: 1, 2, 3)

- Seismic related ground failure, including liquefaction?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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LESS THAN SIGNIFICANT IMPACT. The probability of liquefaction near the surface of the site is low when evaluated against existing site conditions, including topography, soil types and presence of groundwater. The ESP site is characterized by interbedded layers and lenses of gravel, sand and clay with intermixes of these soils. The water table at the ESP site is approximately 60 to 70 feet in depth. Liquefaction more often occurs in earthquake-prone areas underlain by young (Holocene age) alluvium where the groundwater is shallower than 50 feet below the ground surface. The ESP site is not located within an Earthquake Fault Zone, as defined by the State Geologist. The nearest mapped active fault (Carnegie/Corral Hollow) is located approximately eight miles southwest of the site. This geologic condition, in conjunction with a low water table, indicates that the probability of liquefaction near the surface of the site is very low. The Safety Element

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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of the *General Plan* includes Objective SA-1.1, Policy 1, which requires that geotechnical engineering studies be undertaken for any development in areas where potentially serious geologic risks exist. The implementation of this policy would reduce the potential risk of liquefaction. Any potential impact from liquefaction is therefore considered to be less than significant.

(Sources: 1, 2, 3)

➤ *Landslides?* ☐ ☐ ☐ ☒

NO IMPACT. The ESP site and its surroundings are relatively flat and do not have any steep slopes or hillsides that would be susceptible to landslides. Therefore, the potential for landslides is considered to be low. No impacts would occur as a result of the implementation of the ESP.

(Sources: 1, 2, 3)

b. *Result in substantial soil erosion or the loss of topsoil?* ☐ ☒ ☐ ☐

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Impacts of ESP construction include clearing existing agriculture and potentially demolishing one residence and one accessory structure for the building of structures, roads, landscaped areas and similar permanent improvements. During the construction preparation process, existing vegetation would be removed to grade and compact the site, as necessary. As construction occurs, these exposed surfaces could be susceptible to erosion from wind and water. Effects from erosion include impacts on water quality and air quality. Risks associated with erosive surface soils can be reduced by using appropriate controls during construction and properly revegetating exposed areas. Additionally, the following mitigation measures to further reduce potential impacts related to soil erosion apply to the Project:

Mitigation Measure GEO-1: The Ellis Specific Plan requires the implementation of control measures set forth under Regulation VIII of the San Joaquin Valley Air Pollution Control District (SJVAPCD) Fugitive PM₁₀ Prohibition. The following mitigation measures, in addition to those required under Regulation VIII of the SJVAPCD, shall be implemented by the Project Applicant/future subsequent Project Applicants to reduce fugitive dust emissions:

- Water previously disturbed exposed surfaces (soil) a minimum of three-times/day or whenever visible dust is capable of drifting from the site or approaches 20 percent opacity.
- Water all haul roads (unpaved) a minimum of three-times/day or whenever visible dust from such roads is capable of drifting from the site or approaches 20 percent opacity.
- All access roads and parking areas shall be covered with asphalt-concrete paving or water sprayed regularly.

No Impact	Less Than Significant Impact	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Additionally, refer to Mitigation Measure HYD-2 of this Initial Study.

(Sources: 1, 2, 3)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c. <i>Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

LESS THAN SIGNIFICANT IMPACT. The ESP site and its surroundings are relatively flat and do not have any steep slopes or hillsides that would be susceptible to landslides or lateral spreading. Therefore, impacts are anticipated to be less than significant.

(Sources: 1, 2, 3)

- d. *Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?*

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LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Expansive soils are those that undergo volume changes as moisture content fluctuates; swelling substantially when wet or shrinking when dry. Soil expansion can damage structures by cracking foundations, causing settlement and distorting structural elements. Expansion is a typical characteristic of clay-type soils. Geotechnical studies prepared for the ESP noted the existence of potentially expansive clay near the surface of the site. Laboratory testing indicated that the soils exhibited moderate to high shrink/swell potential with variations in moisture content.

Expansive soils shrink and swell in volume during changes in moisture content, such as a result of seasonal rain events, and can cause damage to foundations, concrete slabs, roadway improvements, and pavement sections. Implementation of the following mitigation measures would reduce potential impacts related to foundation support.expansive soils to a less than significant level:

Mitigation Measure GEO-2:

Prior to approval of improvement plans, the project proponent shall conduct a design-level geotechnical study, which shall consider the recommendations in the existing geotechnical studies prepared for each neighborhood in the ESP and additional recommendations as needed. The study shall specifically address whether expansive soils are present in the development area and include measures to address these soils where they occur. The recommendations from the geotechnical study shall be incorporated into the design of roadway and infrastructure improvements as well as foundation and building design for the review and approval of the City Engineer.

(Sources: 1, 2, 3)

- e. *Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for*

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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the disposal of wastewater?

NO IMPACT. The future development facilitated by the ESP would connect to the City of Tracy's municipal waste water system. No septic systems or alternative wastewater systems are proposed. Therefore, no adverse impacts would occur as a result of the proposed ESP.

(Sources: 1, 2, 3)

VII. Hazards and Hazardous Materials

Would the project:

- a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

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LESS THAN SIGNIFICANT IMPACT. Implementation of the proposed ESP would facilitate a mixed-use development consisting of residential, commercial, office, and recreational uses. Future development facilitated by the ESP would use relatively small quantities of hazardous materials, such as household cleaners, pesticides, and fertilizers. The proper transport, use, and disposal of such materials would not create a significant hazard to the public or the environment. Therefore, less than significant impacts would occur as a result of the proposed ESP.

(Sources: 1, 2, 3)

- b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

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POTENTIALLY SIGNIFICANT IMPACT. Because the ESP site has been intermittently used for agricultural production for decades, on-site soils may contain varying levels of pesticides and other chemicals. Although it is not anticipated that widespread undiscovered contamination exists on-site, the potential remains that contaminated soils or other materials may be discovered during site grading and construction activities. Due to the possible presence of hazardous materials, the potential for the implementation of the proposed ESP to result in upset and/or accidents involving the release of hazardous materials into the environment exists. However, the following mitigation would reduce potential impacts associated with hazards to a less than significant level:

Mitigation Measure HAZ-1:

Based on the results of the Phase I analysis, prior to ground disturbing activities and issuance of grading permits, soil sampling shall be conducted by a Registered Environmental Assessor with Phase II/III experience to determine the potential for subsurface contamination associated with staining. Should any subsurface hazardous materials be found and contamination levels exceed federal or state human health screening levels

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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for residential areas or exceed hazardous waste limits, the soil shall be treated in accordance with standards of the City of Tracy and the California Department of Toxic Substances Control. The Registered Environmental Assessor shall prepare a Soil Management Plan in consultation with the City of Tracy and the California Department of Toxic Substances Control and the soil shall be treated accordingly.

Mitigation Measure HAZ-2: Interiors of individual on-site structures shall be visually inspected prior to demolition or renovation activities by a qualified inspector. Should hazardous materials be encountered with any onsite structure, the materials shall be tested and properly disposed of in accordance with state and federal regulatory requirements.

Mitigation Measure HAZ-3: Prior to the issuance of grading permits, onsite wells shall be properly closed and abandoned pursuant to state and federal guidelines.

Mitigation Measure HAZ-4: The exact location of petroleum pipelines shall be defined prior to the commencement of construction. Any activities occurring within the petroleum pipeline easement should be conducted pursuant to applicable CPUC guidelines and regulations.

Mitigation Measure HAZ-5: Prior to the issuance of grading permits, the exact location and extent of septic tanks and leach fields shall be determined. Once located, septic tanks shall be removed and properly disposed of at an approved landfill facility.

Mitigation Measure HAZ-6: During demolition of structures, paint waste shall be evaluated independently from building materials if paint is separated from building materials during demolition to determine whether lead based paint is present. Waste shall be evaluated independently from the building material to determine its proper management. Lead-based paint removal shall be performed in accordance with California Code of Regulations Title 8, Section 1532.1, which provides for exposure limits, exposure monitoring, respiratory protection, and mandates good worker practices by workers exposed to lead.

Mitigation Measure HAZ-7: Any transformers shall be relocated during site construction/demolition should be constructed under the purview of the local utility purveyor to identify proper handling procedures regarding potential PCBs.

Two existing Pacific Gas and Electric (PG&E) pipelines traverse the ESP site in a northwesterly and southeasterly direction, bisecting the ESP site in a diagonal manner. These existing pipelines have the potential to create a hazard to future land uses located onsite. The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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project. Therefore, while an analysis of this potential impact may not need to be included in the EIR pursuant to CEQA, it is being provided for informational purposes.

(Sources: 1, 2, 3)

- c. *Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

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NO IMPACT. The proposed ESP site is not located within one-quarter mile of an existing or proposed school. Therefore, no impacts would occur as a result of the proposed ESP.

(Sources: 1, 2, 3)

- d. *Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

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LESS THAN SIGNIFICANT IMPACT. Public records identified no listed regulatory sites within ESP site boundaries and 11 listed regulatory sites within a radius of one mile of the ESP site. The City of Tracy General Plan requires that developers "conduct the necessary level of environmental investigation prior to Project approval to ensure that redevelopment of the site would not affect the environment or the health or safety of future property owners (Objective SA-4.1, P2). Compliance with this policy would reduce the potential impact to a less-than-significant level." Any existing hazardous materials located offsite have the potential to create a hazard to future land uses located onsite. The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project. Therefore, while an analysis of this potential impact may not need to be included in the EIR pursuant to CEQA, it is being provided for informational purposes. Less than significant impacts would occur.

(Sources: 1, 2, 3)

- e. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?*

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POTENTIALLY SIGNIFICANT IMPACT. Tracy Municipal Airport (TMA) is located immediately southeast of the ESP site across Corral Hollow Road. The airport is a general aviation facility owned and operated by the City of Tracy. TMA can accommodate, and currently serves, private single- and twin-engine propeller aircraft, as well as helicopters. An approach path for a runway extends from TMA to the northwest

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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into the ESP site. The existing TMA has the potential to create a hazard to future land uses located onsite. The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project. Therefore, while an analysis of this potential impact may not need to be included in the EIR pursuant to CEQA, it is being provided for informational purposes. Due to the location of an airport immediately southeast of the ESP site further analysis will be included in the EIR to characterize potential safety impacts.

(Sources: 1, 2, 3)

- f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

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NO IMPACT. The ESP site is not located in the vicinity of a private airstrip. Therefore, no impacts would occur as a result of the proposed ESP.

(Sources: 1, 2, 3)

- g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

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POTENTIALLY SIGNIFICANT IMPACT. Implementation of the proposed ESP would result in an increase in traffic levels on surface streets in the vicinity of the ESP site. This may affect emergency response and/or emergency evacuation in the area. Further analysis is required in the EIR to evaluate the proposed ESP's potential impact on emergency response and emergency evacuation plans.

(Sources: 1, 2, 3)

- h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

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LESS THAN SIGNIFICANT IMPACT. Wildland fire risks stem from such factors as fuel loading (vegetation), fire weather (winds, temperatures, humidity levels and fuel moisture contents) and topography (degree of slope). To quantify potential risks, the California Department of Forestry (CDF) has developed a Fire Hazard Severity Scale using these criteria. No part of the Tracy Planning Area has a High wildland fire hazard designation. Some lands on the southwest side of the City are designated as having a Moderate wildland fire hazard. It also adjoins other undeveloped lands. However, no part of the ESP site or adjoining properties are shown by the *General Plan EIR* as being in this Moderate hazard area.

A number of design standards, such as road standards for fire equipment access; signage identifying streets, roads, and buildings; minimum water supply reserves for emergency fire use; fuel breaks and greenbelts;

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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clearances around structures; and emergency preparedness protocol and procedures are required by the City of Tracy in order to reduce wildfire hazards. These characteristics of the proposed ESP would reduce fire hazards by substantially improving the ability of fire crews and engines to access the area and to protect proposed structures from brush fires. As standard practice, the South County Fire Authority (SCFA) sets forth policies that would be enforceable within the ESP site to ensure that all construction plans and development proposals use fire protection measures that ensure fire protection-related impacts of development would be less than significant. These policies include the use of fire resistant plants, groundcover, and roofing materials, and clearing areas around structures of potential fuel. New development would also be required to satisfy fire flow and hydrant standards established by the City to facilitate fire fighting in the event of a fire. The *General Plan* also requires that the SCFA train regularly for both urban and wildland fire fighting conditions. The City is also required to maintain an up to date map of areas vulnerable to wildland fires. These features would reduce impacts to a less than significant level.

(Sources: 1, 2, 3)

VIII. Greenhouse Gas Emissions

Would the project:

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

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POTENTIALLY SIGNIFICANT IMPACT. Though development of this site was contemplated in the General Plan EIR and site specific impacts will be evaluated in the EIR. In addition, the City prepared a Sustainability Action Plan (SAP) to further reduce potential greenhouse gas emissions. However, the Project has the potential to generate greenhouse gas emissions. Therefore, the EIR will further analyze potential impacts related to greenhouse gas emissions.

(Sources: 1, 2, 3)

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

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POTENTIALLY SIGNIFICANT IMPACT. Refer to discussion VIII (a), above. The EIR will further analyze potential impacts related to greenhouse gas emissions.

IX. Hydrology and Water Quality

Would the project:

- a. Violate any water quality standards or waste discharge requirements?

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		Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The proposed ESP would result in the conversion of existing agricultural lands to urban uses, thereby potentially increasing the generation of typical urban water contaminants from the area. In addition, the proposed ESP could result in greater vehicular use of nearby roadways, which could potentially increase contaminants that would be carried in runoff and discharged into receiving waters. Moreover, grading and excavation associated with future development facilitated by the ESP could result in deposition of sediment on street surfaces. A Final Storm Drainage Technical Report was prepared for the Project in January 2011. The report summarizes the results of the storm drainage analysis performed to determine the master plan drainage infrastructure needed to serve the project. The report also identifies storm water runoff to be generated by the Project. The following mitigation measures to reduce potential impacts to a level of less than significant applies to the Project:

Mitigation Measure HYD-1:

Prior to approval of Final Subdivision Maps, the Project Applicant shall provide a detailed hydrology report that specifies the expected stormwater volumes, projected peak storage capacity of temporary basins, and percolation characteristics of soil. The hydrology report shall demonstrate that adequate stormwater conveyance and capacity is available in either the region, onsite or offsite basins, depending on the chosen option. The hydrology report would be subject to review and approval by the City Engineer.

Mitigation Measure HYD-2:

Prior to issuance of a grading or building permit, whichever occurs first, and following the preparation of ESP site grading plan, the Project Applicant shall demonstrate to the City of Tracy compliance with NPDES General Construction Activities Storm Water Permit Requirements established by the Clean Water Act (CWA), including the preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall identify specific types and sources of stormwater pollutants, determine the location and nature of potential impacts, and specify appropriate control measures to eliminate any potentially significant impacts on receiving water quality from stormwater runoff. The SWPPP shall comply with the most current standards established by the Central Valley RWQCB. Best Management Practices shall be selected from a menu according to site requirements and shall be subject to approval by the City Engineer and Central Valley RWQCB.

Mitigation Measure HYD-3:

Prior to issuance of a grading or building permit, whichever occurs first, and following the preparation of the ESP site grading plan, the Project Applicant shall submit to the City Engineer for review a draft copy of the Notice of Intent (NOI) and SWPPP. After approval by the City, the NOI and SWPPP shall be sent to the State Water Resources Control Board for approval.

Mitigation Measure HYD-4:

After Project completion, the Project Applicant or successor shall properly maintain parking lots and other common paved areas, by

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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sweeping or other appropriate means, to prevent the majority of litter from washing into storm drains.¹

(Sources: 1, 2, 3)

- b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

☒ ☐ ☐ ☐

POTENTIALLY SIGNIFICANT IMPACT. The ESP would accommodate a maximum of 2,250 residential units plus 180,000 square feet of commercial uses. Pursuant to the requirements of SB 610, as adopted in the California Water Code as Sections 10910-10915, a Water Supply Assessment (WSA) will be performed for the proposed ESP. The potential for the development intensity facilitated by the ESP to impact groundwater supplies will be evaluated in the EIR.

(Sources: 1, 2, 3)

- c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off- site?

☐ ☒ ☐ ☐

LESS THAN SIGNIFICANT WITH MITIGATION WITH MITIGATION INCORPORATED.

Implementation of the proposed ESP would not alter the course of a stream or river. In addition, the proposed site storm drainage system would be constructed to follow the existing ground slope of the ESP site. However, future development facilitated by the ESP would involve vegetation removal, grading, earth excavation, and the construction of roads, sidewalks, and buildings. These activities would alter the existing drainage patterns of the ESP site and would increase the potential for erosion and/or siltation. Such increases in runoff could potentially cause increases in erosion, and/or siltation, of the ESP site. Implementation of standard erosion control procedures (SWPPP) would be required to minimize the risk. Implementation of Mitigation Measures HYD-1 through HYD-4 would reduce the potential impacts related to erosion and siltation by requiring that a hydrology report demonstrate adequate conveyance and capacity for surface runoff, and that Best Management Practices (BMPs) be implemented that would slow runoff flows and allow sediment to settle. With implementation of Mitigation Measures in addition to Project design features, such as Project-specific BMPs and green building design considerations would reduce potential drainage and erosion impacts to a less than significant level.

¹ Proper maintenance of parking lots and other paved areas can eliminate the majority of litter washing into storm drains and thus, entering local waterways. Regular sweeping is a simple and effective BMP aimed at reducing the amount of litter in public waterways.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant	No Impact
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(Sources: 1, 2, 3)

- d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river; or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

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LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Implementation of the proposed ESP would not alter the course of a stream or river. In addition, the proposed site storm drainage system would be constructed to follow the existing ground slope of the ESP site. However, future development facilitated by the ESP would involve vegetation removal, grading, earth excavation, and the construction of roads, sidewalks, and buildings. These activities would alter the existing drainage patterns of the ESP site and would increase the potential for surface runoff which could result in flooding. Implementation of Mitigation Measures HYD-1 through HYD-4 would reduce potential impacts on flooding by requiring that a hydrology report demonstrate adequate conveyance and capacity for surface runoff, and that BMPs be implemented that would slow runoff flows, avoid debris accumulation, and provide opportunities for recharge. With implementation of Project design features, in addition to compliance with the requirements of the General Permit and with Chapter 9.52, Floodplain Regulations, of the City of Tracy Municipal Code, and implementation of Mitigation Measures HYD-1 through HYD-4 would reduce potential impacts on flooding to a less than significant level.

(Sources: 1, 2, 3)

- e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

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LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. As stated in response to Checklist Item VIII.c, above, future development facilitated by implementation of the ESP would result in changes to the absorption rates, drainage patterns, and the corresponding rate and amount of surface runoff of the existing ESP site. New development would be required to construct adequately sized storm drainage systems that would connect to the City's existing storm drainage system that conveys stormwater flows. Without the final site plan designs, including information on the areas to be covered by impermeable or permeable surfaces (e.g. permeable pavers and landscaping), this analysis cannot accurately quantify the change in absorption rates and stormwater volume and rate. Implementation of Mitigation Measures HYD-1 through HYD-4 would reduce potential impacts on drainage systems or polluted runoff by requiring that a hydrology report demonstrate adequate conveyance and capacity for surface runoff, and that BMPs be implemented that would slow runoff flows, avoid debris accumulation and allow sediments to settle. Therefore, with implementation of Mitigation Measures HYD-1 through HYD-4 above, impacts on storm drainage systems or polluted runoff is considered to be less than significant level.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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(Sources: 1, 2, 3)

- f. Otherwise substantially degrade water quality?

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LESS THAN SIGNIFICANT IMPACT. Refer to Checklist Items VIII.a and VIII.c above.

(Sources: 1, 2, 3)

- g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

☐☐☐☒

NO IMPACT. The ESP site is not within the 100-year flood zone.

(Sources: 1, 2, 3)

- h. Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?

☐☐☐☒

NO IMPACT. The ESP site is not within the 100-year flood zone.

(Sources: 1, 2, 3)

- i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

☐☐☐☒

NO IMPACT. The ESP is not located within the vicinity of a dam or a dam inundation area. The future development would not expose people or structures to risks associated with flooding caused by the failure of a dam or levee. No impact would occur.

(Sources: 1, 2, 3)

- j. Inundation by seiche, tsunami, or mudflow?

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NO IMPACT. A seiche is the tide-like rise and drop of water in a closed body of water caused by earthquake-induced seismic shaking or strong winds. A tsunami is a series of large waves generated by a strong offshore earthquake or volcanic eruption. The ESP site is not located in the vicinity of any major source of surface water; therefore, seiche and tsunami waves would not be a threat to the area. The ESP area is predominantly flat and does not have any steep slopes or hillsides that would be susceptible to mudflows or landslides. Therefore, no impacts would occur.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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(Sources: 1, 2, 3)

X. Land Use and Planning

Would the project:

- a. *Physically divide an established community?*

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NO IMPACT. The proposed ESP site is used primarily for agricultural purposes and contains one home on the site. The site is adjacent to an existing residential neighborhood to the east and rural residential development to west and is currently designated as TR-Ellis, which allows residential development to occur onsite. The ESP would not divide an established community. No further analysis is required.

(Sources: 1, 2, 3)

- b. *Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?*

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LESS THAN SIGNIFICANT IMPACT. The proposed ESP site is designated as TR-Ellis on the General Plan Land Use Map. The new zoning would be established with annexation and rezoning as described in the Specific Plan. The proposed Project includes a General Plan Amendment that would further facilitate the proposed residential, commercial, and open space uses to occur onsite. Therefore, the proposed Project would be consistent with the existing land use plans. Less than significant impacts would occur.

(Sources: 1, 2, 3)

- c. *Conflict with any applicable habitat conservation plan or natural community conservation plan?*

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LESS THAN SIGNIFICANT IMPACT. Refer to Checklist Item IV.f.

(Sources: 1, 2, 3)

XI. Mineral Resources

Would the project:

- a. *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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NO IMPACT. The main mineral resources found in San Joaquin County, and the Tracy Planning Area, are sand and gravel (aggregate), which are primarily used for construction materials like asphalt and concrete. Within the Tracy Planning Area aggregate materials are found in the Corral Hollow alluvial fan deposits south of Tracy. The City of Tracy has an adopted Aggregate Mining Overlay zone, which has been approved by the State Division of Mines and Geology (Resolution 2000-12 of State Division of Mines and Geology). The Overlay Zone establishes that the area north of Linne Road would allow for urban development, while area south of Linne Road would be available for aggregate mining. Presently, there are five aggregate extraction sites operating within the Tracy Planning Area.

In order to protect aggregate land and mitigate conflicts between mining activities and urban uses, the Tracy General Plan designates lands with production quality mineral reserves as Aggregate in the southern portion of Tracy. Of the area classified by the State Division of Mines and Geology as having potentially significant mineral deposits, the City has designated the bulk of this area as Aggregate in the General Plan. This includes permitted mining uses on ten acres within the City limits and on 1,030 acres in the SOI. Some additional areas identified as having potentially significant aggregate deposits are designated as Industrial in the General Plan. As noted above, the City and the State have agreed that identified areas south of Linne Road can be used for aggregate uses. The proposed ESP site does not fall within areas identified as having potentially significant aggregate deposits; therefore, no impacts would occur.

(Sources: 1, 2, 3)

- b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

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NO IMPACT. See discussion above under Checklist Item X.a.

(Sources: 1, 2, 3)

XII. Noise

Would the project result in:

- a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

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POTENTIALLY SIGNIFICANT IMPACT. Future development within the ESP site would be exposed to traffic noise from Corral Hollow Road, Lammers Road, and potentially Linne Road. Other potential sources of noise would derive from the adjacent railroad lines to the south, as well as small aircraft and helicopters traveling to and from the Tracy Municipal Airport. Potential exposure to noise levels in excess of standards adopted by the City of Tracy General Plan is a potentially significant impact. These existing noises have the potential to expose future land uses located onsite to excessive noise levels. The purpose of an EIR

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project. Therefore, while an analysis of this potential impact may not need to be included in the EIR pursuant to CEQA, it is being provided for informational purposes. Though development of this site was contemplated in the General Plan EIR and site specific impacts will be evaluated in the EIR. The EIR will analyze the potential noise impacts on the ESP, and determine whether ESP noise will exceed established noise standards.

(Sources: 1, 2, 3)

- b. *Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?*

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POTENTIALLY SIGNIFICANT IMPACT. The proposed land uses, including residential, commercial, office, and recreational, are not land uses that are normally associated with excessive noise levels or vibrations. Furthermore, the ESP does not propose any underground development such as tunnels or parking garages that might contribute to groundborne vibration or noise. However, the ESP would place residential structures adjacent to Union Pacific Railroad lines and Corral Hollow Road, which receives truck traffic from the industrial uses located southeast of the area. Thus, future residential uses would be exposed to noise and vibration from rail and truck traffic. These existing noises have the potential to expose future land uses located onsite to excessive groundbourne vibration and noise levels. The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project. Therefore, while an analysis of this potential impact may not need to be included in the EIR pursuant to CEQA, it is being provided for informational purposes. Though development of this site was contemplated in the General Plan EIR, specific impacts will be evaluated in the EIR.

(Sources: 1, 2, 3)

- c. *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

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POTENTIALLY SIGNIFICANT IMPACT. The proposed ESP would facilitate new housing, commercial, office, and recreational uses in an area that, at present, only contains agricultural fields and sparse residential development. Future development facilitated by the proposed ESP would result in a permanent increase in the existing ambient noise levels in the vicinity, primarily from traffic. Potential increases in ambient noise levels may be detected by residents in the residential communities located east and west of the ESP site. Increases in the ambient noise level are potentially significant. Though development of this site was contemplated in the General Plan EIR, site specific impacts will be evaluated in the EIR.

(Sources: 1, 2, 3)

- d. *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above*

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	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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levels existing without the project?

POTENTIALLY SIGNIFICANT IMPACT. Implementation of the ESP could indirectly result in periodic increases in temporary construction-related noise over the long-term buildout of the proposed ESP site. Potential impacts related to temporary or periodic increases in ambient noise levels will be addressed in the EIR.

(Sources: 1, 2, 3)

- e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?



POTENTIALLY SIGNIFICANT IMPACT. The ESP site is located within the San Joaquin County Council of Governments' *Airport Land Use Plan* (ALUP) for the Tracy Municipal Airport. A portion of the Plan area is located within the airport's Outer Approach/Departure Zone (Zone 4) (northwest of the intersection of Corral Hollow and Linne Roads). Potential exposure to noise levels in excess of standards adopted by the San Joaquin County Council of Governments' ALUP is a potentially significant impact. The existing TMA has the potential to create excessive noise levels to future land uses located onsite. The purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project. Therefore, while an analysis of this potential impact may not need to be included in the EIR pursuant to CEQA, it is being provided for informational purposes. The EIR will analyze the potential noise impacts on the ESP, and determine whether ESP noise will exceed City General Plan Noise Element established noise standards.

(Sources: 1, 2, 3)

- f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?



NO IMPACT. The proposed ESP site is not located within the vicinity of a private airstrip. Therefore, No impacts would occur.

(Sources: 1, 2, 3)

XIII. Population and Housing

Would the project:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

LESS THAN SIGNIFICANT IMPACT. The amount of new residential growth facilitated by the ESP (up to 2,250 housing units) would be within the range of housing development planned for in the City of Tracy General Plan. The General Plan identifies a potential increase of 16,200 housing units in the City by 2025, which is the maximum increase allowed by the City's Growth Management Ordinance. Of these, a maximum of 2,250 units are anticipated in the ESP site. Therefore, less than significant impacts would occur.

(Sources: 1, 2, 3)

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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LESS THAN SIGNIFICANT IMPACT. The proposed ESP site is used primarily for agricultural purposes and contains one home on the site. Ultimately, implementation of the ESP would result in the demolition of structures to accommodate construction of the proposed land uses. If the proposed ESP is approved, one house would be replaced by up to 2,250 homes. Due to the small number of existing housing units that would need to be replaced and to the fact that no residents would be displaced, impacts relative to displacement of substantial numbers of existing housing are considered to be less than significant.

(Sources: 1, 2, 3)

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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LESS THAN SIGNIFICANT IMPACT. Refer to the response to Question XII.b, above.

(Sources: 1, 2, 3)

XIV. Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a. Fire protection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The proposed ESP could increase the service demands of the South County Fire Authority by adding new residents and possibly new employees, who would work in the area. Impacts to fire protection services are potentially significant. The following mitigation measures to reduce potential impacts to fire protection services applies to the Project:

Mitigation Measure PS-1:

The Project Applicant shall work with the City and the South County Fire Authority to help identify a possible location for a future fire station to serve the ESP site and surrounding areas.

Mitigation Measure PS-2:

Prior to the issuance of Building Permits, the Project Applicant shall work with the City and the South County Fire Authority to establish adequate emergency response services to the ESP site through the construction of a new fire sub-station, and EMT sub-station, temporarily stationed emergency response personnel, or other means as reviewed and approved by the South County Fire Authority. Additionally, the Project FIP shall include a Public Buildings Mitigation Fee.

(Sources: 1, 2, 3)

b. Police protection?

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LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. Future development facilitated by implementation of the ESP could increase the service demands of the City of Tracy Police Department by adding new residents and possibly additional employees working in the area. The following mitigation measure to reduce potential impacts to fire protection services applies to the Project:

Mitigation Measure PS-3:

The Project Applicant of individual projects within the ESP site shall consult with the Police Department during preliminary stages of site design to review safety features, determine their adequacy, and suggest design and/or physical improvements to the proposed site plan and/or to police facilities and equipment to ensure adequate service is maintained. This is achieved through the City's development review process, which currently is coordinated with various City Departments' review of new development proposals.

(Sources: 1, 2, 3)

c. Schools?

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Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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LESS THAN SIGNIFICANT IMPACT. The future development facilitated by the ESP could ultimately add a maximum of 2,250 residential units, which could generate an increase in demand for school facilities in the Jefferson Elementary School District and the Tracy Unified School District. A Memorandum of Understanding (MOU) has been established between the Project Applicant and Tracy Unified School District. The MOU between TUSD and Western Corral, LLC (recorded against the property) stipulates the Project Applicant would pay the school mitigation fees for the proposed ESP as appropriate. Pursuant to Section 65995(3)(h) of the California Government Code (SB 50), "the payment of statutory fees is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use or development of real property...." Therefore, with payment of statutory fees, school impacts would be considered less than significant and no additional mitigation measures would be required.

(Sources: 1, 2, 3)

d. Parks?

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LESS THAN SIGNIFICANT IMPACT. The proposed ESP could result in the addition of new residents to the area that could ultimately generate additional demand on the City's parks. Ellis would provide approximately 3 acres of improved and passive parks per 1,000 residents, and 1 acre per 1,000 residents for community parks through land dedication for and contribution towards the swim center. This meets the current *General Plan* adopted requirement of 4 acres of parks per 1,000 residents. Therefore, less than significant impacts would occur.

(Sources: 1, 2, 3)

e. Other public facilities?

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LESS THAN SIGNIFICANT IMPACT. The City requires payment of Public Facilities Impact Fees to offset the capital costs for impacts to public facilities. These fees are collected at building permit issuance and are used to fund additional facilities and equipment. Therefore, impacts would be less than significant.

(Sources: 1, 2, 3)

XV. Recreation

Would the project:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

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LESS THAN SIGNIFICANT IMPACT. See discussion above under Checklist Item XIIIV.d.

(Sources: 1, 2, 3)

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
b. <i>Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

POTENTIALLY SIGNIFICANT IMPACT. The ESP includes a 16 acre Swim Center and approximately 3 acres per 1,000 residents of improved and passive parks. The proposed Swim Center and several parks are not anticipated to have an adverse physical effect on the environment. However, analysis is required in the EIR to determine if the construction of the proposed recreational facilities would have an impact on the environment.

(Sources: 1, 2, 3)

XVI. Transportation and Traffic

Would the project:

- a. *Cause an increase in traffic, which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?*

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POTENTIALLY SIGNIFICANT IMPACT. Future development resulting from implementation of the ESP could result in a potentially significant increase in traffic volumes due to the addition of residential and commercial, office, and recreational uses. Though development of this site was contemplated in the General Plan EIR and the preparation of the Citywide Transportation Master Plan (TMP), site specific impacts to local roadways and intersections will be evaluated in the EIR. The increase in traffic volumes would place an increased demand on the existing street systems and I-580 and I-205, which provide regional vehicular access to the site. Further analysis is required in the EIR to assess the potential impacts from the proposed ESP on the surrounding regional and local roadways network.

(Sources: 1, 2, 3)

- b. *Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?*

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POTENTIALLY SIGNIFICANT IMPACT. The density, intensity, and types of uses proposed by the ESP would increase the volume of daily traffic trips traveling to and from the ESP site and on surrounding roadways. Implementation of the ESP could adversely impact, both individually and cumulatively, the level of

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Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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service on congested roadways. As such, the proposed ESP could result in potentially significant impacts that will require further analysis in the EIR.

(Sources: 1, 2, 3)

- c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

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NO IMPACT. The ESP does not propose any land uses or a change in location that would cause an increase in air traffic levels or result in substantial safety risks. Therefore, potential impacts to air traffic are not anticipated.

(Sources: 1, 2, 3)

- d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

☒ ☐ ☐ ☐

POTENTIALLY SIGNIFICANT IMPACT. New internal roadways would be required to serve and access proposed on-site uses. The roads would have to meet specific design standards to ensure that there would be no safety hazards such as sharp curves and dangerous intersections. Nonetheless, design features will be analyzed in the EIR.

(Sources: 1, 2, 3)

- e. Result in inadequate emergency access?

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POTENTIALLY SIGNIFICANT IMPACT. The proposed ESP would be required to provide an internal circulation system, including ingress and egress that is designed to accommodate emergency vehicle access. Emergency access will be analyzed in the EIR.

(Sources: 1, 2, 3)

- f. Result in inadequate parking capacity?

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POTENTIALLY SIGNIFICANT IMPACT. Parking for each use will be evaluated in the EIR based on the City of Tracy Zoning Ordinance or as modified by the ESP, as well as parking demand created by the proposed uses. Further analysis for each land use area will be required in the EIR to ensure that there is sufficient parking capacity for proposed land uses.

(Sources: 1, 2, 3)

- g. Conflict with adopted policies, plans, or programs

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Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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*supporting alternative transportation (e.g., bus
turnouts, bicycle racks)?*

POTENTIALLY SIGNIFICANT IMPACT. Further analysis would be required in the EIR to ensure the ESP does not conflict with adopted plans and/or policies supporting alternative transportation.

(Sources: 1, 2, 3)

XVII. Utilities and Service Systems

Would the project:

- a. *Exceed wastewater treatment requirements of the
applicable Regional Water Quality Control
Board?*

☐
☒
☐
☐

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The ESP would be subject to all applicable Regional Water Quality Control Board requirements. However, new development could potentially exceed the wastewater treatment plant capacity, which could potentially result in exceeding wastewater treatment requirements if additional facilities are not constructed. Therefore, the future development facilitated by the ESP has the potential to cause an exceedance of existing plant capacity, and result in the necessity of the expansion of the Tracy WWTP, which would be considered a potentially significant impact.

All other future development within Corral Hollow service area would be required to connect to the existing Corral Hollow sewer system. Upgrades to the existing Corral Hollow system would be required in order to adequately handle additional wastewater generation from the Project. Upgrades to the Corral Hollow system would be completed in three phases. All upgrades would occur on the downstream end of the system since capacity is restrained at the downstream portion of the Corral Hollow sewer system. The Project Applicant would be required to pay for all upgrades to the existing Corral Hollow sewer system necessary to service the proposed Project.

These facilities would largely be constructed within existing roadway right of ways. As such, the impacts of either of these options would be primarily limited to short-term construction-related impacts, such as short-term noise, short-term air quality impacts, and temporary traffic delays if travel lane closures are necessary. No significant impacts would be expected with the implementation of these facilities following the standard construction-related mitigation measures identified throughout this Initial Study, and with implementation of Mitigation Measure UTIL-1.

In addition, since the Corral Hollow sewer system conveys additional flows to the Hansen pump station, upgrades to the Hansen pump station would be necessary. The Project Applicant would be required to pay for all upgrades to the existing Hansen Pump station necessary to service the proposed Project. The Project Applicant would also be required to pay a fair share portion of upgrades to the Tracy WWTP in order to adequately expand treatment capacity. The Project Applicant would be required to pay a fair share portion of upgrades to the existing WWTP necessary to service the proposed Project.

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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The following mitigation measure to reduce potential impacts to a level of less than significant apply to the Project:

Mitigation Measure UTIL-1 Prior to the approval of a Tentative Subdivision Map for the proposed ESP site, the Project Applicant shall prepare a wastewater treatment conveyance and capacity study in consultation the City's Department of Development and Engineering Services to determine which wastewater treatment facility would have the capacity to provide wastewater treatment service. The wastewater treatment conveyance facilities shall be designed in accordance with this determination, routing wastewater to the appropriate facility or facilities.

(Sources: 1, 2, 3)

- b. *Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

☒ ☐ ☐ ☐

POTENTIALLY SIGNIFICANT IMPACT. See response to Question XVII (a), above. Senate Bill (SB) 610 was adopted in the California Water Code as Sections 10910-10915. SB 610 requires that housing and commercial development projects that meet or exceed a specific number of units or square footage prepare a Water Supply Assessment (WSA) report to determine if adequate water supplies are available to serve the proposed development. Pursuant to the requirements of SB 610, a WSA will be prepared for the proposed ESP. The results of the WSA required by SB 610 will be disclosed in the EIR, along with information pertaining to the water demand of the ESP, the availability of water to serve the proposed ESP, and potential impacts that could occur as a result of ESP water demand and availability of water supplies.

(Sources: 1, 2, 3)

- c. *Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

☒ ☐ ☐ ☐

POTENTIALLY SIGNIFICANT IMPACT. Refer to the response to Question VIII (e), above.

(Sources: 1, 2, 3)

- d. *Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?*

☐ ☐ ☒ ☐

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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LESS THAN SIGNIFICANT IMPACT. See response to Question IX (b), above.

(Sources: 1, 2, 3)

- e. *Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

☐ ☒ ☐ ☐

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED. The City of Tracy's existing wastewater system facilities includes sewer lines, lift stations, pump stations, and force mains. These facilities convey wastewater to the northern part of the City where wastewater is treated at the Tracy Wastewater Treatment Plant (WWTP), located north of I-205, between MacArthur Drive and Holly Drive. As stated above, the future development facilitated by the ESP has the potential to cause an exceedance of existing plant capacity, and result in the necessity of the constructing new facilities, which would be considered a potentially significant impact. Refer to the discussion in XVII (a) above. With the implementation of mitigation, less than significant impacts would occur.

(Sources: 1, 2, 3)

- f. *Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*

☐ ☐ ☒ ☐

LESS THAN SIGNIFICANT IMPACT. The proposed ESP would facilitate development of new housing units, office, and commercial development that would generate additional solid waste. However, according to the City of Tracy General Plan EIR, capacity at the Foothill Sanitary landfill, which serves the City of Tracy, is expected to be available to accommodate the anticipated development through the life of the General Plan. This would be considered a less than significant impact.

(Sources: 1, 2, 3)

- g. *Comply with federal, state, and local statutes and regulations related to solid waste?*

☐ ☐ ☒ ☐

LESS THAN SIGNIFICANT IMPACT. No conditions or elements have been identified that would result in the proposed project being inconsistent with federal, state, or local statutes and regulations regarding solid waste (such as excessive on-site demolition, illegal disposal of hazardous materials, etc.). Potential impacts are considered to be less than significant. No further analysis is required.

(Sources: 1, 2, 3)

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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XVIII. Mandatory Findings of Significance

Would the project:

- a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

☒ ☐ ☐ ☐

POTENTIALLY SIGNIFICANT IMPACT. The proposed ESP has the potential to degrade the quality of the environment. The future development facilitated by the proposed ESP could impact sensitive wildlife species. Therefore, further analysis is required.

(Sources: 1, 2, 3)

- b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

☒ ☐ ☐ ☐

POTENTIALLY SIGNIFICANT IMPACT. Future development facilitated by the proposed ESP could generate additional traffic and increased noise and air emissions associated with traffic, and could result in an increase in demands for services and utilities in the community. As such, further analysis of cumulative impacts is required in the EIR.

(Sources: 1, 2, 3)

- c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

☒ ☐ ☐ ☐

POTENTIALLY SIGNIFICANT IMPACT. Potentially adverse environmental effects from air quality, traffic, and noise will need to be analyzed to determine whether their impact may cause substantial adverse effects on human beings either directly or indirectly. As such, further analysis of these impacts is required in the EIR.

(Sources: 1, 2, 3)

Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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Section 4 Report Authors and Consultants

City of Tracy

Bill Dean.....Assistant Director of Development and Engineering Services

Dan Sodergren..... City Attorney

RBF Consulting – Environmental Documentation

Laura Worthington-Forbes Principal-in-Charge

Kari Cano Environmental Planner

Eddie Torress Air Quality/Noise Specialist

Achilles Malisos..... Air Quality/Noise Specialist

Frederik Venter Transportation/Circulation

Section 5

References and Persons Consulted

1. City of Tracy/Design Community and Environment, *City of Tracy General Plan*, February 1, 2011.
2. City of Tracy/Design Community and Environment, *City of Tracy General Plan Draft Supplemental EIR* April 2009.
3. City of Tracy/RBF Consulting. *City of Tracy/Surland Companies Development Agreement and Ellis Specific Plan Applications Environmental Impact Report*. April 2008.

Section 2 References and Persons Consulted

1. City of Tracy Design Community and Environment, City of Tracy General Plan February 1, 2012
2. City of Tracy Design Community and Environment, City of Tracy General Plan Draft Supplemental EIR April 2008
3. City of Tracy/REB Consulting, City of Tracy/Tracy Community Development Agreement and Ellis Specific Plan Supplemental Environmental Impact Report April 2008

NOTICE OF PREPARTION (NOP)

Notice of Preparation

ASSESSOR RECORDER
COUNTY CLERK
KENNETH W. BLAKEMORE

2012 FEB -8 PM 3: 35

TO:	California State Clearinghouse	FROM:	City of Tracy
	1400 Tenth Street		SAN JOAQUIN COUNTY
	Sacramento, CA 95814		City Hall
			333 Civic Center Plaza
			Tracy, CA 95376
			ATTN: Bill Dean, Assistant Director of Development and Engineering Services

Subject: Notice of Preparation of an Environmental Impact Report

The City of Tracy will be the Lead Agency and will prepare a Draft Environmental Impact Report (EIR) for the Ellis Specific Plan and Ellis Development Agreement. The proposed scope for the EIR is defined in the attached Initial Study. If your agency has a view with respect to the scope of the Draft EIR as per the attached Initial Study, or is concerned with an issue that is germane to your agency's statutory responsibilities in connection with the proposed project, please let us know in writing. Your agency may need to use the EIR prepared by our agency when considering your permit or other approvals for the project.

Project Title: City of Tracy/Ellis Specific Plan and Ellis Development Agreement Environmental Impact Report

Project Applicant: The Surland Companies
1024 Central Avenue
Tracy, CA 95376
209-832-7000

The project description, location, and the potential environmental effects are contained in the attached materials. A copy of the Initial Study is attached, and is also available on the City's website, www.ci.tracy.ca.us.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, but no later than 30 days after receipt of this notice. This notice will be available from February 8, 2012 through March 12, 2012.

Please send your response to Bill Dean, Assistant Director of Development and Engineering Services, Development and Engineering Services Department, City of Tracy, at the address shown on the top of the page. We respectfully request the name of a contact person for your agency.

A scoping meeting will be held on February 22, 2012 at 7:00 pm to obtain public input on the proposed Project.

Date:

2-6-12

Signature:

Title:

Bill Dean, Assistant Director of Development
and Engineering Services
City of Tracy

Telephone: 209-831-6400

Reference: California Code of Regulations, Title 14, (State CEQA Guidelines) Sections 15082(A), 15103, 15375

NOP COMMENT LETTERS

MARK V. CONNOLLY

Attorney at Law

CONNOLLY LAW BUILDING
121 E. 11th STREET
TRACY, CALIFORNIA 95376

Telephone (209) 836 0725

Fax (209) 832 3796

E-mail: mconnolly@connollylaw.net

www.connollylaw.net

February 22, 2012

Bill Dean
City of Tracy
City Hall
333 Civic Center Plaza
Tracy, CA 95376

Re: Notice of Preparation of EIR
City of Tracy/Ellis Specific Plan and Ellis Development Agreement
Environmental Impact Report

Dear Mr. Dean:

The following are TRAQC comments to the Initial Study and Notice of Preparation.

First, the Initial Study does not adequately describe the project. In the prior project approval in which Judge Holland issued the Statement of Decision attached to this letter, the project description was determined to be inconsistent and inadequate. This Initial Study includes almost no information on the Development Agreement. The public has no information on its terms to allow any intelligent comment on the project or Initial Study. It is apparent that rather than remedy the problem with the description of the same project in the 2006/2007 Initial Study, this Initial Study just removes almost all information rendering it equally flawed.

The City and Applicant are still negotiating the Development Agreement as shown by the City Council Agenda item scheduled for February 21, 2012 and delayed to March 6, 2012 to allow Staff to negotiate a Development Agreement. Since the terms of the Development Agreement are not even known, meaningful comment by the public is impossible. This is the same flaw that doomed the first attempt at a Development Agreement.

The second category of problems with the Initial Study is its minimization of impacts determined in the prior Initial Study as significant. The Initial Study of August 2006 and November 2007 identified environmental factors as potentially significant impacts in many areas in which the subject Initial Study identifies those same impacts as

less than significant. Those areas include but are not limited to Aesthetics, Land Use/Planning, Public Services, Agricultural Resources, Recreation, Hydrology/Water Quality and Population/Housing. The Initial Study without justification appears to minimize many of these impacts.

Overall, this Initial Study does not comply with the Statement of Decision of Judge Holland, a copy of which is attached. The projects, to the extent they are described in the project description, do not appear different.

Many of the citations in this letter to legal authority relate to mitigation measures whether in the context of an Initial Study, Negative Declaration or EIR as the test for the adequacy of a mitigation measure for any of these matters is substantially the same.

Section 2 – Project Description

As compared to the 2007 Initial Study this Initial Study is devoid of any meaningful description of the Development Agreement (DA). At its meeting of February 21, 2012 the City Council has on its agenda the subject of authorization to allow staff to commence negotiations with the Applicant of a DA. The problem with the first failed attempt at project approval was that the DA was being negotiated and changed throughout the CEQA process. It appears this same failure is occurring again. The Project description does not describe the DA sufficiently to allow public comment because the City and Applicant do not know the terms of the DA or are not disclosing the terms to the public..

In the "Purpose of the Proposed Project" all references to the DA and proposed pool have been removed. In the Overview Section of the Project Characteristics all references to the Pool have been removed. In the Objectives section there is a single reference to "Create a family-oriented Swim Center". (Section 2.5)

The Objectives of the project have been greatly reduced from those described in the 2007 Initial Study resulting in mostly generic and boilerplate objectives that could be satisfied by many projects. On the other hand the objectives contained in the 2007 Initial Study of identifying alternatives to the project that would avoid adverse impacts have been removed. (Section 2.6)

The description of Limited Use intended for the Tracy Airport Outer Approach Zone has been redacted to exclude any description of the types of uses described in detail in the 2007 Initial Study that would be allowed. (Page 2-13) This appears to be another dumbing down or reduction in the information contained in the description when compared to the prior Initial Study. The public is deprived of any meaningful way to determine the uses allowed in the Tracy Airport Approach/Departure zones.

The Parks section (Page 2-13) needs to discuss the failure of the project to meet the minimum 4 acre per thousand requirement for improved and passive parks. The Initial Study indicates the pay-for-play swim center is counted to allow this minimum dedication to be met. However, the aquatics center is not a public park. Parks charge no

admission. This swim center will charge admission and is not free to the public. Additionally, it is a limited use facility (being a swim center) and cannot function as an improved or passive park even if there was no admission charged. The Initial Study, and the DEIR need to recognize the lack of parkland and the failure of the Specific Plan to meet minimum park requirements of either 4 acres per 100 or 5 acres per 1,000. This will be discussed further below.

Under Parking (Page 2-13) the Initial Study again reduces specificity by eliminating specific information on the number of parking places.

Section 3 – Evaluation of Environmental Impacts

The Initial Study consistently determines that Impacts described as Significant in the prior Initial Study are now Less than Significant with Mitigation Incorporated. Many of the claimed Mitigation Measures are insufficient.

Aesthetics

Aesthetics: Impact I.d: "Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?" The prior Initial Study concluded this was a Potentially Significant Impact while the Initial Study concludes it is Less than Significant with Mitigation Incorporated. The described mitigation measure is insufficient. It merely states that some unspecified "design features" shall be incorporated and these, where feasible, will in some unspecified way reduce this impact. (Mitigation Measure ASES-2, page 3-2) Future mitigation measures such as this are insufficient:

§6.74 c. Future Mitigation

A negative declaration requiring formulation of mitigation measures at a future time violates the rule that members of the public and other agencies must be given an opportunity to review mitigation measures before a negative declaration is approved. Pub Res C §21080(c)(2); 14 Cal Code Regs §15070(b)(1) (see §6.63). See *League for Protection of Oakland's Architectural & Historic Resources v City of Oakland* (1997) 52 CA4th 896, 60 CR2d 821 (rejecting mitigated negative declaration for demolition of historic building, finding in part that tentative and vague proposal to incorporate unspecified design features of building in new structure was insufficient mitigation); *Gentry v City of Murrieta* (1995) 36 CA4th 1359, 1396, 43 CR2d 170 (condition requiring applicant to comply with mitigation measures that might be recommended in a future report on the Stephens kangaroo rat was improper); *Quail Botanical Gardens Found., Inc. v City of Encinitas* (1994) 29 CA4th 1597, 1605 n4, 35 CR2d 470 (dictum rejecting deferral of height mitigation to postapproval design review); *Oro Fino Gold Mining Corp. v County of El Dorado* (1990) 225 CA3d 872, 884, 274 CR 720, 727 (condition requiring that reclamation, erosion, dust, and fire control plans be formulated after approval of mitigated negative declaration was improper); *Sundstrom v*

County of Mendocino (1988) 202 CA3d 296, 306, 248 CR 352 (condition requiring that mitigation measures recommended by future study to be conducted by civil engineer evaluating possible soil stability, erosion, sediment, and flooding impacts was improper).

Adoption of a mitigation plan that sets forth mitigation measures that may be implemented depending on the results of further study should be acceptable as long as the mitigation plan is formulated in a way that will ensure adequate mitigation of potential impacts. This approach comports with the standard articulated in *Sundstrom v County of Mendocino, supra* (see §6.70), that the agency must have a reasonable basis for expecting mitigation to be effective. This approach to mitigation has been specifically approved for EIRs. See §14.10. As the court noted in *Ocean View Estates Homeowners Ass'n v Montecito Water Dist. (2004) 116 CA4th 396, 401, 10 CR3d 451*, mitigation measures "need not specify precise details of design"; once an effective mitigation measure is identified, a mitigated negative declaration "may leave the details to engineers."

Practice Under the California Environmental Quality Act, CEB, 2nd Ed. Section 6.74

Agricultural Resources

Agricultural Resources: Impact II.a: "Conversion of Farmland?" This Impact, which was also described as Potentially Significant, is now determined to be Less than Significant. (Page 3-3) The basis of this conclusion that the General Plan designated a vast area which might be developed so the decision to develop this several hundred acres of prime farmland will have a less than significant impact. As identified in the attached Statement of Decision this rationale fails because no prior General Plan EIR, considered the conversion of any particular total acreage of farmland, which farmland would be converted first, any priority system of farmland conversion, or the effects of premature and discontinuous farmland conversion.

"When the analysis in an earlier negative declaration or EIR is used as the basis for the findings in the initial study, the initial study should state where the analysis is available for review, identify the effects that were adequately addressed in an earlier document, and discuss the application of mitigation measures incorporated or refined from the earlier document that reduce impacts to a less than significant level."

Practice under the California Environmental Quality Act, CEB
Section 6.13

The failure of any earlier EIR to study the priority of development will be discussed further below.

Agricultural Resources: Impact II.b: "Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract?" Again this impact is reduced from Potentially Significant to Less than Significant Impact based on flawed analysis. The fact that hundreds if not thousands of acres of land, all of which could not be converted, was

considered for potential conversion does not reduce or eliminate the impacts resulting from the decision to convert this farmland in a leapfrog pattern of development nor does it mean such impacts were ever considered. In fact, the City refused to prioritize development and farmland conversion.

Agricultural Resources: Impact II.e: "Involve other changes in the environment, which, due to their location or nature, could result in conversion of farmland, to non-agricultural use?" Again the Prior Initial Study determined the impacts to be Potentially Significant but this Initial Study determines they are Less Than Significant with Mitigation Incorporated. (Page 3-4) Mitigation Measure AG-1 ignores the farmland conversion caused by this premature leapfrog development. It fails because it relies on the prior inadequate analysis in dealing with impacts II.a and II.b. The purported mitigation measure is not a mitigation measure dealing with the impact. A fence will not mitigate impacts on farmland due to a leapfrog development pattern. This mitigation measure does not even comply with General Plan Objective OSC-2.2 and the supporting policies requiring buffers and setbacks. (General Plan 6-19 to 6-20)

Biological Resources

Biological Resources: Impact IV.b: "Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and game or US Fish and Wildlife Service?" This impact likewise is reduced from Potentially Significant in the prior Initial Study to Less than Significant in this Initial Study. The comment assumes that a review by CDFG (future study) will result in future unspecified mitigation measures. There is also a reference to an unspecified future study by the Corps of Engineers that might result in project changes or unspecified mitigation. This is a "Hand-Off to another agency":

"§6.72 a. Hand-Off to Another Agency

Conditioning a negative declaration on another agency's future review of environmental impacts, without evidence of the likelihood of effective mitigation by the other agency, is insufficient to support a determination by the lead agency that potentially significant impacts will be mitigated. In *Sundstrom v County of Mendocino* (1988) 202 CA3d 296, 248 CR 352, the court held that the county's adoption of a condition to the negative declaration that a sludge disposal plan be approved by the Regional Water Quality Control Board and the Department of Public Health was insufficient to justify its failure to address this issue itself as part of the environmental review process. In the face of evidence that no solution was readily available, the court held that reliance on prospective compliance with future approvals by other agencies was not acceptable. A lead agency may rely on prospective action to be taken by another agency, however, if evidence shows a reasonable basis for presuming that potential impacts will in fact be mitigated. See §6.70."

California Environmental Quality Act, CED, 2nd Ed, §6.72

The reduction of this impact is also based on a "Future Study". An unspecified future study cannot be the basis of a negative declaration or the reduction of a potentially significant impact to a less than significant impact:

§6.73 b. Future Study

A condition that requires implementation of mitigation measures to be recommended in a future study may conflict with the requirement that project plans incorporate mitigation measures before a proposed negative declaration is released for public review. Pub Res C §21080(c)(2); 14 Cal Code Regs §15070(b)(1). See §6.63. Studies conducted after a project's approval do not guarantee an adequate inquiry into environmental effects. Such a mitigation measure would effectively be exempt from public and governmental scrutiny.

In *Sundstrom v County of Mendocino* (1988) 202 CA3d 296, 248 CR 352, the court disapproved a condition to a negative declaration that required the applicant to prepare additional hydrological studies to be approved by county staff to demonstrate the absence of significant adverse hydrological impacts. The court held that deferring evaluation of environmental impacts until after adoption of the negative declaration would amount to a post hoc rationalization and would improperly skirt the required procedure for public review and agency scrutiny of potential environmental impacts. Future studies may be appropriate, however, if they are coupled with a clearly defined mitigation plan adopted at the time the negative declaration is approved. In that situation, the mitigation plan can provide the agency with the type of information that would reasonably justify an expectation of effective mitigation. See §14.12.

California Environmental Quality Act, CED, 2nd Ed. §6.73

Likewise Impact IV.c, "Whether the project would have a substantial adverse effect on federally protected wetlands" is reduced from Potentially Significant to Less Than Significant based on a "Hand-off to another agency".

Biological Resources: Impact IV.d, "Substantial interference with the movement of native resident or migratory fish or wildlife species or with established native residential or migratory wildlife corridors, or impede the use of native wildlife nursery sites?" (Page 3-8) The Prior Initial Study classified this as a Potentially Significant Impact but this Initial Study classified it as less than Significant. This is based on a requirement to comply with unspecified Federal, State and local regulations and the San Joaquin County Multi-Species HCP, SJMSCP) and is also a "Hand-off to another agency".

Biological Resources: Impact IV.e., "Conflicts with local policies or ordinances?" has also been determined to be Less than Insignificant when the prior Initial Study determined it was Potentially Significant.

Biological Resources: Impact IV.f, Conflicts with the provisions of an adopted HCP, NCCP or other approved local, regional or state conservation plan was determined

to be Potentially Significant in the prior Initial Study but Less than significant in the current Initial Study based on a "Hand-off" to the SJCOG.

Geology and Soils

Seismic impacts in Section VI, are also uniformly reduced from Potentially Significant to Less than Significant without adequate justification.

Geology and Soils: Impact VI. d "dealing with expansive soils", which was Potentially Significant in the prior Initial Study is not determined to be Less than Significant. The mitigation measure is insufficient as it consists of a combination of future studies and unspecified mitigation measures. (Page 3-14) This is an improper reliance on a "Future Study" and unspecified "Future Mitigation".

Hazards and Hazardous Materials

As to Hazards and Hazardous Materials, Section VII, the Initial Study incorrectly dismisses two PG&E pipelines. Impact VII.b asks whether the Project would "Create a significant hazard to the public or the environment though reasonably foreseeable upset and accident conditions involving the release of hazardous material into the environment?" The gratuitous comment on page 3-16 that there is no legal duty to consider the effect of the environment on the project is the same as saying it is unnecessary to consider the fact that the project will result in the violent painful death of residents because their housing project is being built on an active volcano. A serious argument would not be advanced that there is no need to consider the location of the project on active fault line and such a ridiculous argument cannot be made as to gas lines.

This same comment that the EIR need not consider hazardous material sites (Impact VII. d) with a corresponding reduction of the impacts from the prior Initial Study from Potentially Significant to Less than Significant is equally ridiculous.

The Initial Study does come to the correct conclusion as to Impact VII. e for a project located within an airport land use plan, but again incorrectly states the law that this potential impact need not be included in the EIR. The Initial Study, after this legally incorrect gratuitous comment, does indicate the EIR will study the airport impacts. The General Plan Objective LU-6.3 is to "Ensure that development near the Tracy Municipal Airport is compatible with airport uses and conforms to safety requirements." Policy P1 is "New development and expansion of existing development shall conform to the requirements of the zoning ordinance (as relate to the Airport Overlay area) and the requirements of the San Joaquin County Airport Land Use Plan." (General Plan 2-47) The General Plan requires a study of this issue and compliance with the most current Airport Land Use Plan.

Land Use and Planning

In Land Use and Planning, Section X, the Initial Study determines conflicts with applicable land use plans, policies and regulations are Less than Significant when the

prior Initial Study determined they were Potentially Significant. The Less than Significant designation is not supported by the General Plan when taken in the context of all related impacts.

Noise

As to Noise Impact XII, a., the Initial Study again incorrectly states the law concerning the requirement that the EIR study the impact of location of the project next to the airport on its residents. It then, however, determines the impact to be Potentially Significant and indicates the EIR will study the issues.

Likewise as to Airport Noise, Impact XII. e, the Initial Study incorrectly states the legal test, but then agrees that the EIR will study the issue. (Page 3-27)

Housing and Population

The prior Initial Study recognized as a Potentially Significant Impact the fact that the project would induce substantial population growth in an area while the current Initial Study identifies the impact as Less than Significant in Population and Housing: Impact XIII, a. The analysis, rejected previously in the attached Statement of Decision, ignores the fact that no EIR or Plan determined which project would proceed first. There was no prioritization and the capacity of the area planned for development greatly exceeds the possible residential growth.

Objective LU-14 of the General Plan is to "Promote efficient residential development patterns and orderly expansion of residential acres to maximize the use of existing public services and infrastructure" (General Plan 2-35). Among other Policies on this issue, one was to "encourage residential growth that follows an orderly pattern with initial expansion targeted for areas shown in Figure 2-3." (General Plan 2-36) Action A1 was to "develop criteria or amended criteria for inclusion in the GMO Guidelines or other implementation tools, to guide the issuance of RGAs....) General Plan 2-38 to 2-39). The General Plan clearly did not address the issue of inducing population growth in a specific area because it never considered which of the projects shown in General Plan 2-3 would build first.

This project is a leapfrog development which will result in development before more contiguous projects. Since the issue of the order or priority of development has never been addressed, the statement that this impact is Less than Significant because the number of units is less than those allowed by total build out does not address the issue. The issue is whether this project will result in substantial population growth in an area and this project will do so with no indication that other than by this project approval it would ever develop. The vast number of units possible in the primary and secondary growth areas means this project may never develop and the failure to study its growth inducing impacts is an error. The analysis fails for failing to show how the General Plan EIR dealt with this issue of the prioritization of projects:

"When the analysis in an earlier negative declaration or EIR is used as the basis for the findings in the initial study, the initial study should state where the analysis is available for review, identify the effects that were adequately addressed in an earlier document, and discuss the application of mitigation measures incorporated or refined from the earlier document that reduce impacts to a less than significant level."

Practice under the California Environmental Quality Act, CEB
Section 6.13

Here the Initial Study just asserts that because a Program EIR identified a large area, a smaller portion of which might be developed, there is no need to consider the impacts of which portions are developed and in what order. This analysis was rejected in the attached Statement of Decision.

Public Services

The Initial Study misstates the impacts on Parks, Impact XIV. d, as reduced from Potentially Significant to Less than Significant. (Page 3-30) The project does not meet the current General Plan requirement of 4 acres of parks per 1,000 residents as required by the General Plan. (General Plan 6-9) The project only provides 3 acres of parks per 1000 residents and a pay-for-play aquatics center which studies indicate will charge at least \$15.00 per admission and is therefore not a public park.

Additionally, the proposed mitigation of parkland dedication violates Policy 2 under Objective OSC-4.2 which states:

"All land dedicated for parks shall be of a shape and size suitable for parks. Land containing underground or overhead utilities, unsuitable topography, contamination or **other factors that restrict the suitability of the land** shall not be credited against dedication requirements."
(General Plan 6-26)

In this case parkland dedication in the airport approach or departure zones (or too near PG&E gas transmission pipelines) cannot be dedicated for parkland use.

The proposed dedication of 4 acres per 1,000 population is flawed for a second reason other than being unsuitable due to airport or pipeline restrictions. The original voided Development Agreement, contained a reversion provision providing that some of the 16 acres included in the 4 acres per 1,000 residents could be developed or revert to the developer under certain conditions. Such a reversion provision would mean that this flawed mitigation measure would be a complete illusion because the project would not even include a parkland dedication of 3 acres per 1,000 residents.

Recreation – Section XV

As to Recreation the impact is also understated as to existing neighborhood and regional parks (Impact XV, a.) because the passive public park dedication is only 3 acres

per 1,000 residents in this project. If residents of Ellis want to use passive free parks they will have to use existing parks to satisfy a full quarter of their needs assuming the lower standard of 4 acres per 1,000 instead of the correct 5 acres per 1,000. One quarter of their minimum parkland will be in a pay-to-play facility creating a shortage of passive parks for Ellis residents who will use existing parks.

Utilities and Service Systems

It is admitted that the project would exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. (Impact XVII. a, page 3-33) The impact is reduced from Potentially Significant to Less than Significant based on the representation that the applicant will pay an unspecified fee to expand treatment capacity. There is no program, plan or time frame provided to verify these improvements will ever occur. The fair share of this applicant will not be sufficient to allow plant expansion. This project could be complete and generating sewage with no expansion having occurred. The proposed mitigation is insufficient to reduce the impact from significant to less than significant. This analysis is a "Hand-off" to another agency, in this case the Regional Water Quality Control Board. What is worse, it amounts to the payment of a fee with no evidence any plant expansion will ever occur:

Lead agencies sometimes require the payment of fees to provide mitigation for an impact identified in a negative declaration. The legal standards governing fee-based mitigation measures in a negative declaration differ from the standards governing such measures in an EIR, based on the "fair argument" standard that applies to judicial review of a mitigated negative declaration. In California Native Plant Soc'y v County of El Dorado (2009) 170 CA4th 1026, 88 CR3d 530, the court evaluated the adequacy of a mitigation fee program for impacts to rare plants. The fee program, which was contained in the county general plan, required developers of projects in an area containing rare plants to pay a fee to a county program to fund the acquisition and management of ecological preserve lands to protect those plant species. While noting that such fee programs may be adequate mitigation in general, the court held that the existence of such a fee program cannot presumptively establish its adequacy as mitigation, and thus survive review under the fair argument standard, unless the fee program itself has been evaluated under CEQA. The court distinguished cases that have upheld fees as adequate mitigation in an EIR, on the basis that the EIRs in those cases had evaluated the adequacy of the mitigation plan that would be supported by the fee. 170 CA4th at 1053.

The decision in *California Native Plant* should not be interpreted as holding that reliance on fee-based mitigation programs in a mitigated negative declaration is always inappropriate. There was testimony from biologists in *California Native Plant* that supported a fair argument that the program would not adequately mitigate the impacts to rare plants. On the basis of that record, the appellate court ruled that a fee-based mitigation program cannot "presumptively" establish that an impact is mitigated and obviate CEQA review unless the program has been

reviewed under CEQA. Under this ruling, when a mitigation program has not been reviewed under CEQA, the program's adequacy in the context of a mitigated negative declaration is reviewed under the same rules as other types of mitigation measures; *i.e.*, if there is a fair argument supported by some substantial evidence that the impact is not mitigated to a less than significant level, then the mitigation measure is not sufficient and either additional, effective mitigation must be provided or an EIR must be prepared. This ruling also appears to suggest, however, that if a fee-based mitigation program has been evaluated under CEQA, the adequacy of the program itself might not later be subject to challenge under the fair argument standard.

Practice Under the California Environmental Quality Act, CEB, 2nd Ed. Section 6.74A

As to whether the project will have sufficient water supplies to serve the project from existing entitlements and resources, or are new and expanded entitlements needed it is determined based on a future WSA that the impact will be less than significant. It is impossible to make this determination based on a WSA that has not yet been completed so this conclusion is incorrect. (Pages 3-34 to 3-45)

In conclusion, the Initial Study is flawed in its failure to provide adequate information as to the still changing DA project, its attempt to minimize impacts with phantom mitigation measures, its failure to correct the defects of the prior CEQA process as described in detail in the attached Statement of Decision and its gratuitous comments about not needing to study issues, but then acknowledging the EIR would study issues.

Very truly yours,



MARK V. CONNOLLY

COATES FIELD SERVICE, INC.
1280 BOULEVARD WAY
WALNUT CREEK, CALIFORNIA 94596

TEL. 925-935-5101

FAX. 925 935-8367

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FEB 29 2012

CITY OF TRACY

Please reply to:

Jeremy L. Gross
Contract Conflict Inquiry Representative
Chevron Pipe Line Company
2360 Buchanan Rd.
Pittsburg, CA 94565
TEL (925) 753-2003 FAX (925) 0753-2030
jgpf@chevron.com

February 27, 2012

Bill Dean
City Hall
333 Civic Center Plaza
Tracy, CA 95376

PROPOSED ELLIS SPECIFIC PLAN AND ELLIS DEVELOPMENT AGREEMENT
ENVIRONMENTAL IMPACT REPORT

Dear Mr. Dean:

Thank you for giving us the opportunity to answer your questions. We would like to give you a little background on our pipelines and some of the safety requirements we require before allowing any work near our pipelines.

Chevron received your Notice of Preparation and Environmental Impact Report for the proposed "Ellis Specific Plan" Project.

Chevron operates one (1) active pipeline in the vicinity of the project. This 18-inch buried pipeline appears to be within the "special landscape features" boundary of the project. This high pressure pipeline transports crude oil. Extreme caution should be used when excavating, drilling, or grading around this pipeline.

You are being sent an aerial image delineating the approximate location of Chevron Pipe Line Company's KLM pipeline. Chevron assumes no responsibility for the accuracy of these drawings and they should be used only for the general location of our facilities. Actual depths and alignment can only be determined by field checking and potholing the pipeline. Chevron will provide a Facility Inspector to mark and help locate our pipeline. Your company would be responsible to provide a backhoe and operator and a surveyor if needed.

OKLAHOMA CITY, OK
405-528-5676
CORPORATE OFFICE

ALBANY, NEW YORK
518-438-4499



TAMPA, FLORIDA
813-623-6446

HOUSTON, TEXAS
281-583-7300

We consider your request as very preliminary fact finding. Chevron will require several weeks of lead time to provide any detailed information regarding facilities and right-of-way information. A request for more specific information should be requested through Jeremy Gross (Contract Conflict Inquiry Specialist) at (925) 753-2003, mailing address 2360 Buchanan Rd., Pittsburg, Ca. 94565.

Our pipelines are operated and maintained under Federal Regulations (D.O.T. 195) and State Regulations (California Pipeline Safety Act).

Chevron, Federal, and State regulations require 12-inches (minimum) clearance between petroleum pipeline and other cross-lines that intersect at a 90° angle (perpendicular to each other). If the intersection angle is less than 90°, the minimum clearance between the two pipelines must be 24-inches or greater.

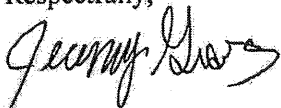
Chevron recommends that the potholing of the Chevron pipeline be done before construction plans are completed so conflicts between your proposed road reconstruction project and our pipeline can be avoided. Chevron requires that arrangements for potholing of its pipelines be made at least forty-eight (48) hours in advance with Jeremy Gross at (925) 753-2003. Chevron will provide a Facility Inspector to locate the pipelines and assist with the potholing.

Regarding restrictions on development over our pipelines, most of our easements do not restrict paving or landscaping as long as encroachment clearances are maintained. That is, no less than 24-inches of undisturbed clearance between the top of pipe and bottom of the subgrade for paving and grass or shallow rooted plants on the easements. Deep-rooted trees and all structures are prohibited. All excavations within 24-inches of Chevron's facilities must be done by hand tools only. I would also like to add that the use of heavy vibratory equipment is prohibited over our pipelines.

Chevron must review and approve all construction plans that involve right of way encroachments. All work that would affect our pipeline needs to be coordinated with our office at 2360 Buchanan Rd., Pittsburg, Ca. 94565.

Notify Underground Service Alert (USA) at 800-227-2600 at least 48 hours prior to any excavation work. If you have any questions or need additional information, please contact me at (925) 753-2003. Thank you for the advance notice on this project, we look forward to working with you.

Respectfully,



Jeremy Gross
Contract Conflict Inquiry Specialist
For Chevron Pipe Line Company

File: Ellis Specific Plan NOP response.doc

OKLAHOMA CITY, OK
405-528-5676
CORPORATE OFFICE

ALBANY, NEW YORK
518-438-4499



TAMPA, FLORIDA
813-623-6446

HOUSTON, TEXAS
281-583-7300



DEPARTMENT OF TRANSPORTATION

DIVISION OF AERONAUTICS – M.S.#40

1120 N STREET

P. O. BOX 942874

SACRAMENTO, CA 94274-0001

PHONE (916) 654-4959

FAX (916) 653-9531

TTY 711

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MAR 5 2012

February 27, 2012

CITY OF TRACY

Mr. Bill Dean
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

Dear Mr. Dean:

Re: Notice of Preparation for the Ellis Specific Plan & Development Agreement;
SCH# 2012022023

The California Department of Transportation (Caltrans), Division of Aeronautics (Division), reviewed the above-referenced document with respect to airport-related noise and safety impacts and regional aviation land use planning issues pursuant to the California Environmental Quality Act (CEQA). The Division has technical expertise in the areas of airport operations safety and airport land use compatibility. We are a funding agency for airport projects and we have permit authority for public-use and special-use airports and heliports. The following comments are offered for your consideration.

The proposal is for the implementation of the City of Tracy General Plan TR-Ellis Specific Plan and Development Agreement. Implementation of the Ellis Specific Plan would allow a mix of residential, commercial, office/professional institutional, and recreational uses on a site that currently has no structures or improvements. Construction of a 16-acre swim center is also a part of the plan. An amendment to the City of Tracy General Plan will be required.

The project site is approximately 3,200 feet northwest (on centerline) of the departure end of Runway 30 at the Tracy Municipal Airport. The site is also approximately 2,900 feet northwest of the approach end of Runway 8. Tracy Municipal is an active General Aviation airport with 80 based aircraft and 60,000 annual operations. The airport operates under a State Airport Permit issued by the Division.

CEQA, Public Resources Code 21096, requires the California Airport Land Use Planning Handbook (Handbook) be utilized as a technical resource in the preparation of environmental documents as they relate to airport-related safety hazards and noise problems, for projects within airport land use compatibility plan boundaries or if such a plan has not been adopted, within two nautical miles of an airport. The Handbook provides a "General Plan Consistency Checklist" in Table 5A and a "Possible Airport Combining Zone Components" in Table 5B. The Handbook is a resource that should be applied to all public use airports and is available on-line at: <http://www.dot.ca.gov/hq/planning/aeronaut/documents/AirportLandUsePlanningHandbook.pdf>

In accordance with California Public Utilities Code (PUC) Section 21676 *et seq.*, prior to the amendment of a general plan or specific plan, or the adoption or approval of a zoning

ordinance or building regulation within the planning boundary established by the airport land use commission (ALUC), the local agency shall first refer the proposed action to the ALUC.

If the ALUC determines that the proposed action is inconsistent with the airport land use compatibility plan, the referring agency shall be notified. The local agency may, after a public hearing, propose to overrule the ALUC by a two-thirds vote of its governing body after it makes specific findings. At least 45 days prior to the decision to overrule the ALUC, the local agency's governing body shall provide to the ALUC and Caltrans a copy of the proposed decision and findings. Caltrans reviews and comments on the specific findings a local government intends to use when proposing to overrule an ALUC. Caltrans specifically looks at the proposed findings to gauge their relationship to the overrule. Also, pursuant to the PUC 21670 et seq., findings should show evidence that the local agency is minimizing "...the public's exposure to excessive noise and safety hazards within areas around public airports to the extent that these areas are not already devoted to incompatible uses."

General plans and elements must clearly demonstrate intent to adhere to ALUC policies to ensure compliance with compatibility criteria. Direct conflicts between mapped land use designations in a general plan and the ALUC criteria must be eliminated. A general plan needs to include (at the very least) policies committing the county to adopt compatibility criteria essential to ensuring that such conflicts will be avoided. The criteria do not necessarily need to be spelled out in the general plan. There are a number of ways for a city or county to address the airport consistency issue, including:

- Incorporating airport compatibility policies into the update.
- Adopting an airport-combining zoning ordinance.
- Adopting an "Airport Element" into the general plan.
- Adopting the airport compatibility plan as a "stand alone" document or as a specific plan.

The general plan must acknowledge that until ALUC compatibility criteria are incorporated into the general plan, proposals within the airport influence area must be submitted to the ALUC for review. These provisions must be included in the general plan at a minimum for it to be considered consistent with the airport land use compatibility plan.

The proposal should also be coordinated with Tracy Municipal Airport staff to ensure its compatibility with future as well as existing airport operations.

Due to its proximity to the airport, the project site may be subject to aircraft over flights and subsequent aircraft-related noise impacts. Since communities vary greatly in size and character from urban to rural, the level of noise deemed acceptable in one community is not necessarily the same for another community.

Federal and State regulations regarding aircraft noise do not establish mandatory criteria for evaluating the compatibility of proposed land use development around airports (with the exception of the 65 dB CNEL "worst case" threshold established in the State Noise Standards for the designated "noise problem" airports). For most airports in California, 65 dB CNEL is

Mr. Bill Dean
February 27, 2012
Page 3

considered too high a noise level to be appropriate as a standard for land use compatibility planning. This is particularly the case for evaluating new development in the vicinity of the airport. The 60 dB CNEL, or even 55 dB CNEL, may be more suitable for new development around most airports. For a further discussion of how to establish an appropriate noise level for a particular community, please refer to Handbook.

Consideration should also be given to cumulative noise impacts associated with the project site's proximity to roadways and railway lines.

California Public Utilities Code (PUC) Section 21659 prohibits structural hazards near airports. The planned height of buildings, antennas, and other objects should be checked with respect to Federal Aviation Regulation (FAR) Part 77 criteria if development is close to the airport, particularly if situated within the runway approach corridors. General plans must include policies restricting the heights of structures to protect airport airspace. To ensure compliance with FAR Part 77 "Objects Affecting Navigable Airspace" submission of a Notice of Proposed Construction or Alteration (Form 7460-1) to the Federal Aviation Administration (FAA) may be required. Form 7460-1 is available on-line at <https://oeaaa.faa.gov/oeaaa/external/portal.jsp> and should be submitted electronically.

PUC Section 21688 states that "no payments shall be made from the Aeronautics Account for expenditure on any airport or for the acquisition or development of any airport, if the department determines that the height restrictions around the airport are inadequate to provide reasonable assurance that the landing and taking off of aircraft at the airport will be conducted without obstruction or will be otherwise free from hazards." The airport-owner must have sufficient control over obstructions in the airspace in the vicinity of the airport to assure that height restrictions can be maintained. This control may be in the form of ownership of any land from which obstructions may rise, air navigation (avigation) easements to guarantee maintenance of restrictions, or height limitation or land use zoning which will prohibit obstructions which would violate the obstruction standards.

California Education Code Section 17215 requires a school site investigation by the Division prior to acquisition of land for a proposed school site located within two miles of an airport runway. The Division submits recommendations to the State Department of Education for use in determining acceptability of the site. This should be a consideration prior to designating residential uses in the vicinity of an airport. The Division's school site evaluation criteria are available on-line at <http://www.dot.ca.gov/hq/planning/aeronaut/regulations.html>.

Business and Professions Code Section 11010 and Civil Code Sections 1102.6, 1103.4, and 1353 address buyer notification requirements for lands around airports and are available on-line at <http://www.leginfo.ca.gov/calaw.html>. Any person who intends to offer subdivided lands, common interest developments and residential properties for sale or lease within an airport influence area is required to disclose that fact to the person buying the property.

The protection of airports from incompatible land use encroachment is vital to California's economic future. Tracy Municipal Airport is an economic asset that should be protected through effective airport land use compatibility planning and awareness. Although the need for

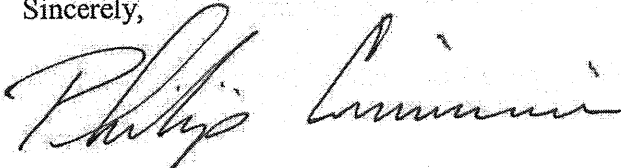
Mr. Bill Dean
February 27, 2012
Page 4

compatible and safe land uses near airports is both a local and State issue, airport land use commissions and airport land use compatibility plans are key to protecting an airport and the people residing and working in the vicinity of an airport. Consideration given to the issue of compatible land uses in the vicinity of an airport should help to relieve future conflicts between airports and their neighbors.

These comments reflect the areas of concern to the Division with respect to airport-related noise, safety, and regional land use planning issues. We advise you to contact our District 10 office concerning surface transportation issues.

Thank you for the opportunity to review and comment on this proposal. If you have any questions, please call me at (916) 654-6223, or by email at philip_crimmins@dot.ca.gov.

Sincerely,

A handwritten signature in dark ink, appearing to read "Philip Crimmins", is written over a light blue horizontal line.

PHILIP CRIMMINS
Aviation Environmental Specialist

c: State Clearinghouse, San Joaquin County ALUC, Tracy Municipal Airport



Matthew Rodriguez
Secretary for
Environmental Protection

California Regional Water Quality Control Board
Central Valley Region
Karl E. Longley, ScD, P.E., Chair

11020 Sun Center Drive, #200, Rancho Cordova, California 95670-6114
(916) 464-3291 • FAX (916) 464-4645
<http://www.waterboards.ca.gov/centralvalley>



Edmund G. Brown Jr.
Governor

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29 February 2012

MAR 1 2012

Bill Dean
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

CITY OF TRACY

CERTIFIED MAIL

7011 2970 0003 8939 8377

**COMMENTS TO NOTICE OF PREPARATION OF DRAFT ENVIRONMENTAL IMPACT
REPORT, ELLIS SPECIFIC PLAN AND ELLIS DEVELOPMENT AGREEMENT PROJECT,
SCH NO. 2012022023, SAN JOAQUIN COUNTY**

Pursuant to the State Clearinghouse's 8 February 2012 request, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) has reviewed the *Notice of Preparation of Draft Environmental Impact Report* for the Ellis Specific Plan and Ellis Development Agreement Project, located in San Joaquin County.

Our agency is delegated with the responsibility of protecting the quality of surface and groundwaters of the state; therefore our comments will address concerns surrounding those issues.

Construction Storm Water General Permit

Dischargers whose project disturb one or more acres of soil or where projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit), Construction General Permit Order No. 2009-009-DWQ. Construction activity subject to this permit includes clearing, grading, grubbing, disturbances to the ground, such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility. The Construction General Permit requires the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

For more information on the Construction General Permit, visit the State Water Resources Control Board website at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/constpermits.shtml

Phase I and II Municipal Separate Storm Sewer System (MS4) Permits¹

The Phase I and II MS4 permits require the Permittees reduce pollutants and runoff flows from new development and redevelopment using Best Management Practices (BMPs) to the maximum extent practicable (MEP). MS4 Permittees have their own development standards, also known as Low Impact Development (LID)/post-construction standards that include a hydromodification component. The MS4 permits also require specific design concepts for LID/post-construction BMPs in the early stages of a project during the entitlement and CEQA process and the development plan review process.

For more information on which Phase I MS4 Permit this project applies to, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/municipal_permits/

Industrial Storm Water General Permit

Storm water discharges associated with industrial sites must comply with the regulations contained in the Industrial Storm Water General Permit Order No. 97-03-DWQ.

For more information on the Industrial Storm Water General Permit, visit the Central Valley Water Board website at:

http://www.waterboards.ca.gov/centralvalley/water_issues/storm_water/industrial_general_permits/index.shtml.

Clean Water Act Section 404 Permit

If the project will involve the discharge of dredged or fill material in navigable waters or wetlands, a permit pursuant to Section 404 of the Clean Water Act may be needed from the United States Army Corps of Engineers (USACOE). If a Section 404 permit is required by the USACOE, the Central Valley Water Board will review the permit application to ensure that discharge will not violate water quality standards. If the project requires surface water drainage realignment, the applicant is advised to contact the Department of Fish and Game for information on Streambed Alteration Permit requirements.

If you have any questions regarding the Clean Water Act Section 404 permits, please contact the Regulatory Division of the Sacramento District of USACOE at (916) 557-5250.

Clean Water Act Section 401 Permit – Water Quality Certification

If an USACOE permit, or any other federal permit, is required for this project due to the disturbance of waters of the United States (such as streams and wetlands), then a Water Quality Certification must be obtained from the Central Valley Water Board prior to initiation of project activities. There are no waivers for 401 Water Quality Certifications.

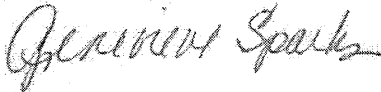
Waste Discharge Requirements

¹ Municipal Permits = The Phase I Municipal Separate Storm Water System (MS4) Permit covers medium sized Municipalities (serving between 100,000 and 250,000 people) and large sized municipalities (serving over 250,000 people). The Phase II MS4 provides coverage for small municipalities, including non-traditional Small MS4s, which include military bases, public campuses, prisons and hospitals.

If USACOE determines that only non-jurisdictional waters of the State (i.e., "non-federal" waters of the State) are present in the proposed project area, the proposed project will require a Waste Discharge Requirement (WDR) permit to be issued by Central Valley Water Board. Under the California Porter-Cologne Water Quality Control Act, discharges to all waters of the State, including all wetlands and other waters of the State including, but not limited to, isolated wetlands, are subject to State regulation.

For more information on the Water Quality Certification and WDR processes, visit the Central Valley Water Board website at:
http://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_certification/

If you have questions regarding these comments, please contact me at (916) 464-4745 or gsparks@waterboards.ca.gov.



Genevieve (Gen) Sparks
Environmental Scientist
401 Water Quality Certification Program

cc: State Clearinghouse Unit, Governor's Office of Planning and Research, Sacramento

William Dean

From: Debby Angus <debby@stanford.edu>
Sent: Tuesday, March 06, 2012 1:52 PM
To: William Dean
Subject: Re: Ellis Specific Plan comments

thank you Mr. Dean. my minimal experience with council meetings is the hot button item usually ends up pushed to last on the agenda thus being too late of a night for me (early commuter). is there a way to determine that this item will be at a specific time this evening? my main comment would be for the city to step back and once again take an overall look at the big picture of future planning for the city of tracy to make it as desirable as the cities on the west side of the altamont, e.g. are there plans to have a community bike/walk path throughout the city similar to livermore, dublin, pleasanton, san ramon, danville, etc.? have pros and cons been looked at for having commercial businesses/employment right in tracy vs. not, e.g. saratoga, atherton, etc. (yes, extravagant examples but examples nonetheless). there's such an opportunity to have tracy be the desirable, slightly less expensive place to be on "the other side of the altamont" if it can be planned out and not just thrown together by pressure from developers/politicians. maybe efforts should be more focused on extending bart towards tracy to reduce traffic congestion for all.

debby

On Mar 6, 2012, at 1:33 PM, William Dean wrote:

Debby, thank you for your comments regarding the Ellis project. The property owner/developer submitted applications to the City which we are obliged to process. At this point we're in the information gathering phase of looking at the new proposal, so your email is well timed. It allows us to consider your comments at the beginning of our review. I will include these comments, along with comments made by others, into our environmental review process, and I will keep you on the mailing list for this project.

For your information, and in case you are interested, tonight at 7pm the City Council will conduct their regular meeting which includes an item at the request of the developer to begin negotiations on a Development Agreement. This is an early step where City Council is asked whether or not staff time should be spent on negotiating; it does not request any other specific action. In case you are interested, I've attached a link to the City's website where you can download the City Council meeting agenda, and the staff report that provides additional detail. www.ci.tracy.ca.us

Sincerely,
Bill Dean, Assistant Director of Development and Engineering Services
209-831-6427

From: Debby Angus [mailto:debby@stanford.edu]
Sent: Tuesday, March 06, 2012 1:16 PM
To: William Dean
Subject: Ellis Specific Plan comments

Dear Mr. Dean,
I'm writing with comments on the City of Tracy Ellis Specific Plan and Ellis Development Agreement Initial Study. I reside at 27600 S. Corral Hollow Road and have several concerns on this project.

Traffic concerns: the catholic church at the corner of Corral Hollow and Valpico already causes very heavy traffic congestion on Sundays, backing up the four way stop all day long. Activities are starting to happen on Saturdays and weekday evenings causing back ups during those times as well. Nothing has been done to date to improve the intersection or to improve traffic. Adding 2250 residential units along with a swim park at the next intersection south will cause a drastic increase in traffic in an already heavily traveled area. Given two accidents alone on opening day of the catholic church, this added traffic will only increase potential accidents. There is also a very noticeable increase in foot and bicycle traffic on Corral Hollow. It is already very dangerous for people to walk and bike along Corral Hollow. Adding traffic will only increase this danger. Since no safety improvements have been implemented since the catholic church has opened, I'm not optimistic that any safety improvements will be added with this new subdivision and swim park. This is a liability to the City of Tracy.

Housing issues: has anyone looked into the percent of foreclosures and short sales in the Edgewood subdivision directly across from this project? When this project was submitted the first time the subdivision was over 50% foreclosures or short sales. Why on earth would the city approve another 2250 homes when so many sit empty now? What is the total percent of foreclosures and short sales in all of Tracy right now? Has anyone looked into the concept of supply and demand? Clearly the housing market is not going to pick up in Tracy so why have more empty homes, possibly leading to destruction and crime. Why approve a project that may never be built. Once demand for housing returns to Tracy, then approvals for new subdivisions should be considered. Yes, a long process, but, again, if inventory is reduced, prices go up generating higher property tax revenue for the city.

My understanding is the developer is required to set aside 4 acres per 1000 homes for park use. I don't see how this is accommodated unless you are charging residents for using what was supposed to be free park land by including the swim park as part of this land.

Commercial buildings: does anyone know if the commercial buildings on Linne between Corral Hollow and Tracy Blvd. have ever been fully leased out? My guess is no so why are we looking to build more in such close proximity?

I would appreciate you making sure I'm kept on the mailing list for notifications about this project.

thank you,
debby angus-weberski

hours: 6:00 a.m.-3:00 p.m.
Secretary to the Dean of Humanities and Sciences
Stanford University
450 Serra Mall, Building One
Stanford, CA 94305-2070
650-723-9784 - office
650-723-3235 - fax
209-483-3768 - cell

Please consider the environment before printing this email.

hours: 6:00 a.m.-3:00 p.m.
Secretary to the Dean of Humanities and Sciences

Stanford University
450 Serra Mall, Building One
Stanford, CA 94305-2070
650-723-9784 - office
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Please consider the environment before printing this email.



SAN JOAQUIN COUNCIL OF GOVERNMENTS

555 E. Weber Avenue • Stockton, California 95202

209.235.0600 • 209.235.0438 (fax)

www.sjcog.org

March 9, 2012

Chuck Winn
CHAIR

Ken Vogel
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Andrew T. Chesley
EXECUTIVE DIRECTOR

Member Agencies
CITIES OF
ESCALON,
LATHROP,
LODI,
MANTECA,
RIPON,
STOCKTON,
TRACY,
AND
THE COUNTY OF
SAN JOAQUIN

Mr. Bill Dean, Assistant Director
Development and Engineering Services
City of Tracy, 333 Civic Center Plaza, Tracy, CA 95376

**RE: ALUC REVIEW for Notice of Preparation_Ellis Specific Plan and
Development Agreement**

Dear Mr. Dean:

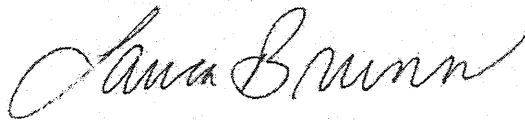
The San Joaquin Council of Governments (SJCOC), acting as the Airport Land Use Commission (ALUC), has reviewed the NOP for the Ellis Specific Plan and Development Agreement. The project would allow 2,250 residential units, 180,000 square feet of commercial uses, and a 16-acre Swim Center. The project site is located within Tracy Municipal Airport's Area of Influence (AIA), and pursuant to the State Aeronautics Act (Public Utilities Code Section 21676), the project is subject to a Consistency Determination by the San Joaquin County ALUC.

A comprehensive update to the Airport Land Use Compatibility Plan (ALUCP) for San Joaquin County's public use airports (with the exception of Stockton Metropolitan Airport) was adopted on June 25, 2009. Therefore, all subsequent projects within Tracy Municipal Airport AIA are subject to the policies and criteria within the 2009 ALUCP, forwarded on CD with this comment letter.

The ALUC requests that the DEIR contain a complete consistency analysis of the proposed land uses relative to the 2009 ALUCP zones for Tracy Municipal Airport as well as an analysis of environmental effects, as determined by the outcome of the 2009 ALUCP consistency determination.

Thank you again for the opportunity to comment. Please contact ALUC staff Laura Brunn if you have and questions or comments at (209) 235-0579, or by email at brunn@sjcog.org.

Sincerely,



Laura Brunn, Associate Regional Planner
San Joaquin Council of Governments

Cc: Terry Barrie, Division of Aeronautics, California Department of Transportation
Rod Attebery, Counsel, Neumiller & Beardslee

William Dean

From: Megan Aguirre <meaguirre@sjgov.org>
Sent: Monday, March 12, 2012 3:40 PM
To: William Dean
Subject: COMMENTS: NOP for an EIR for the Ellis Specific Plan and Ellis Development Agreement
Attachments: Ellis Specific Plan & Development Agreement, NOP.doc

Dear Mr. Dean,

San Joaquin County appreciates the opportunity to review the NOP for an EIR for the Ellis Specific Plan and Ellis Development Agreement. Comments are attached and a hard copy will follow in the mail. Please let me know if you have any questions.

Thank you,

Megan Aguirre

Associate Planner-Transportation Engineering Division
San Joaquin County
Dept. of Public Works
(209) 468-8494 (209) 468-2999 fax
meaguirre@sjgov.org

March 12, 2012

William Dean, Assistant Director
Development and Engineering Services Department
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

SUBJECT: Notice of Preparation of an Environmental Impact Report for the Ellis Specific Plan and Ellis Development Agreement

Dear Mr. Dean:

The San Joaquin County Department of Public Works has reviewed the Notice of Preparation for the above-referenced project, and our comments are as follows:

From Design Engineering:

1. Include provisions to bring Lammers and Valpico Roads up to a collector roadway standard, as per San Joaquin County standards.

From Transportation Engineering:

2. The Contents page lists the incorrect page/section for Transportation and Traffic, which should be 3-31 instead of 3-29.

Thank you for the opportunity to review and comment. Should you have questions or need additional information regarding the above comments, please contact me at (209) 468-8494.

Sincerely,

Megan Aguirre
Associate Planner

C: Alex Chetley, Senior Civil Engineer
David Mendoza, Engineering Services Manager

City of Tracy Ellis Specific Plan and Ellis Development Agreement Initial Study

By; David Anderson; vice president of Tracy Airport Association.

I have included the following documents to you today. February 22, 2012

Tracy airport, An Important community Asset, (February 22, 2012)

Instrument of Transfer – (Deed for Tracy airport), (4-26-1950)

The court appeal of the city of Watsonville, (3-15-2010)

**San Joaquin County's Aviation System Airport Land use compatibility
plan, (Final July 2009)**

California Airport Land Use Planning Hand book, (October 2011)

MARK V. CONNOLLY

Attorney at Law

CONNOLLY LAW BUILDING
121 E. 11th STREET
TRACY, CALIFORNIA 95376

Telephone (209) 836 0725
Fax (209) 832 3796
E-mail: mconnolly@connollylaw.net
www.connollylaw.net

February 8, 2012

RECEIVED

FEB 09 2012

VIA FACSIMILE, E-MAIL & U.S. MAIL

CITY OF TRACY

Bill Dean
City of Tracy
City Hall
333 Civic Center Plaza
Tracy, CA 95376

Re: Notice of Preparation of EIR
City of Tracy/Ellis Specific Plan and Ellis Development Agreement
Environmental Impact Report

Dear Mr. Dean:

I received the Notice of Preparation of Environmental Impact Report for the City of Tracy/Ellis Specific Plan and Ellis Development Agreement Environmental Impact Report.

There were no attached materials as referenced in the Notice providing a project description, location and potential environmental effects. Neither was the Initial Study attached. Could you please fax and/or e-mail the referenced documents to the fax or e-mail address shown above.

Very truly yours,


MARK V. CONNOLLY

cc: TRAQC

William Dean

From: Connollylaw Assistant <Assistant@connollylaw.net>
Sent: Wednesday, February 08, 2012 3:03 PM
To: William Dean
Subject: RE: Notice of Preparation of EIR

Mr. Dean,

Received your e-mail and we were able to open the attachment.

Thank you,

Isabel Ramirez-Jimenez
Assistant to Mark V. Connolly
Attorney at Law
121 E. 11th Street
Tracy, CA 95376
assistant@connollylaw.net
www.connollylaw.net
Telephone: (209) 836-0725
Facsimile: (209) 832-3796

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From: William Dean [<mailto:William.Dean@ci.tracy.ca.us>]
Sent: Wednesday, February 08, 2012 2:23 PM
To: Connollylaw Assistant
Cc: Mark Connolly
Subject: RE: Notice of Preparation of EIR

Hello, this email is confirmation that I received your email. Please let me know if you can open this attachment, which is also available on the City's website.

Thanks, Bill

From: Connollylaw Assistant [<mailto:Assistant@connollylaw.net>]
Sent: Wednesday, February 08, 2012 2:18 PM
To: William Dean
Cc: Mark Connolly
Subject: Notice of Preparation of EIR

Mr. Dean,

Please review the enclosed letter from Mr. Connolly dated February 8, 2012. This letter was faxed to your office and will be sent today via U.S. mail.

Please confirm receipt of this letter and e-mail.

Thank you,

Isabel Ramirez-Jimenez
Assistant to Mark V. Connolly
Attorney at Law
121 E. 11th Street
Tracy, CA 95376
assistant@connollylaw.net
www.connollylaw.net
Telephone: (209) 836-0725
Facsimile: (209) 832-3796

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Connolly Law Building
121 E. 11th Street
Tracy, CA 95376
Phone: (209) 836-0725
Fax: (209) 832-3796
mconnolly@connollylaw.net

Mark V. Connolly
Attorney at Law

RECEIVED

FEB 08 2012

Fax

CITY OF TRACY

To: Bill Dean	From: Mark V. Connolly
Fax: (209) 831-6439	Pages: 2
Phone: (209) 831-4600	Date: 2/8/2012
Re: Notice of Preparation of EIR	CC:

- Original transmittal **WILL NOT** follow: _____
- Original Transmittal **WILL** follow by: ☒ Mail ☐ Other

Please call 209-836-0725 immediately if any part of the transmission failed or was not clear.

CONFIDENTIALITY NOTICE:

If you have received this transmission in error, please immediately notify the sender by telephone at 209-836-0725 or at the address shown above. This transmission and any attachments may contain CONFIDENTIAL ATTORNEY-CLIENT PRIVILEGE/WORK PRODUCT information. This information is intended only for the use of the individual(s) or entity to whom it is intended, even if addressed incorrectly. Please destroy or delete it from your files if you are not the intended recipient and call the sender. Thank you for your compliance.

MARK V. CONNOLLY

Attorney at Law

CONNOLLY LAW BUILDING
121 E. 11th STREET
TRACY, CALIFORNIA 95376

Telephone (209) 836 0725
Fax (209) 832 3796
E-mail: mconnolly@connollylaw.net
www.connollylaw.net

February 8, 2012

VIA FACSIMILE, E-MAIL & U.S. MAIL

Bill Dean
City of Tracy
City Hall
333 Civic Center Plaza
Tracy, CA 95376

Re: Notice of Preparation of EIR
City of Tracy/Ellis Specific Plan and Ellis Development Agreement
Environmental Impact Report

Dear Mr. Dean:

I received the Notice of Preparation of Environmental Impact Report for the City of Tracy/Ellis Specific Plan and Ellis Development Agreement Environmental Impact Report,

There were no attached materials as referenced in the Notice providing a project description, location and potential environmental effects. Neither was the Initial Study attached. Could you please fax and/or e-mail the referenced documents to the fax or e-mail address shown above.

Very truly yours,



MARK V. CONNOLLY

cc: TRAQC



Edmund G. Brown Jr.
Governor

STATE OF CALIFORNIA
Governor's Office of Planning and Research
State Clearinghouse and Planning Unit



Ken Alex
Director

Notice of Preparation

February 8, 2012

RECEIVED

FEB 09 2012

To: Reviewing Agencies

CITY OF TRACY

Re: Ellis Specific Plan and Ellis Development Agreement
SCH# 2012022023

Attached for your review and comment is the Notice of Preparation (NOP) for the Ellis Specific Plan and Ellis Development Agreement draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Bill Dean
City of Tracy
333 Civic Center Plaza
Tracy, CA 95376

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

**Document Details Report
State Clearinghouse Data Base**

SCH# 2012022023
Project Title Ellis Specific Plan and Ellis Development Agreement
Lead Agency Tracy, City of

Type NOP Notice of Preparation
Description Implementation of the Ellis Specific Plan would allow a mix residential, commercial, office/professional, institutional, and recreational uses. The plan would accommodate up to a maximum of 2,250 residential units; 180,000 sf of commercial use; and a 16-acre Swim Center.

Lead Agency Contact

Name Bill Dean
Agency City of Tracy
Phone 209-831-4600
email
Address 333 Civic Center Plaza
City Tracy
Fax
State CA **Zip** 95376

Project Location

County San Joaquin
City Tracy
Region
Cross Streets Corral Hollow Road and Lammers Road
Lat / Long 37° 41' 53" N / 121° 27' 44" W
Parcel No.

Township	Range	Section	Base
----------	-------	---------	------

Proximity to:

Highways I-580
Airports Tracy Municipal
Railways UP RR
Waterways Delta Mendota Canal
Schools
Land Use TR-Ellis, Various to be established with annexation and rezoning.

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Department of Conservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 3; Delta Stewardship Council; Delta Protection Commission; Native American Heritage Commission; Public Utilities Commission; Caltrans, Division of Aeronautics; California Highway Patrol; Department of Housing and Community Development; Caltrans, District 10; Regional Water Quality Control Bd., Region 5 (Sacramento)

Date Received 02/08/2012 **Start of Review** 02/08/2012 **End of Review** 03/08/2012

Resources Agency

- ☒ Resources Agency
Nadell Gayou
- ☐ Dept. of Boating & Waterways
Nicole Wong
- ☐ California Coastal Commission
Elizabeth A. Fuchs
- ☐ Colorado River Board
Gerald R. Zimmerman
- ☒ Dept. of Conservation
Elizabeth Carpenter
- ☐ California Energy Commission
Eric Knight
- ☐ Cal Fire
Allen Robertson
- ☐ Central Valley Flood Protection Board
James Herota
- ☐ Office of Historic Preservation
Ron Parsons
- ☐ Dept. of Parks & Recreation
Environmental Stewardship Section
- ☐ California Department of Resources, Recycling & Recovery
Sue O'Leary
- ☐ S.F. Bay Conservation & Dev't. Comm.
Steve McAdam
- ☒ Dept. of Water Resources
Nadell Gayou
- ☐ Fish and Game
Dept. of Fish & Game
Scott Flint
Environmental Services Division
- ☐ Fish & Game Region 1
Donald Koch

- ☐ Fish & Game Region 1E
Laurie Harnsberger
- ☐ Fish & Game Region 2
Jeff Drongesen
- ☒ Fish & Game Region 3
Charles Armor
- ☐ Fish & Game Region 4
Julie Vance
- ☐ Fish & Game Region 5
Leslie Newton-Reed
- ☐ Habitat Conservation Program
Gabrina Gatchel
- ☐ Fish & Game Region 6
Habitat Conservation Program
Brad Henderson
- ☐ Fish & Game Region 6 IM
Inyo/Mono, Habitat Conservation Program
- ☐ Dept. of Fish & Game M
George Isaac
- ☐ Marine Region
- ☐ Food & Agriculture
Sandra Schubert
- ☐ Dept. of Food and Agriculture
Dept. of General Services
Public School Construction
- ☐ Dept. of General Services
Anna Garbeff
- ☐ Environmental Services Section
- ☐ Dept. of Public Health
Bridgette Binning
- ☐ Dept. of Health/Drinking Water
- ☒ Delta Stewardship Council
Kevan Samsam
- ☐ Independent Commissions/Boards
Delta Protection Commission
Linda Flack
- ☐ Cal EMA (Emergency Management Agency)
Dennis Castrillo

- ☒ Native American Heritage Comm.
Debbie Treadway
- ☒ Public Utilities Commission
Leo Wong
- ☐ Santa Monica Bay Restoration
Guangyu Wang
- ☐ State Lands Commission
Jennifer Deleong
- ☐ Tahoe Regional Planning Agency (TRPA)
Cherry Jacques
- ☐ Business, Trans & Housing
Caltrans - Division of Aeronautics
Philip Crimmins
- ☐ Caltrans - Planning
Terri Pencovic
- ☒ California Highway Patrol
Suzann Ikeuchi
- ☐ Office of Special Projects
- ☒ Housing & Community Development
CEQA Coordinator
Housing Policy Division
- ☐ Caltrans, District 1
Rex Jackman
- ☐ Caltrans, District 2
Marcelino Gonzalez
- ☐ Caltrans, District 3
Bruce de Terra
- ☐ Caltrans, District 4
Lisa Carboni
- ☐ Caltrans, District 5
David Murray
- ☐ Caltrans, District 6
Michael Navarro
- ☐ Caltrans, District 7
Dianna Watson

- ☐ Caltrans, District 8
Dan Kopulsky
- ☐ Caltrans, District 9
Gayle Rosander
- ☒ Caltrans, District 10
Tom Dumas
- ☐ Caltrans, District 11
Jacob Armstrong
- ☐ Caltrans, District 12
Marion Regisford
- ☐ Air Resources Board
Airport/Energy Projects
Jim Lerner
- ☐ Transportation Projects
Douglas Ito
- ☐ Industrial Projects
Mike Tollstrup
- ☐ State Water Resources Control Board
Regional Programs Unit
Division of Financial Assistance
- ☐ State Water Resources Control Board
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality
- ☐ State Water Resources Control Board
Phil Crader
Division of Water Rights
- ☐ Dept. of Toxic Substances Control
CEQA Tracking Center
- ☐ Department of Pesticide Regulation
CEQA Coordinator

- ☐ Regional Water Quality Control Board (RWQCB)
- ☐ RWQCB 1
Cathleen Hudson
- ☐ North Coast Region (1)
- ☐ RWQCB 2
Environmental Document Coordinator
- ☐ San Francisco Bay Region (2)
- ☐ RWQCB 3
Central Coast Region (3)
- ☐ RWQCB 4
Teresa Rodgers
- ☐ Los Angeles Region (4)
- ☒ RWQCB 5S
Central Valley Region (5)
- ☐ RWQCB 5F
Central Valley Region (5)
Fresno Branch Office
- ☐ RWQCB 5R
Central Valley Region (5)
Redding Branch Office
- ☐ RWQCB 6
Lahontan Region (6)
- ☐ RWQCB 6V
Lahontan Region (6)
Victorville Branch Office
- ☐ RWQCB 7
Colorado River Basin Region (7)
- ☐ RWQCB 8
Santa Ana Region (8)
- ☐ RWQCB 9
San Diego Region (9)
- ☐ Other
- ☐ Conservancy



S J C O G, Inc.

555 East Weber Avenue • Stockton, CA 95202 • (209) 235-0600 • FAX (209) 235-0468

San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP)

SJMSCP RESPONSE TO LEAD AGENCY ADVISORY AGENCY NOTICE TO SJCOG, Inc.

To: Bill Dean, Assistant Director of Development and Engineering Services, City of Tracy
Community Development Department

From: Kimberly Juarez, SJCOG, Inc.

Date: April 5, 2012

Re: **Lead Agency Project Title:** DEIR: City of Tracy/Surland Companies Development
Agreement and Ellis Specific Plan Application

Lead Agency Project Number: 2-04-SPA

Assessor Parcel Number(s): 240-140-13, -16, -18, -20, -22, & -23

Total Acres to be converted from Open Space Use: 325.28 acres

Habitat Types to be Disturbed: Agriculture (C34)

Species Impact Findings: Findings to be determined by SJMSCP biologist.

RECEIVED

APR 9 2012

CITY OF TRACY

Dear Mr. Dean:

SJCOG, Inc. has reviewed Notice of Preparation of an EIR. The proposed project consists of the execution and implementation of a Development Agreement that would establish a Program for the allocation of residential growth allotments to the project application, funding, land and design assistance for a community swim center and the implementation of the Ellis Specific Plan. The Development Agreement Program would provide eligibility for the project applicant to obtain up to 3,850 RGAs at some time in the future which would include up to 2,250 units proposed within the Ellis Specific Plan. The Ellis Specific Plan is the first phase of the Development Agreement and include the development of 2,250 residential units, a village center, open space, 180,000 square feet of commercial space, and a 20-acre, family oriented swim center. This project is located in the City of Tracy approximately 60 miles east of the San Francisco Bay, which is separated from the Central Valley by the Costal Range.

The City of Tracy is a signatory to San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Participation in the SJMSCP satisfies requirements of both the state and federal endangered species acts, and ensures that the impacts are mitigated below a level of significance in compliance with the California Environmental Quality Act (CEQA). Although participation in the SJMSCP is voluntary, lead agents should be aware that if project applicants choose against participating in the SJMSCP, they will be required to provide alternative mitigation in an amount and kind equal to that provided in the SJMSCP.

It should be noted that two important federal agencies (U.S. Army Corps of Engineers and the California Regional Water Quality Control Board) have not issued permits to the SJCOG and so payment of the fee to use the SJMSCP will not modify requirements that could be imposed by these two agencies. Potential waters of the United States [pursuant to Section 404 Clean Water Act] are believed to occur on the project site. It may be prudent to obtain a preliminary wetlands map from a qualified consultant. If waters of the United States are confirmed on the project site, the Corps and the Regional Water Quality Control Board (RWQCB) would have regulatory authority over those mapped areas [pursuant to Section 404 and 401 of the Clean Water Act respectively] and permits would be required from each of these resource agencies prior to grading the project site.

This Project is subject to the SJMSCP. Per requirements of the SJMSCP, this project must seek coverage due to required Army Corp permitting, and is subject to a case-by-case review. This can be a 90 day process and it is recommended that the project applicant contact SJMSCP staff as early as possible.

After this project is approved by the Habitat Technical Advisory Committee and the SJCOG Inc. Board, the following process must occur to participate in the SJMSCP:

- Schedule a SJMSCP Biologist to perform a pre-construction survey ***prior to any ground disturbance***
- Sign and Return Incidental Take Minimization Measures to SJMSCP staff (given to project applicant after pre-construction survey is completed)
- Pay appropriate fee to the City of Stockton based on SJMSCP findings
- Receive your Certificate of Payment and release the required permit

If you have any questions, please call (209) 235-0600.

TRACY PLANNING COMMISSION MINUTES
FEBRUARY 22, 2012

MINUTES
TRACY CITY PLANNING COMMISSION
FEBRUARY 22, 2012
7:00 P.M.
TRACY COUNCIL CHAMBERS
333 CIVIC CENTER PLAZA

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

MINUTE APPROVAL

DIRECTOR'S REPORT REGARDING THIS AGENDA:

ITEMS FROM THE AUDIENCE

In accordance with Procedures for Preparation, Posting and Distribution of Agendas and the Conduct of Public Meetings, adopted by Resolution 2008-140 any item not on the agenda brought up by the public at a meeting, shall be automatically referred to staff. If staff is not able to resolve the matter satisfactorily, the member of the public may request a Planning Commission Member to sponsor the item for discussion at a future meeting.

1. OLD BUSINESS
2. NEW BUSINESS
 - A. CONDUCT A SCOPING SESSION TO OBTAIN COMMENTS FROM THE PUBLIC ON WHAT INFORMATION SHOULD BE INCLUDED IN THE PROPOSED ELLIS SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORT
 - B. PUBLIC HEARING TO CONSIDER A GENERAL PLAN LAND USE DESIGNATION AMENDMENT OF A 10-ACRE SITE IN THE EASTLAKE AND ELISSAGARAY RANCH SUBDIVISIONS FROM PUBLIC FACILITIES TO RESIDENTIAL LOW. THE APPLICANT IS CHRIS TYLER AND THE PROPERTY OWNER IS TVC TRACY HOLDCO, LLC. APPLICATION NUMBER GPA10-0004
 - C. PUBLIC HEARING TO CONSIDER A GENERAL PLAN AMENDMENT FROM DOWNTOWN (D) TO COMMERCIAL (C) AND REZONE FROM LIGHT INDUSTRIAL (M-1) TO PLANNED UNIT DEVELOPMENT (PUD) – THE SITE INCLUDES FIVE PARCELS ON THE NORTH SIDE OF W. SIXTH STREET BETWEEN N. "B" STREET AND N. "C" STREET (615 N. "C" ST., 63 W. SIXTH ST., 69 W. SIXTH ST., 77 W. SIXTH ST., AND 99 W. SIXTH ST., TRACY; ASSESSOR'S PARCEL NUMBERS 235-066-08 THRU 12) – THE APPLICANT IS STAN SHORE FOR THE STAN SHORE TRUST
3. ITEMS FROM THE AUDIENCE
4. DIRECTOR'S REPORT

5. ITEMS FROM THE COMMISSION

6. ADJOURNMENT

* * * * *

The Planning Commission meeting was called to order by Chair Manne at 7:00 p.m.

The pledge of allegiance was led by Chair Manne.

ROLL CALL: Roll call found Commissioner Alexander, Commissioner Johnson, Commissioner Mitracos, Vice Chair Ransom and Chair Manne present. Also present were staff members Kimberly Matlock, Assistant Planner; Alan Bell, Senior Planner; Bill Dean, Assistant Director of Development Services; Bill Sartor, Assistant City Attorney; and Elizabeth Silva, Recording Secretary.

MINUTES

It was moved by Vice Chair Ransom and seconded by Commissioner Johnson to approve the minutes of December 21, 2011 and January 11, 2012 as written. Voice vote found all in favor; passed 5-0-0-0.

DIRECTOR'S REPORT REGARDING THIS AGENDA – None

ITEMS FROM THE AUDIENCE – None

1. OLD BUSINESS – None

2. NEW BUSINESS

A. CONDUCT A SCOPING SESSION TO OBTAIN COMMENTS FROM THE PUBLIC ON WHAT INFORMATION SHOULD BE INCLUDED IN THE PROPOSED ELLIS SPECIFIC PLAN ENVIRONMENTAL IMPACT REPORT

The staff report was provided by Bill Dean, Assistant Director of Development Services. Mr. Dean stated the purpose of this item was not to answer questions about the outcomes of the environmental analyses but rather to discuss what should be included in the analyses for the Environmental Impact Report (EIR). Mr. Dean introduced Laura Worthington-Forbes of RBF Consulting. Ms. Worthington-Forbes provided an electronic presentation. Ms. Worthington-Forbes provided a brief overview of the Environmental Review process, and where they were in the process thus far. Ms. Worthington-Forbes indicated the Ellis Specific Plan (ESP) was a comprehensive planning document serving as the zoning for the Ellis project site. Ms. Worthington-Forbes stated the project was for up to 2250 residential units, and commercial and recreational uses. Ms. Worthington-Forbes provided a brief summary of issues which had been identified for review in the EIR for the Ellis Project. Ms. Worthington-Forbes stated the intent for this item was to solicit comments for the Ellis EIR, and the comments should be submitted to Bill Dean, Assistant Director of Development Services.

Commissioner Johnson asked if this was essentially a do-over of the previous project application or if there were changes to the proposed project. Mr. Dean stated the plan itself was essentially the same with a few minor changes. Commissioner Johnson asked for specifics on the changes. Mr. Dean stated he did not have the specifics at this time and staff was in the process of learning from the applicant what the changes would be. Mr. Dean stated the nature of the changes would be to make the document more of a zoning document, and tighten the standards.

Commissioner Alexander asked what the major concerns were which had resulted in the project being brought to court. Mr. Dean stated the previous project, which was not the focus of this discussion, had members of TRAQC concerned with various analyses that were performed such as traffic, air quality and water resources.

Vice Chair Ransom asked for information regarding the airport and the concerns with the approach to the airport zone and if there was a solution to address the concerns. Mr. Dean stated he did not have an answer this evening but it was a question which would be looked at as the project goes forward.

Chair Manne opened the public hearing.

Mark Connolly, 121 East Eleventh Street, addressed the Commission on behalf of TRAQC. Mr. Connolly provided the Commission with a letter to staff regarding the previous project, and copies of the statement of Decision from the Judge who heard the case. Mr. Connolly stated he had gone through the Initial Study, and also the EIR for the previous project and he noted some major changes, however some of the changes required by the Judge's decision had not occurred. Mr. Connolly stated one of the issues not addressed was inadequacy of the description of the project. Mr. Connolly stated if the project was built out, the residents would only have 3 acres of passive use park which was less than the 4 acres minimum and the 5 acre objective, and the other acreage would be made up of the aquatic center which they would have to pay a fee to use. Mr. Connolly stated at best this project was providing less than the minimum open-space parkland than would be required. Mr. Connolly indicated the language in the Initial Study was ambiguous regarding complying with the Airport Land Use Plan, and the Airport zones. Mr. Connolly indicated that he and the Judge disagreed that there was no study needed for the natural gas pipelines running under the site. Mr. Connolly stated in terms of the airport they were taking the same argument that it did not need to be studied but would be studied as a courtesy. Mr. Connolly stated this project did not provide one single benefit beyond any other development project.

Carol Dominguez of 1580 Hearthsong Drive, Manteca addressed the Commission. Mrs. Dominguez stated she was currently serving on Pipeline Safety Trust's newly formed National Pipeline Safety Advocacy Committee. Mrs. Dominguez stated she was not here as an expert, rather was here a citizen concerned with the City's plan of development over PG&E's pipelines currently located in rural areas. Mrs. Dominguez stated she had taken on PG&E with the CPUC regarding the planned development of the sports facility on the antenna farm, and won her case. Mrs. Dominguez stated it was the City Council who had misspent \$4.5 million on the sports facility. Mrs. Dominguez indicated she was surprised the City was using the same consulting firm that had produced the previous EIR. Mrs. Dominguez stated written comments were made during the review period regarding the safety and of the natural gas pipelines. Mrs. Dominguez stated the response in the FEIR was "operation of the pipelines by PG&E and construction activities by project contractors would be in accordance with State and Federal regulations

regarding pipeline operations." which did not address the issues raised in the comment. Mrs. Dominguez stated the City had argued comments made at later hearings regarding these safety concerns were not relevant. Mrs. Dominguez stated on December 16, 2011 commenters had again argued a 660 foot setback was required. Mrs. Dominguez stated the analysis and responses regarding the setback were insufficient. Mrs. Dominguez stated there was no analysis regarding why a 100 foot setback was sufficient, and a 660 foot setback was unnecessary. Mrs. Dominguez stated she had brought documents and requested the documents be reproduced for City Council and the Planning Commission. Mrs. Dominguez stated she had brought a study which provided the formula for determining the explosion zone, and therefore how far a setback should be. Mrs. Dominguez stated she also brought the Pipeline Safety Trust's Landowners Guide to Pipelines, and the National Transportation Safety Board's report on the PG&E San Bruno pipeline rupture and fire. Mrs. Dominguez stated she used to come and talk about the pipelines and people would respond to her that it could never happen; and since then, San Bruno happened. Mrs. Dominguez stated this project as well as any other project on the PG&E pipelines was out of the question, and was a complete and utter disregard for the public safety.

Dave Anderson, Vice President of the Tracy Airport Association addressed the Commission. Mr. Anderson stated he wanted to discuss the impact of the project on the Tracy Airport. Mr. Anderson stated the City was obligated by Title 49 of the U.S. Code to protect the Airport from encroachment and required to mitigate any risks. Mr. Anderson stated the City was required to operate the airport to perpetuity or return it to the Federal Government, and he had included a copy of the deed to the airport for the record. Mr. Anderson stated part of the process of developing around airports; the Public Utility Code required the Airport Land Use Commission and the City to use the Airport Planning Guide, which he had included. Mr. Anderson indicated the City was obligated to use the most current information to determine the safety of the airport, as was determined in a lawsuit in Watsonville where the Judge ruled that the City was obligated to use all of and the most recent of information in determining the safety of the airport and its zones. Mr. Anderson stated in the Surland and Tracy versus TRAQC decision, the Judge included this ruling in his decision. Mr. Anderson stated the safety zones were implemented after a jet landed in an ice cream parlor at the end of a runway in Sacramento in 1976. Mr. Anderson stated the swimming pool in the Ellis project would be built at the end of the runway. Mr. Anderson stated in 2008 in Las Vegas there were engine failures which resulted in fatalities when the aircrafts landed in the neighborhood built near the end of the airport. Mr. Anderson stated the Airport Master Plan calls for the City to purchase the land at the end of the runway as a safety zone, and it hasn't been done, though it has been in the plan since 1996. Mr. Andersons stated before homes were built across the street from the airport, many pilots went before Council and said it was a bad idea to build houses near the airport, and noise would be a problem. Mr. Anderson added that last year representatives of the City and the FAA met with the residents of those homes who were complaining about the noise of the Airport. Mr. Anderson stated Ellis would be right at the departure part of the runway. Mr. Anderson stated the City should look at alternative sites for this project.

Chair Manne asked Mr. Anderson if there was air traffic over Glenbriar Estates, as that was the neighborhood he lived in. Mr. Anderson answered yes. Chair Manne asked if these concerns had been voiced before that project was built. Mr. Anderson answered yes. Chair Manne asked what the result was of those comments. Mr. Anderson stated the City blew them off. Mr. Anderson added there was a school there that should not be there because it was too close to the center line of runway, and Caltrans had told the City not to build it there.

Commissioner Mitracos asked if it was correct that Caltrans had jurisdiction over a portion of this, and the FAA had some requirements also. Mr. Anderson stated that was correct. Commissioner Mitracos asked if any of the parameters had changed in the last two to three years. Mr. Anderson stated the size of the protection zones around the airport had increased in the last few years, and there was more legislation regarding protecting the airports. Commissioner Mitracos stated Caltrans had made recommendations, but not mandates or the project would not have been built. Mr. Anderson stated the City had ultimate authority about what it puts where. Commissioner Mitracos asked what the role of the FAA was in regulating this issue. Mr. Anderson stated the FAA had specific stipulations protecting in the area above the airport, but not what goes on the ground. Mr. Anderson said it was the City's responsibility to act to protect its citizens and it shouldn't build houses near an airport, or over natural gas pipelines, or even near rail lines.

Commissioner Alexander stated he remembered an expert from the FAA had come to the previous meeting and indicated he felt the project was safe. Mr. Anderson stated he was not an expert from the FAA, he was an expert hired by Surland who used to work for the FAA. Commissioner Alexander stated the gentleman had said he had over thirty years' experience with the FAA. Mr. Anderson stated he himself was an expert too, as a pilot licensed by the FAA.

Stephen Bradford, a Tracy resident, addressed the Commission. Mr. Bradford stated he would like to see urban heat islands addressed in the EIR. Mr. Bradford stated they had been identified by NASA and they were contributing to global warming. Mr. Bradford stated as the heat islands grow, the demand for energy grows. Mr. Bradford stated a lot could be done to mitigate the impact of the project through the design. Commissioner Alexander asked if Mr. Bradford had brought any specific information on the issue. Mr. Bradford stated he had not brought anything; however he found the information on the NASA website.

Shelley Simonich of 1407 Aldacourrou Street addressed the Commission. Ms. Simonich stated no one had brought up the issue of the values of the homes in the City. Ms. Simonich stated when Edgewood was first built there was a lot of excitement, but after the homes were built, the values took a dip at least partly due to the noise of the ACE train. Ms. Simonich indicated that she could imagine the noise from an airplane coming in was not as loud as the ACE train. Ms. Simonich asked that the home values be considered, as they will affect a one to two mile radius from the homes in the project.

Chair Manne stated he could vouch for the noise of the ACE train.

Chair Manne closed the public hearing.

Commissioner Alexander stated he wished a representative from PG&E was present to ask questions regarding the pipeline issue. Vice Chair Ransom stated the concern has been included in the scoping process. Mr. Dean stated the comment regarding the pipelines was noted.

Chair Manne asked if SJCOG had any comments regarding the project. Mr. Dean stated the NOP and Initial Study had been routed in triplicate to SJCOG and no comments had been received to his memory.

B. PUBLIC HEARING TO CONSIDER A GENERAL PLAN LAND USE DESIGNATION AMENDMENT OF A 10-ACRE SITE IN THE EASTLAKE AND ELISSAGARAY RANCH SUBDIVISIONS FROM PUBLIC FACILITIES TO RESIDENTIAL LOW. THE APPLICANT IS CHRIS TYLER AND THE PROPERTY OWNER IS TVC TRACY HOLDCO, LLC. APPLICATION NUMBER GPA10-0004

Kimberly Matlock, Assistant Planner provided the staff report. Mrs. Matlock indicated the item was for a proposed General Plan Land Use Designation amendment. Mrs. Matlock stated the site was a ten acre site located within the Elissagaray Ranch and Eastlake residential subdivisions. Mrs. Matlock stated the subject site was originally designated residential low, and in 2006-2011 General Plan update it was re-designated as Public Facilities to match other sites in the City that had been set aside as school or other public facility uses. Mrs. Matlock indicated the proposal was to change the designation from Public Facilities to Residential Low which would allow schools and other public facilities, single family homes, parks, places of worship, recreational uses, and other community centers. Mrs. Matlock stated public school was an allowable use in both land use designations. Mrs. Matlock indicated the application did not include any development proposal. Mrs. Matlock stated staff did recognize the school districts importance in this issue, and had reached out to the Tracy Unified School District (TUSD) on the application. Mrs. Matlock stated staff was told the school district had no commitment to build a school on this site at the current time, and was not opposed to the proposed amendment. Mrs. Matlock indicated staff had reached out to a much larger radius for the public hearing notice. Mrs. Matlock stated staff had received several comments regarding the application in which the primary concerns were regarding high density residential, and low income housing. Mrs. Matlock stated staff recommended approval of the application.

Chair Manne asked for clarification that if the application was approved, it did not preclude TUSD from building a school on the site. Mrs. Matlock answered that it did not.

Commissioner Mitracos asked for information regarding consistency standards regarding the development of the site. Mrs. Matlock stated the General Plan specified a density range for the Low Density Residential, and on the 10 acre site there could be a range of 21 to 58 homes. Mrs. Matlock stated the lot sizes would be similar to what is in the surrounding area, and architecture would be of the same standards or higher as the City does have adopted architectural standards for residential development. Commissioner Mitracos stated the neighborhood was built to the lower density range, and it could go to the higher range. Mr. Dean stated the designation of residential low would allow up to 5.8 units per acre which was consistent with its surroundings. Commissioner Mitracos stated once the zoning was there, there would not be any Planning Commission review. Mr. Dean stated the application was the first step in the process, and step two would be to look at the zoning of the site and ensure it was consistent with the General Plan, in this case PUD. Mr. Dean stated after that, in order to go through with the development of houses on the site, the project would have to go

through the subdivision process which is where the Commission was accustomed to reviewing the architecture, and the lay-out of the neighborhood. Mr. Dean stated should an application come before staff, it would be evaluated against City Standards, and the standards of the existing neighborhood. Commissioner Mitracos stated his concern was that the neighbors would be surprised by what is developed, but staff was saying there would still be an opportunity for public review. Mr. Dean stated that was correct.

Commissioner Mitracos stated he had spoken to representative of TUSD regarding the letter dated August 17, 2010 which references a Master Plan Facilities Analysis which was evidently still not complete. Commissioner Mitracos indicated the representative had stated there was a time constraint regarding how long TUSD could hold the property, and asked for information on the time constraint. Mr. Dean stated he did not have the exact numbers in mind; however there was a time limit in which the School District could have a hold on the land unless they have entered into an agreement with the private property owner. Commissioner Mitracos asked if in the future the site does not get developed, and the school district decided to go ahead and build the site, would the site have to be rezoned again. Mr. Dean answered no; it would be an allowable use in the Residential Low designation.

Chair Manne opened the public hearing.

Chris Tyler, 3208 Wycliffe Drive, Modesto addressed the Commission as the applicant and representative of the property owner. Mr. Tyler stated the entitlements of the subdivisions were done in the early 1990s and the original designation was Residential Low. In 2006 the City changed the proposed school site to Public Facilities. Mr. Tyler stated at that time there was still a development agreement which extended until 2007. Mr. Tyler indicated that it was clear from his correspondence with TUSD that they were not sure yet if the school was needed, and if it was, there was a variety of other viable sites that were available for the school. Mr. Tyler stated he had discussions with the neighbors in the area, and was surprised that the feedback he received was not concern about not building the school, but rather was they wanted something of quality to be built at the site.

Commissioner Mitracos asked for clarification of a statement Mr. Tyler made in the letter he had written. Mr. Tyler stated that what he meant by that statement was there was a contractual obligation to go back to the original home builders to ask if they wish to buy the site back, and there would naturally be some consistency in the design if they were to buy it; however he would not rely on that, and would keep the design standards for any design of the property.

Commissioner Johnson commended Mr. Tyler on his effort to do community outreach, and willingness to include his intentions on the letter to Ms. Goble.

Commissioner Alexander asked if TUSD had expressed why they chose not to go forward with a school at this site. Mr. Tyler stated at the time they felt they would need a

school in the area given the student generation rates that were projected; however they had found a way to accommodate the students elsewhere, and growth was happening more on the west side of Tracy.

Kelli Goble, 1201 Citadelle Street, addressed the Commission. Mrs. Goble stated her house backs up to the dirt lot. Mrs. Goble stated they had purchased the home with the hope that school would be built, but that ship had sailed. Mrs. Goble stated she would like to see something built there, and her concern was that there would not be 58 units. Mrs. Goble stated she wanted to see something similar to what was in the area and that it would not bring down the value of her home further. Chair Manne asked if Mrs. Goble would rather see a school built on the lot, or homes similar to hers. Mrs. Goble answered she would rather see homes built, as her children were older and in high school, and there were not enough young children in the area to warrant the school being built now.

Ubbo Coty, 738 Harold Smith Drive, addressed the Commission. Mr. Coty stated he was at the meeting where Mr. Tyler came to the Hidden Lake Homeowner's Association. Mr. Coty stated he asked Mr. Tyler what was his definition of a home and Mr. Tyler would not answer. Mr. Coty stated he was disturbed by that. Mr. Coty stated that he did not want to see more homes there, to bring down the value of the homes. Mr. Coty stated Hidden Lake prided itself on the lake, and he was concerned by the fact that a new development may use the name Hidden Lake. Mr. Coty further stated he was concerned by speeding traffic in the area, and wanted to know if there would be a traffic study in the area. Mr. Dean stated that the infrastructure in the area was designed to accommodate a lot more traffic than was currently in the area. Mr. Dean further stated traffic from a school site would have been more than the traffic from homes being developed on the site. Mr. Dean indicated speeding was a separate issue from the need for a traffic study which addressed the width of the street and other issues, and speeding traffic was more of traffic calming and could be addressed through Ripon Bhatia, Traffic Engineer.

Vice Chair Ransom asked if the zoning should have always been Residential Low as opposed to being changed to Public Facilities. Mr. Dean stated he appreciated the question and at the point in time it was accurate as to the intended land use for the property. Mr. Dean stated he wanted to make a comment about the nature of the quality of development. Mr. Dean stated that what was unique about the Planned Unit Development Zone was the standards were embodied in the project you are approving, and if at some point in the future, when an application gets approved for architecture and site layout that becomes fixed and becomes the zoning for the site. Vice Chair Ransom asked the applicant to verify that there were no immediate development plans for the site. Mr. Tyler stated there were no plans for the site, and this was just a step in the process. Mr. Tyler stated he was not opposed to a school and would like to still ask TUSD if they were interested in the site, but in his opinion that was not likely to happen.

Casey Goodall, Associate Superintendent for Business of TUSD, 1875 West Lowell Avenue, addressed the Commission. Mr. Goodall stated he came to TUSD in 1994 and at that time the issue was growth or too much growth. Mr. Goodall stated at the time, Bohn School did not appear to be able to handle the growth of the new development, but what happened was the growth in the Bohn area went down as this development went up; and Poet Christian was in the same area and had about the same capacity. Mr. Goodall further stated there was a five year timeline to protect citizens from School Districts tying up all the property. Mr. Goodall further indicated that as much as they would like to build the school, it didn't appear that it would be needed at this time. Mr. Goodall stated the school boundaries for elementary schools were smaller than those for the high schools, and there would not be a lot of growth within the elementary school boundaries.

Shelly Simonich of 1407 Aldacourrou Street addressed the Commission. Ms. Simonich stated she lived near the park on Dominique Street and was a real estate agent in the City. Ms. Simonich stated her concern was the value of the homes. Ms. Simonich stated the builder of a home was very important to the value of the homes, and if KB homes were built in the Pulte Homes area, the value of the area would go way down. Ms. Simonich indicated she was asking that there be more detail in the specs for the homes that may be built on the site. Ms. Simonich further stated the lot size should be large like the homes surrounding the lot. Vice Chair Ransom indicated Mr. Dean had stated that until there was a project, there would be no information available, and further, that the City could not discriminate on who the builder is or what options would be offered. Mr. Dean stated the City had no authority on who could develop the land or what goes on inside the home. Ms. Simonich asked about lot size. Mr. Dean stated that lot size was a land use issue, and would be regulated with the development application. Ms. Simonich stated that the lot size was important to the value of a home.

Edward Thomas of 2606 Ozark Drive addressed the Commission. Mr. Thomas stated that he had heard TUSD held an option on the property and he had not heard how long the option was for. Mr. Goodall stated the 5 year option expired about 12 years ago. Mr. Thomas asked why the owner had to wait for 12 years to do something. Mr. Dean stated the application had just been submitted 2 years ago,

Mariah, a resident of Elissagaray Ranch, addressed the Commission. Mariah stated she had purchased the home hoping the school would be built. Mariah stated she felt the reason why Bohn School was not overfilled because a lot of the residents wanted to transfer into Jefferson School District. Mariah further stated she did not want to see the lot sizes go down, and devalue her home.

Vice Chair Ransom asked for clarification that if this application was approved, a school could still be built on the site. Mr. Dean stated the application was to rezone to Residential Low, and schools were an allowed use for that designation. Mariah stated she would personally like to see a school built on the site.

Ubbo Coty addressed the Commission and stated he wanted to clarify that if the owner was allowed to rezone the property and sell the property for a profit, there was nothing to prevent them from the new owner from building whatever they wished. Mr. Coty further stated the new owner may want to build Section-8 housing. Chair Manne stated that if anything were to be built it would have to be approved by staff and Planning Commission, and maybe by City Council.

Lynda Gadd of 2689 Garazi Court addressed the Commission. Ms. Gadd stated she wanted to bring up crime in the area. Ms. Gadd stated the area was like an island and there had been an increase of crime in recent years. Ms. Gadd stated she felt having something built there would be good, but she was concerned with what was coming into the neighborhood.

Mariah, a citizen of Elissagaray Ranch asked what the possibility was to have a rezoning for Jefferson School District. Mr. Dean stated that was a school district issue and staff could not comment on that.

Don Abris, 1145 Dahlia Court, addressed the Commission. Mr. Abris stated he shared the comments of the previous commenters. Mr. Abris stated when he bought his home he had expected the school to be built. Mr. Abris stated Bohn School was not rated well, and he had to take his children to Manteca. Mr. Abris asked if the applicant had considered building a private school instead of a public school.

Commissioner Mitracos stated he appreciated that Mr. Tyler had made the effort to contact the residents. Commissioner Mitracos stated it was hard to predict the numbers for schools, and he felt this application made sense, and it did not preclude a school being built.

Commissioner Johnson stated he appreciated the input. Commissioner Johnson stated he was confident that the Commission would protect the interest of the citizens.

Chair Manne stated he appreciated the citizens coming out for the issue, and he had a similar issue in his neighborhood. Chair Manne stated this particular issue only affected the property owner at this point. Chair Manne stated the concerns which were raised needed to be brought back when there was a development application.

It was moved by Vice Chair Ransom and seconded by Commissioner Alexander that the Planning Commission recommend that the City Council approve an amendment to the General Plan land use designation of the 10-acre site in the Eastlake and Elissagaray Ranch subdivisions from Public Facilities to Residential Low. Voice vote found all in favor; passed 5-0-0-0.

Chair Manne called a five minute recess, and called the meeting to order at 9:36.

- C. PUBLIC HEARING TO CONSIDER A GENERAL PLAN AMENDMENT FROM DOWNTOWN (D) TO COMMERCIAL (C) AND REZONE FROM LIGHT INDUSTRIAL (M-1) TO PLANNED UNIT DEVELOPMENT (PUD) – THE SITE INCLUDES FIVE PARCELS ON THE NORTH SIDE OF W. SIXTH STREET BETWEEN N. "B" STREET AND N. "C" STREET (615 N. "C" ST., 63 W. SIXTH ST., 69 W. SIXTH ST., 77 W. SIXTH ST., AND 99 W. SIXTH ST., TRACY; ASSESSOR'S PARCEL NUMBERS 235-066-08 THRU 12) – THE APPLICANT IS STAN SHORE FOR THE STAN SHORE TRUST

The staff report was provided by Alan Bell, Senior Planner. Mr. Bell provided several maps of the property, and current and proposed zoning. Mr. Bell stated the application was for a rezone from Light Industrial to Planned Unit Development (PUD). Mr. Bell stated staff had received an inquiry for an auto service which was not an allowable use under the current zoning. Mr. Bell stated staff had received an application from the property owner to amend the General Plan and the zoning to allow for the uses proposed. Mr. Bell stated staff wanted to be sensitive to the homes across the alley, and included some development standards and behavior requirements not typically included in approvals for commercial or industrial projects. Mr. Bell stated the applicant was present as well as the proposed auto service business owner to answer any questions the Commission may have. Mr. Bell stated staff recommended approval of the application.

Commissioner Mitracos asked for information regarding the special landscaping. Mr. Bell stated in 1995 the site on the corner had no driveway on either Sixth or "C" Street. Mr. Bell further stated there was an application for a proposed driveway and a parking area, which did not leave enough room for required landscaping, and it was reduced to a two foot strip of landscaping on a portion of the property. Commissioner Mitracos stated he thought this was a creative way to find a use for the property without forgoing the long term vision.

Commissioner Johnson stated he felt the PUD was a powerful tool in this situation. Commissioner Johnson asked if, because it was a PUD, anything proposed on the site would have to come back to the Commission. Mr. Bell stated that the PUD Ordinance in Tracy was a bit cumbersome, and a new building would require a Planning Commission approval.

Commissioner Johnson asked for clarification on the requirement that uses had to be inside uses. Mr. Bell stated the five businesses would not be able to store merchandise or vehicles outside, or work on vehicles outside, due to proximity to residential uses.

Chair Manne opened the public hearing.

Stan Shore, 615 C Street addressed the Commission as the applicant and owner of one of the five parcels. Mr. Shore stated he had listed the property, and it was listed for 15 months. Mr. Shore further stated that he noticed within the first 6 months there was very little traffic on the street. Mr. Shore indicated in the 15 months there were only 5 serious inquiries. Mr. Shore stated he familiarized himself with the City's master plan, and it hinged on the UPRR property being developed, which was going to be some time in the future. Mr. Shore stated he was in favor of the PUD because it would get the location occupied, they would clean the place up, and Mr. Shore stated he did not have a problem with the landscaping requirement. Mr. Shore indicated the auto repair business would be painting, installing new lighting and signs, and would be sharpest building on the street.

Mr. Dean stated that in all the PUDs he had been involved with, this was the most creative approach to try to work with the situation.

Chair Manne closed the public hearing.

Vice Chair Ransom stated it would change the look of the building and would be a good use and hopefully would inspire other sites in the area.

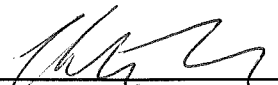
Chair Manne stated there was a building in Livermore that was a similar shape which restored classic cars, and was a museum.

It was moved by Commissioner Mitracos and seconded by Commissioner Alexander that the Planning Commission recommend that the City Council take the following action: 1. Approve the General Plan Amendment from Downtown (D) to Commercial (C), and; 2. Approve the rezoning of the site from Light Industrial (M-1) to Planned Unit Development (PUD) including the Concept, Preliminary and Final Development Plans. Voice vote found all in favor; passed 5-0-0.

3. ITEMS FROM THE AUDIENCE – None
4. DIRECTOR'S REPORT – None
5. ITEMS FROM THE COMMISSION – None
6. ADJOURNMENT

It was moved by Vice Chair Ransom and seconded by Commissioner Mitracos to adjourn.

Time: 10:02 p.m.



CHAIR



STAFF LIAISON



B Air Quality / GHG Data

Ellis Specific Plan
San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	80	1000sqft
Unrefrigerated Warehouse-No Rail	40	1000sqft
City Park	16	Acre
Apartments High Rise	399	Dwelling Unit
Apartments Mid Rise	1116	Dwelling Unit
Single Family Housing	735	Dwelling Unit
Strip Mall	60	1000sqft

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s)

Utility Company

Pacific Gas & Electric Company

Climate Zone 2

2.7

Precipitation Freq (Days)

1.3 User Entered Comments

45

Project Characteristics -

Land Use - Lot acreage from Ellis Specific Plan

Construction Phase - No construction, operational run only

Vehicle Trips -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	20.09	0.89	59.70	0.14		0.00	7.29		0.00	7.28	935.89	2,951.75	3,887.64	4.46	0.05	3,997.86
Energy	0.27	2.28	1.02	0.01		0.00	0.18		0.00	0.18	0.00	6,268.16	6,268.16	0.21	0.11	6,306.96
Mobile	12.24	60.28	97.35	0.33	28.55	1.70	30.25	0.53	1.53	2.06	0.00	28,340.25	28,340.25	0.70	0.00	28,354.98
Waste						0.00	0.00		0.00	0.00	417.87	0.00	417.87	24.70	0.00	936.47
Water						0.00	0.00		0.00	0.00	0.00	698.95	698.95	11.08	0.29	1,020.25
Total	32.60	63.45	158.07	0.48	28.55	1.70	37.72	0.53	1.53	9.52	1,353.76	38,259.11	39,612.87	41.15	0.45	40,616.52

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	13.96	0.15	12.84	0.00		0.00	0.07		0.00	0.07	0.00	19.42	19.42	0.01	0.00	19.71
Energy	0.23	1.99	0.89	0.01		0.00	0.16		0.00	0.16	0.00	5,296.82	5,296.82	0.18	0.09	5,329.60
Mobile	10.86	55.75	85.34	0.27	23.45	1.41	24.86	0.43	1.27	1.71	0.00	23,597.48	23,597.48	0.60	0.00	23,610.10
Waste						0.00	0.00		0.00	0.00	104.47	0.00	104.47	6.17	0.00	234.12
Water						0.00	0.00		0.00	0.00	0.00	576.56	576.56	8.86	0.23	833.70
Total	25.05	57.89	99.07	0.28	23.45	1.41	25.09	0.43	1.27	1.94	104.47	29,490.28	29,594.75	15.82	0.32	30,027.23

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Density
 Increase Diversity
 Improve Walkability Design
 Improve Destination Accessibility
 Increase Transit Accessibility
 Improve Pedestrian Network
 Provide Traffic Calming Measures
 Limit Parking Supply
 Expand Transit Network
 Increase Transit Frequency

Implement Trip Reduction Program
Transit Subsidy
Implement Employee Parking CashOut
Provide Riade Sharing Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	10.86	55.75	85.34	0.27	23.45	1.41	24.86	0.43	1.27	1.71	0.00	23,597.48	23,597.48	0.60	0.00	23,610.10
Unmitigated	12.24	60.28	97.35	0.33	28.55	1.70	30.25	0.53	1.53	2.06	0.00	28,340.25	28,340.25	0.70	0.00	28,354.98
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	2,629.41	2,856.84	2421.93	7,627,807	6,274,180
Apartments Mid Rise	7,354.44	7,990.56	6774.12	21,334,919	17,548,834
City Park	25.44	25.44	25.44	54,311	43,918
General Office Building	880.80	189.60	78.40	1,594,989	1,289,774
Single Family Housing	7,033.95	7,408.80	6445.95	20,294,860	16,693,343
Strip Mall	2,659.20	2,522.40	1225.80	3,749,804	3,033,775
Unrefrigerated Warehouse-No Rail	103.60	103.60	103.60	302,461	247,234
Total	20,686.84	21,097.24	17,075.24	54,959,151	45,131,058

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments High Rise	10.80	7.30	7.50	45.60	19.00	35.40
Apartments Mid Rise	10.80	7.30	7.50	45.60	19.00	35.40
City Park	9.50	7.30	7.30	33.00	48.00	19.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	2,997.20	2,997.20	0.14	0.05	3,015.99
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	3,632.64	3,632.64	0.16	0.06	3,655.41

NaturalGas Mitigated	0.23	1.99	0.89	0.01		0.00	0.16		0.00	0.16	0.00	2,299.62	2,299.62	0.04	0.04	2,313.61
NaturalGas Unmitigated	0.27	2.28	1.02	0.01		0.00	0.18		0.00	0.18	0.00	2,635.52	2,635.52	0.05	0.05	2,651.55
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CC
Land Use	kBTU	tons/yr										MT/yr					
Apartments High Rise	5.34425e+006	0.03	0.25	0.10	0.00		0.00	0.02		0.00	0.02	0.00	285.19	285.19	0.01	0.01	286
Apartments Mid Rise	1.49478e+007	0.08	0.69	0.29	0.00		0.00	0.06		0.00	0.06	0.00	797.67	797.67	0.02	0.01	802
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
General Office Building	1.384e+006	0.01	0.07	0.06	0.00		0.00	0.01		0.00	0.01	0.00	73.86	73.86	0.00	0.00	74.
Single Family Housing	2.6717e+007	0.14	1.23	0.52	0.01		0.00	0.10		0.00	0.10	0.00	1,425.72	1,425.72	0.03	0.03	1,43
Strip Mall	737400	0.00	0.04	0.03	0.00		0.00	0.00		0.00	0.00	0.00	39.35	39.35	0.00	0.00	39.
Unrefrigerated Warehouse-No Rail	257200	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	13.73	13.73	0.00	0.00	13.
Total		0.26	2.29	1.01	0.01		0.00	0.19		0.00	0.19	0.00	2,635.52	2,635.52	0.06	0.05	2,65

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CC
Land Use	kBTU	tons/yr										MT/yr					
Apartments High Rise	4.66058e+006	0.03	0.21	0.09	0.00		0.00	0.02		0.00	0.02	0.00	248.71	248.71	0.00	0.00	250
Apartments Mid Rise	1.30356e+007	0.07	0.60	0.26	0.00		0.00	0.05		0.00	0.05	0.00	695.63	695.63	0.01	0.01	699

City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	1.18204e+006	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00	0.00	63.08	63.08	0.00	0.00		63.
Single Family Housing	2.33664e+007	0.13	1.08	0.46	0.01		0.00	0.09		0.00	0.09	0.00	1,246.92	1,246.92	0.02	0.02		1,25
Strip Mall	630030	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	33.62	33.62	0.00	0.00		33.
Unrefrigerated Warehouse-No Rail	218620	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	11.67	11.67	0.00	0.00		11.
Total		0.24	1.99	0.90	0.01		0.00	0.16		0.00	0.16	0.00	2,299.63	2,299.63	0.03	0.03		2,31

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments High Rise	1.46136e+006					425.13	0.02	0.01	427.79
Apartments Mid Rise	4.08742e+006					1,189.08	0.05	0.02	1,196.53
City Park	0					0.00	0.00	0.00	0.00
General Office Building	893600					259.96	0.01	0.00	261.59
Single Family Housing	5.03812e+006					1,465.65	0.07	0.03	1,474.83
Strip Mall	803400					233.72	0.01	0.00	235.18
Unrefrigerated Warehouse-No Rail	203200					59.11	0.00	0.00	59.48
Total						3,632.65	0.16	0.06	3,655.40

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e

Land Use	kWh	tons/yr				MT/yr			
Apartments High Rise	1.22656e+006					356.82	0.02	0.01	359.06
Apartments Mid Rise	3.43068e+006					998.02	0.05	0.02	1,004.28
City Park	0					0.00	0.00	0.00	0.00
General Office Building	701640					204.12	0.01	0.00	205.39
Single Family Housing	4.23732e+006					1,232.69	0.06	0.02	1,240.41
Strip Mall	561060					163.22	0.01	0.00	164.24
Unrefrigerated Warehouse-No Rail	145540					42.34	0.00	0.00	42.60
Total						2,997.21	0.15	0.05	3,015.98

6.0 Area Detail

6.1 Mitigation Measures Area

- Use Electric Lawnmower
- Use Electric Leafblower
- Use Electric Chainsaw
- Use Low VOC Paint - Residential Interior
- Use Low VOC Paint - Residential Exterior
- Use Low VOC Paint - Non-Residential Interior
- Use Low VOC Paint - Non-Residential Exterior
- No Hearths Installed
- Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	13.96	0.15	12.84	0.00		0.00	0.07		0.00	0.07	0.00	19.42	19.42	0.01	0.00	19.71
Unmitigated	20.09	0.89	59.70	0.14		0.00	7.29		0.00	7.28	935.89	2,951.75	3,887.64	4.46	0.05	3,997.86
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.79					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	11.79					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	5.01	0.70	42.86	0.14		0.00	7.19		0.00	7.19	935.89	2,924.15	3,860.04	4.43	0.05	3,969.71
Landscaping	0.50	0.19	16.84	0.00		0.00	0.09		0.00	0.09	0.00	27.60	27.60	0.03	0.00	28.15
Total	20.09	0.89	59.70	0.14		0.00	7.28		0.00	7.28	935.89	2,951.75	3,887.64	4.46	0.05	3,997.86

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	2.79					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Consumer Products	10.91					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.27	0.15	12.84	0.00		0.00	0.07		0.00	0.07	0.00	19.42	19.42	0.01	0.00	19.71
Total	13.97	0.15	12.84	0.00		0.00	0.07		0.00	0.07	0.00	19.42	19.42	0.01	0.00	19.71

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					576.56	8.86	0.23	833.70
Unmitigated					698.95	11.08	0.29	1,020.25
Total	NA	NA	NA	NA	NA	NA	NA	NA

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments High Rise	25.9965 / 16.3891					57.90	0.80	0.02	81.03
Apartments Mid Rise	72.7119 / 45.8401					161.95	2.23	0.06	226.63
City Park	0 / 19.0637					19.41	0.00	0.00	19.53
General Office Building	14.2187 / 8.71469					31.41	0.44	0.01	44.06
Single Family Housing	47.8882 / 30.1904					106.66	1.47	0.04	149.26
Strip Mall	4.44435 / 2.72396					9.82	0.14	0.00	13.77
Unrefrigerated Warehouse-No Rail	196.678 / 0					311.80	6.02	0.15	485.97
Total						698.95	11.10	0.28	1,020.25

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments High Rise	20.7972 / 15.3893					48.64	0.64	0.02	67.15
Apartments Mid Rise	58.1695 / 43.0439					136.05	1.78	0.05	187.83
City Park	0 / 17.9008					18.23	0.00	0.00	18.34
General Office Building	11.375 / 8.18309					26.37	0.35	0.01	36.49
Single Family Housing	38.3106 / 28.3488					89.60	1.17	0.03	123.71
Strip Mall	3.55548 / 2.5578					8.24	0.11	0.00	11.41

Unrefrigerated Warehouse-No Rail	157.342 / 0					249.44	4.81	0.12	388.77
Total						576.57	8.86	0.23	833.70

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					104.47	6.17	0.00	234.12
Unmitigated					417.87	24.70	0.00	936.47
Total	NA	NA	NA	NA	NA	NA	NA	NA

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments High Rise	183.54					37.26	2.20	0.00	83.50
Apartments Mid Rise	513.36					104.21	6.16	0.00	233.54

City Park	1.38					0.28	0.02	0.00	0.63
General Office Building	74.4					15.10	0.89	0.00	33.85
Single Family Housing	790.88					160.54	9.49	0.00	359.78
Strip Mall	63					12.79	0.76	0.00	28.66
Unrefrigerated Warehouse-No Rail	432					87.69	5.18	0.00	196.52
Total						417.87	24.70	0.00	936.48

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments High Rise	45.885					9.31	0.55	0.00	20.87
Apartments Mid Rise	128.34					26.05	1.54	0.00	58.38
City Park	0.345					0.07	0.00	0.00	0.16
General Office Building	18.6					3.78	0.22	0.00	8.46
Single Family Housing	197.72					40.14	2.37	0.00	89.95
Strip Mall	15.75					3.20	0.19	0.00	7.16
Unrefrigerated Warehouse-No Rail	108					21.92	1.30	0.00	49.13
Total						104.47	6.17	0.00	234.11

9.0 Vegetation

Ellis Specific Plan
San Joaquin Valley Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	80	1000sqft
Unrefrigerated Warehouse-No Rail	40	1000sqft
City Park	16	Acre
Apartments High Rise	399	Dwelling Unit
Apartments Mid Rise	1116	Dwelling Unit
Single Family Housing	735	Dwelling Unit
Strip Mall	60	1000sqft

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s)

Utility Company Pacific Gas & Electric Company

Climate Zone 2

2.7

Precipitation Freq (Days)

45

1.3 User Entered Comments

Project Characteristics -

Land Use - Lot acreage from Ellis Specific Plan
 Construction Phase - No construction, operational run only
 Vehicle Trips -
 Mobile Land Use Mitigation -
 Mobile Commute Mitigation -
 Area Mitigation -
 Energy Mitigation -
 Water Mitigation -
 Waste Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	202.92	19.20	1,232.43	3.42		0.00	173.17		0.00	173.15	25,162.01	26,544.19		118.45	0.48	54,342.62
Energy	1.46	12.51	5.59	0.08		0.00	1.01		0.00	1.01		15,918.68		0.31	0.29	16,015.55
Mobile	77.05	356.63	605.55	1.88	197.86	10.17	208.02	3.15	9.16	12.31		180,565.14		4.63		180,662.30
Total	281.43	388.34	1,843.57	5.38	197.86	10.17	382.20	3.15	9.16	186.47	25,162.01	223,028.01		123.39	0.77	251,020.47

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	78.03	1.72	142.87	0.01		0.00	0.78		0.00	0.78	0.00	238.04		0.17	0.00	241.62
Energy	1.27	10.91	4.87	0.07		0.00	0.88		0.00	0.88		13,889.84		0.27	0.25	13,974.38
Mobile	68.17	328.56	536.83	1.56	162.46	8.47	170.92	2.58	7.63	10.22		150,276.59		3.98		150,360.14
Total	147.47	341.19	684.57	1.64	162.46	8.47	172.58	2.58	7.63	11.88	0.00	164,404.47		4.42	0.25	164,576.14

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Density
 Increase Diversity
 Improve Walkability Design
 Improve Destination Accessibility
 Increase Transit Accessibility
 Improve Pedestrian Network
 Provide Traffic Calming Measures
 Limit Parking Supply
 Expand Transit Network
 Increase Transit Frequency
 Implement Trip Reduction Program
 Transit Subsidy
 Implement Employee Parking CashOut

Provide Riade Sharing Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	68.17	328.56	536.83	1.56	162.46	8.47	170.92	2.58	7.63	10.22		150,276.59		3.98		150,360.14
Unmitigated	77.05	356.63	605.55	1.88	197.86	10.17	208.02	3.15	9.16	12.31		180,565.14		4.63		180,662.30
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	2,629.41	2,856.84	2421.93	7,627,807	6,274,180
Apartments Mid Rise	7,354.44	7,990.56	6774.12	21,334,919	17,548,834
City Park	25.44	25.44	25.44	54,311	43,918
General Office Building	880.80	189.60	78.40	1,594,989	1,289,774
Single Family Housing	7,033.95	7,408.80	6445.95	20,294,860	16,693,343
Strip Mall	2,659.20	2,522.40	1225.80	3,749,804	3,033,775
Unrefrigerated Warehouse-No Rail	103.60	103.60	103.60	302,461	247,234
Total	20,686.84	21,097.24	17,075.24	54,959,151	45,131,058

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW

Apartments High Rise	10.80	7.30	7.50	45.60	19.00	35.40
Apartments Mid Rise	10.80	7.30	7.50	45.60	19.00	35.40
City Park	9.50	7.30	7.30	33.00	48.00	19.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.27	10.91	4.87	0.07		0.00	0.88		0.00	0.88		13,889.84		0.27	0.25	13,974.38
NaturalGas Unmitigated	1.46	12.51	5.59	0.08		0.00	1.01		0.00	1.01		15,918.68		0.31	0.29	16,015.55
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Apartments High Rise	14641.8	0.16	1.35	0.57	0.01		0.00	0.11		0.00	0.11		1,722.56		0.03	0.03	1,73
Apartments Mid Rise	40953	0.44	3.77	1.61	0.02		0.00	0.31		0.00	0.31		4,818.00		0.09	0.09	4,84
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.0
General Office Building	3791.78	0.04	0.37	0.31	0.00		0.00	0.03		0.00	0.03		446.09		0.01	0.01	448
Single Family Housing	73197.3	0.79	6.75	2.87	0.04		0.00	0.55		0.00	0.55		8,611.44		0.17	0.16	8,66
Strip Mall	2020.27	0.02	0.20	0.17	0.00		0.00	0.02		0.00	0.02		237.68		0.00	0.00	239
Unrefrigerated Warehouse-No Rail	704.658	0.01	0.07	0.06	0.00		0.00	0.01		0.00	0.01		82.90		0.00	0.00	83.
Total		1.46	12.51	5.59	0.07		0.00	1.03		0.00	1.03		15,918.67		0.30	0.29	16,01

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Apartments High Rise	12.7687	0.14	1.18	0.50	0.01		0.00	0.10		0.00	0.10		1,502.20		0.03	0.03	1,51
Apartments Mid Rise	35.714	0.39	3.29	1.40	0.02		0.00	0.27		0.00	0.27		4,201.65		0.08	0.08	4,22
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.0
General Office Building	3.23847	0.03	0.32	0.27	0.00		0.00	0.02		0.00	0.02		381.00		0.01	0.01	383
Single Family Housing	64.0174	0.69	5.90	2.51	0.04		0.00	0.48		0.00	0.48		7,531.46		0.14	0.14	7,57
Strip Mall	1.72611	0.02	0.17	0.14	0.00		0.00	0.01		0.00	0.01		203.07		0.00	0.00	204

Unrefrigerated Warehouse-No Rail	0.598959	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00		70.47		0.00	0.00	70.47
Total		1.28	10.92	4.87	0.07		0.00	0.88		0.00	0.88		13,889.85		0.26	0.26	13,970.47

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	78.03	1.72	142.87	0.01		0.00	0.78		0.00	0.78	0.00	238.04		0.17	0.00	241.62
Unmitigated	202.92	19.20	1,232.43	3.42		0.00	173.17		0.00	173.15	25,162.01	26,544.19		118.45	0.48	54,342.62

Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	15.27					0.00	0.00		0.00	0.00						0.00
Consumer Products	64.59					0.00	0.00		0.00	0.00						0.00
Hearth	117.47	17.05	1,045.14	3.41		0.00	172.13		0.00	172.12	25,162.01	26,205.88		118.13	0.48	53,997.55
Landscaping	5.60	2.15	187.29	0.01		0.00	1.04		0.00	1.04		338.31		0.32		345.07
Total	202.93	19.20	1,232.43	3.42		0.00	173.17		0.00	173.16	25,162.01	26,544.19		118.45	0.48	54,342.62

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	15.27					0.00	0.00		0.00	0.00						0.00
Consumer Products	59.76					0.00	0.00		0.00	0.00						0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00
Landscaping	3.00	1.72	142.87	0.01		0.00	0.78		0.00	0.78		238.04		0.17		241.62
Total	78.03	1.72	142.87	0.01		0.00	0.78		0.00	0.78	0.00	238.04		0.17	0.00	241.62

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

- Institute Recycling and Composting Services

9.0 Vegetation

Ellis Specific Plan
San Joaquin Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	80	1000sqft
Unrefrigerated Warehouse-No Rail	40	1000sqft
City Park	16	Acre
Apartments High Rise	399	Dwelling Unit
Apartments Mid Rise	1116	Dwelling Unit
Single Family Housing	735	Dwelling Unit
Strip Mall	60	1000sqft

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s)

Utility Company

Pacific Gas & Electric Company

Climate Zone 2

2.7

Precipitation Freq (Days)

45

1.3 User Entered Comments

Project Characteristics -

Land Use - Lot acreage from Ellis Specific Plan
 Construction Phase - No construction, operational run only
 Vehicle Trips -
 Mobile Land Use Mitigation -
 Mobile Commute Mitigation -
 Area Mitigation -
 Energy Mitigation -
 Water Mitigation -
 Waste Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	202.92	19.20	1,232.43	3.42		0.00	173.17		0.00	173.15	25,162.01	26,544.19		118.45	0.48	54,342.62
Energy	1.46	12.51	5.59	0.08		0.00	1.01		0.00	1.01		15,918.68		0.31	0.29	16,015.55
Mobile	78.09	365.78	579.14	2.09	197.86	10.05	207.91	3.15	9.11	12.26		196,117.92		4.62		196,214.87
Total	282.47	397.49	1,817.16	5.59	197.86	10.05	382.09	3.15	9.11	186.42	25,162.01	238,580.79		123.38	0.77	266,573.04

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	78.03	1.72	142.87	0.01		0.00	0.78		0.00	0.78	0.00	238.04		0.17	0.00	241.62
Energy	1.27	10.91	4.87	0.07		0.00	0.88		0.00	0.88		13,889.84		0.27	0.25	13,974.38
Mobile	69.90	338.91	498.26	1.73	162.46	8.36	170.81	2.58	7.58	10.16		163,283.14		3.93		163,365.72
Total	149.20	351.54	646.00	1.81	162.46	8.36	172.47	2.58	7.58	11.82	0.00	177,411.02		4.37	0.25	177,581.72

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Density
 Increase Diversity
 Improve Walkability Design
 Improve Destination Accessibility
 Increase Transit Accessibility
 Improve Pedestrian Network
 Provide Traffic Calming Measures
 Limit Parking Supply
 Expand Transit Network
 Increase Transit Frequency
 Implement Trip Reduction Program
 Transit Subsidy
 Implement Employee Parking CashOut

Provide Riade Sharing Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	69.90	338.91	498.26	1.73	162.46	8.36	170.81	2.58	7.58	10.16		163,283.14		3.93		163,365.72
Unmitigated	78.09	365.78	579.14	2.09	197.86	10.05	207.91	3.15	9.11	12.26		196,117.92		4.62		196,214.87
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	2,629.41	2,856.84	2421.93	7,627,807	6,274,180
Apartments Mid Rise	7,354.44	7,990.56	6774.12	21,334,919	17,548,834
City Park	25.44	25.44	25.44	54,311	43,918
General Office Building	880.80	189.60	78.40	1,594,989	1,289,774
Single Family Housing	7,033.95	7,408.80	6445.95	20,294,860	16,693,343
Strip Mall	2,659.20	2,522.40	1225.80	3,749,804	3,033,775
Unrefrigerated Warehouse-No Rail	103.60	103.60	103.60	302,461	247,234
Total	20,686.84	21,097.24	17,075.24	54,959,151	45,131,058

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW

Apartments High Rise	10.80	7.30	7.50	45.60	19.00	35.40
Apartments Mid Rise	10.80	7.30	7.50	45.60	19.00	35.40
City Park	9.50	7.30	7.30	33.00	48.00	19.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.27	10.91	4.87	0.07		0.00	0.88		0.00	0.88		13,889.84		0.27	0.25	13,974.38
NaturalGas Unmitigated	1.46	12.51	5.59	0.08		0.00	1.01		0.00	1.01		15,918.68		0.31	0.29	16,015.55
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Apartments High Rise	14641.8	0.16	1.35	0.57	0.01		0.00	0.11		0.00	0.11		1,722.56		0.03	0.03	1,73
Apartments Mid Rise	40953	0.44	3.77	1.61	0.02		0.00	0.31		0.00	0.31		4,818.00		0.09	0.09	4,84
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.0
General Office Building	3791.78	0.04	0.37	0.31	0.00		0.00	0.03		0.00	0.03		446.09		0.01	0.01	448
Single Family Housing	73197.3	0.79	6.75	2.87	0.04		0.00	0.55		0.00	0.55		8,611.44		0.17	0.16	8,66
Strip Mall	2020.27	0.02	0.20	0.17	0.00		0.00	0.02		0.00	0.02		237.68		0.00	0.00	239
Unrefrigerated Warehouse-No Rail	704.658	0.01	0.07	0.06	0.00		0.00	0.01		0.00	0.01		82.90		0.00	0.00	83.
Total		1.46	12.51	5.59	0.07		0.00	1.03		0.00	1.03		15,918.67		0.30	0.29	16,01

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
Apartments High Rise	12.7687	0.14	1.18	0.50	0.01		0.00	0.10		0.00	0.10		1,502.20		0.03	0.03	1,51
Apartments Mid Rise	35.714	0.39	3.29	1.40	0.02		0.00	0.27		0.00	0.27		4,201.65		0.08	0.08	4,22
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.0
General Office Building	3.23847	0.03	0.32	0.27	0.00		0.00	0.02		0.00	0.02		381.00		0.01	0.01	383
Single Family Housing	64.0174	0.69	5.90	2.51	0.04		0.00	0.48		0.00	0.48		7,531.46		0.14	0.14	7,57
Strip Mall	1.72611	0.02	0.17	0.14	0.00		0.00	0.01		0.00	0.01		203.07		0.00	0.00	204

Unrefrigerated Warehouse-No Rail	0.598959	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00		70.47		0.00	0.00	70.47
Total		1.28	10.92	4.87	0.07		0.00	0.88		0.00	0.88		13,889.85		0.26	0.26	13,970.26

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	78.03	1.72	142.87	0.01		0.00	0.78		0.00	0.78	0.00	238.04		0.17	0.00	241.62
Unmitigated	202.92	19.20	1,232.43	3.42		0.00	173.17		0.00	173.15	25,162.01	26,544.19		118.45	0.48	54,342.62

Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	15.27					0.00	0.00		0.00	0.00						0.00
Consumer Products	64.59					0.00	0.00		0.00	0.00						0.00
Hearth	117.47	17.05	1,045.14	3.41		0.00	172.13		0.00	172.12	25,162.01	26,205.88		118.13	0.48	53,997.55
Landscaping	5.60	2.15	187.29	0.01		0.00	1.04		0.00	1.04		338.31		0.32		345.07
Total	202.93	19.20	1,232.43	3.42		0.00	173.17		0.00	173.16	25,162.01	26,544.19		118.45	0.48	54,342.62

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	15.27					0.00	0.00		0.00	0.00						0.00
Consumer Products	59.76					0.00	0.00		0.00	0.00						0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00	0.00	0.00
Landscaping	3.00	1.72	142.87	0.01		0.00	0.78		0.00	0.78		238.04		0.17		241.62
Total	78.03	1.72	142.87	0.01		0.00	0.78		0.00	0.78	0.00	238.04		0.17	0.00	241.62

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

8.0 Waste Detail

8.1 Mitigation Measures Waste

- Institute Recycling and Composting Services

9.0 Vegetation

Ellis Specific Plan - Alternative
San Joaquin Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
General Office Building	80	1000sqft
Unrefrigerated Warehouse-No Rail	40	1000sqft
City Park	16	Acre
Apartments High Rise	217	Dwelling Unit
Apartments Mid Rise	607	Dwelling Unit
Single Family Housing	400	Dwelling Unit
Strip Mall	60	1000sqft

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)		Utility Company	Pacific Gas & Electric Company
Climate Zone	2		2.7		
		Precipitation Freq (Days)			

1.3 User Entered Comments

Project Characteristics -

Land Use - Lot acreage from Ellis Specific Plan

Construction Phase - No construction, operational run only

Vehicle Trips -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

2.0 Emissions Summary

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	13.46	0.80	52.02	0.14		0.00	7.15		0.00	7.15	935.89	1,605.75	2,541.64	4.42	0.03	2,643.50
Energy	0.15	1.30	0.60	0.01		0.00	0.10		0.00	0.10	0.00	3,720.17	3,720.17	0.13	0.07	3,743.22
Mobile	7.35	36.54	58.34	0.19	16.89	1.01	17.89	0.31	0.91	1.22	0.00	16,804.90	16,804.90	0.42	0.00	16,813.68
Waste						0.00	0.00		0.00	0.00	280.18	0.00	280.18	16.56	0.00	627.90
Water						0.00	0.00		0.00	0.00	0.00	550.06	550.06	9.03	0.23	811.90
Total	20.96	38.64	110.96	0.34	16.89	1.01	25.14	0.31	0.91	8.47	1,216.07	22,680.88	23,896.95	30.56	0.33	24,640.20

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	7.95	0.08	6.99	0.00		0.00	0.04		0.00	0.04	0.00	10.56	10.56	0.01	0.00	10.72
Energy	0.13	1.13	0.52	0.01		0.00	0.09		0.00	0.09	0.00	3,117.99	3,117.99	0.11	0.06	3,137.30
Mobile	6.53	33.84	51.20	0.16	13.85	0.84	14.69	0.26	0.75	1.01	0.00	13,985.54	13,985.54	0.36	0.00	13,993.07
Waste						0.00	0.00		0.00	0.00	70.04	0.00	70.04	4.14	0.00	156.97
Water						0.00	0.00		0.00	0.00	0.00	451.48	451.48	7.23	0.19	661.02
Total	14.61	35.05	58.71	0.17	13.85	0.84	14.82	0.26	0.75	1.14	70.04	17,565.57	17,635.61	11.85	0.25	17,959.08

3.0 Construction Detail

3.1 Mitigation Measures Construction

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

Increase Density

Increase Diversity
 Improve Walkability Design
 Improve Destination Accessibility
 Increase Transit Accessibility
 Improve Pedestrian Network
 Provide Traffic Calming Measures
 Limit Parking Supply
 Expand Transit Network
 Increase Transit Frequency
 Implement Trip Reduction Program
 Transit Subsidy
 Implement Employee Parking CashOut
 Provide Riade Sharing Program

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.53	33.84	51.20	0.16	13.85	0.84	14.69	0.26	0.75	1.01	0.00	13,985.54	13,985.54	0.36	0.00	13,993.07
Unmitigated	7.35	36.54	58.34	0.19	16.89	1.01	17.89	0.31	0.91	1.22	0.00	16,804.90	16,804.90	0.42	0.00	16,813.68
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments High Rise	1,430.03	1,553.72	1317.19	4,148,456	3,412,273
Apartments Mid Rise	4,000.13	4,346.12	3684.49	11,604,208	9,544,930
City Park	25.44	25.44	25.44	54,311	43,918
General Office Building	880.80	189.60	78.40	1,594,989	1,289,774
Single Family Housing	3,828.00	4,032.00	3508.00	11,044,822	9,084,813
Strip Mall	2,659.20	2,522.40	1225.80	3,749,804	3,033,775
Unrefrigerated Warehouse-No Rail	103.60	103.60	103.60	302,461	247,234
Total	12,927.20	12,772.88	9,942.92	32,499,052	26,656,717

4.3 Trip Type Information

Land Use	Miles			Trip %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW
Apartments High Rise	10.80	7.30	7.50	45.60	19.00	35.40
Apartments Mid Rise	10.80	7.30	7.50	45.60	19.00	35.40
City Park	9.50	7.30	7.30	33.00	48.00	19.00
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00
Single Family Housing	10.80	7.30	7.50	45.60	19.00	35.40
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00
Unrefrigerated Warehouse-No Rail	9.50	7.30	7.30	59.00	0.00	41.00

5.0 Energy Detail

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

Install Energy Efficient Appliances

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.00	0.00		0.00	0.00	0.00	1,817.41	1,817.41	0.08	0.03	1,828.80
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	2,228.38	2,228.38	0.10	0.04	2,242.34
NaturalGas Mitigated	0.13	1.13	0.52	0.01		0.00	0.09		0.00	0.09	0.00	1,300.58	1,300.58	0.02	0.02	1,308.49
NaturalGas Unmitigated	0.15	1.30	0.60	0.01		0.00	0.10		0.00	0.10	0.00	1,491.80	1,491.80	0.03	0.03	1,500.88
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments High Rise	2.90652e+006	0.02	0.13	0.06	0.00		0.00	0.01		0.00	0.01	0.00	155.10	155.10	0.00	0.00	156.05
Apartments Mid Rise	8.13023e+006	0.04	0.37	0.16	0.00		0.00	0.03		0.00	0.03	0.00	433.86	433.86	0.01	0.01	436.50
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	1.384e+006	0.01	0.07	0.06	0.00		0.00	0.01		0.00	0.01	0.00	73.86	73.86	0.00	0.00	74.30
Single Family Housing	1.45399e+007	0.08	0.67	0.29	0.00		0.00	0.05		0.00	0.05	0.00	775.90	775.90	0.01	0.01	780.62
Strip Mall	737400	0.00	0.04	0.03	0.00		0.00	0.00		0.00	0.00	0.00	39.35	39.35	0.00	0.00	39.59

Unrefrigerated Warehouse-No Rail	257200	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	13.73	13.73	0.00	0.00	13.81
Total		0.15	1.29	0.61	0.00		0.00	0.10		0.00	0.10	0.00	1,491.80	1,491.80	0.02	0.02	1,500.87

Mitigated

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
Apartments High Rise	2.5347e+006	0.01	0.12	0.05	0.00		0.00	0.01		0.00	0.01	0.00	135.26	135.26	0.00	0.00	136.08
Apartments Mid Rise	7.09016e+006	0.04	0.33	0.14	0.00		0.00	0.03		0.00	0.03	0.00	378.36	378.36	0.01	0.01	380.66
City Park	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Office Building	1.18204e+006	0.01	0.06	0.05	0.00		0.00	0.00		0.00	0.00	0.00	63.08	63.08	0.00	0.00	63.46
Single Family Housing	1.27164e+007	0.07	0.59	0.25	0.00		0.00	0.05		0.00	0.05	0.00	678.59	678.59	0.01	0.01	682.72
Strip Mall	630030	0.00	0.03	0.03	0.00		0.00	0.00		0.00	0.00	0.00	33.62	33.62	0.00	0.00	33.83
Unrefrigerated Warehouse-No Rail	218620	0.00	0.01	0.01	0.00		0.00	0.00		0.00	0.00	0.00	11.67	11.67	0.00	0.00	11.74
Total		0.13	1.14	0.53	0.00		0.00	0.09		0.00	0.09	0.00	1,300.58	1,300.58	0.02	0.02	1,308.49

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments High Rise	794776					231.21	0.01	0.00	232.66
Apartments Mid Rise	2.22317e+006					646.75	0.03	0.01	650.80
City Park	0					0.00	0.00	0.00	0.00

General Office Building	893600					259.96	0.01	0.00	261.59
Single Family Housing	2.74184e+006					797.63	0.04	0.01	802.63
Strip Mall	803400					233.72	0.01	0.00	235.18
Unrefrigerated Warehouse-No Rail	203200					59.11	0.00	0.00	59.48
Total						2,228.38	0.10	0.02	2,242.34

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
Apartments High Rise	667076					194.06	0.01	0.00	195.28
Apartments Mid Rise	1.86597e+006					542.83	0.02	0.01	546.23
City Park	0					0.00	0.00	0.00	0.00
General Office Building	701640					204.12	0.01	0.00	205.39
Single Family Housing	2.30603e+006					670.85	0.03	0.01	675.05
Strip Mall	561060					163.22	0.01	0.00	164.24
Unrefrigerated Warehouse-No Rail	145540					42.34	0.00	0.00	42.60
Total						1,817.42	0.08	0.02	1,828.79

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

Use Low VOC Cleaning Supplies

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	7.95	0.08	6.99	0.00		0.00	0.04		0.00	0.04	0.00	10.56	10.56	0.01	0.00	10.72
Unmitigated	13.46	0.80	52.02	0.14		0.00	7.15		0.00	7.15	935.89	1,605.75	2,541.64	4.42	0.03	2,643.50
Total	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.57					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Consumer Products	6.73					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	4.88	0.70	42.85	0.14		0.00	7.10		0.00	7.10	935.89	1,590.74	2,526.63	4.41	0.03	2,628.19
Landscaping	0.27	0.11	9.16	0.00		0.00	0.05		0.00	0.05	0.00	15.01	15.01	0.01	0.00	15.31
Total	13.45	0.81	52.01	0.14		0.00	7.15		0.00	7.15	935.89	1,605.75	2,541.64	4.42	0.03	2,643.50

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.57					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	6.23					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hearth	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.15	0.08	6.99	0.00		0.00	0.04		0.00	0.04	0.00	10.56	10.56	0.01	0.00	10.72
Total	7.95	0.08	6.99	0.00		0.00	0.04		0.00	0.04	0.00	10.56	10.56	0.01	0.00	10.72

7.0 Water Detail

7.1 Mitigation Measures Water

- Install Low Flow Bathroom Faucet
- Install Low Flow Kitchen Faucet
- Install Low Flow Toilet
- Install Low Flow Shower
- Use Water Efficient Irrigation System

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					451.48	7.23	0.19	661.02
Unmitigated					550.06	9.03	0.23	811.90
Total	NA	NA	NA	NA	NA	NA	NA	NA

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments High Rise	14.1384 / 8.91335					31.49	0.43	0.01	44.07
Apartments Mid Rise	39.5485 / 24.9327					88.08	1.21	0.03	123.27
City Park	0 / 19.0637					19.41	0.00	0.00	19.53
General Office Building	14.2187 / 8.71469					31.41	0.44	0.01	44.06
Single Family Housing	26.0616 / 16.4301					58.05	0.80	0.02	81.23
Strip Mall	4.44435 / 2.72396					9.82	0.14	0.00	13.77
Unrefrigerated Warehouse-No Rail	196.678 / 0					311.80	6.02	0.15	485.97
Total						550.06	9.04	0.22	811.90

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
Apartments High Rise	11.3107 / 8.36964					26.45	0.35	0.01	36.52
Apartments Mid Rise	31.6388 / 23.4118					74.00	0.97	0.03	102.16
City Park	0 / 17.9008					18.23	0.00	0.00	18.34
General Office Building	11.375 / 8.18309					26.37	0.35	0.01	36.49
Single Family Housing	20.8493 / 15.4279					48.76	0.64	0.02	67.32
Strip Mall	3.55548 / 2.5578					8.24	0.11	0.00	11.41
Unrefrigerated Warehouse-No Rail	157.342 / 0					249.44	4.81	0.12	388.77
Total						451.49	7.23	0.19	661.01

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					70.04	4.14	0.00	156.97

Unmitigated					280.18	16.56	0.00	627.90
Total	NA	NA	NA	NA	NA	NA	NA	NA

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments High Rise	99.82					20.26	1.20	0.00	45.41
Apartments Mid Rise	279.22					56.68	3.35	0.00	127.02
City Park	1.38					0.28	0.02	0.00	0.63
General Office Building	74.4					15.10	0.89	0.00	33.85
Single Family Housing	430.43					87.37	5.16	0.00	195.81
Strip Mall	63					12.79	0.76	0.00	28.66
Unrefrigerated Warehouse-No Rail	432					87.69	5.18	0.00	196.52
Total						280.17	16.56	0.00	627.90

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
Apartments High Rise	24.955					5.07	0.30	0.00	11.35
Apartments Mid Rise	69.805					14.17	0.84	0.00	31.76
City Park	0.345					0.07	0.00	0.00	0.16

General Office Building	18.6					3.78	0.22	0.00	8.46
Single Family Housing	107.608					21.84	1.29	0.00	48.95
Strip Mall	15.75					3.20	0.19	0.00	7.16
Unrefrigerated Warehouse-No Rail	108					21.92	1.30	0.00	49.13
Total						70.05	4.14	0.00	156.97

9.0 Vegetation



C Hazards Data

PHASE I ENVIRONMENTAL SITE ASSESSMENT

ELLIS PROPERTY
TRACY, CALIFORNIA



ENGE O
I N C O R P O R A T E D

Submitted to:
The Surland Companies
1024 Central Avenue
Tracy, CA 95376

Prepared by:
ENGE O Incorporated

March 29, 2012

Project No:
3887.000.001

Project No.
3887.000.001

March 29, 2012

The Surland Companies
1024 Central Avenue
Tracy, CA 95376

Subject: Ellis Property
Tracy, California

PHASE I ENVIRONMENTAL SITE ASSESSMENT

Dear Sir or Madam:

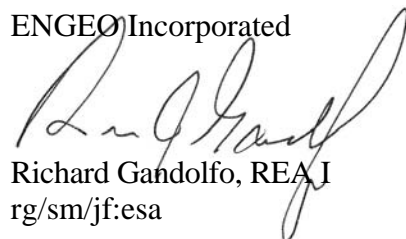
ENGEO is pleased to present our phase I environmental site assessment of the subject property, located in unincorporated Tracy, California. The attached report includes a description of the site assessment activities, along with ENGEO's findings, opinions, and conclusions regarding the Property.

ENGEO has the specific qualifications based on education, training, and experience to assess the nature, history, and setting of the Property, and has developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312. We declare that, to the best of our professional knowledge and belief, the responsible charge for this study meets the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312 and ASTM 1527-05.

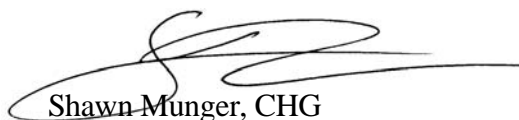
We are pleased to be of service to you on this project. If you have any questions concerning the contents of our report, please contact us.

Sincerely,

ENGEO Incorporated



Richard Gandolfo, REA
rg/sm/jf:esa



Shawn Munger, CHG

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APPENDIX B – Old Republic Title Company, Preliminary Title Reports
APPENDIX C – Environmental Data Resources, Inc., Historical Topographic Map Report
APPENDIX D – Environmental Data Resources, Inc., Aerial Photo Decade Package
APPENDIX E – Environmental Data Resources, Inc., Sanborn Map Report
APPENDIX F – Environmental Data Resources, Inc., City Directory
APPENDIX G – Environmental Data Site Assessment Questionnaires (2)
APPENDIX H – Qualification of Environmental Professional

EXECUTIVE SUMMARY

ENGEO conducted a phase I environmental site assessment for the property located in unincorporated Tracy, California (Property). The Property is approximately 322 acres in area and is identified by the following addresses and Assessor's Parcel Numbers (APN).

- 27580 South Lammers Road- APN 240-140-16
- 27798 South Lammers Road- APN 240-140-18
- 27710 South Lammers Road- APN 240-140-22
- 27710 South Lammers Road- APN 240-140-23
- 28001 Corral Hollow Road- APN 240-140-31
- 28397 Corral Hollow Road- APN 240-140-30

The Property consists of five undeveloped/agricultural parcels and one rural residential parcel (APN 240-140-23), which was built sometime in the late 1980s. Additionally, one structure had been located on APN 240-140-31 until it was demolished sometime between 2006 and 2009. Review of historical records indicates that the Property was used for orchards and/or other agricultural uses since at least 1957.

This assessment included a review of local, state, tribal, and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources. A reconnaissance of the Property was conducted to review site use and current conditions to check for the storage, use, production or disposal of hazardous or potentially hazardous materials and interviews with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the Property. A review of regulatory databases maintained by county, state, tribal, and federal agencies found no documentation of hazardous materials violations or discharge on the Property and did not identify contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to impact the Property.

ENGEO has performed a phase I environmental site assessment of the Property in general conformance with the scope and limitations of ASTM E 1527-05. Based on the findings of this assessment, no Recognized Environmental Conditions (RECs) and no historical RECs were identified for the Property; however, the following potential environmental concerns were noted;

- The Property, either in part or whole, has historically been used for agricultural purposes, including row crops and orchards, since at least 1957. Historical records indicating the types and quantities of chemicals and pesticides, which may have been used on the Property, are not readily available from the county. It is conceivable that persistent agrichemicals may have been applied in the past, which could have adversely affected near-surface soils.
- Historical records and previous environmental studies (ENGEO 1994 and Geocon 2008) indicate that a reportedly abandoned, underground pipeline previously crossed approximately

300 to 400 feet of the southwest corner of APN 240-140-31 and through the eastern-central portions of APN 240-140-16, 240-140-18, and 240-140-22. The pipeline, which was reportedly operated by Shell Oil Company from the 1910s to the 1970s, transported crude oil between Martinez and the San Joaquin Valley via a pumping station formerly located on Lammers Road. According to Shell Pipeline Corporation, the pipeline was purged of product and abandoned in place in the early 1970s; however, information reviewed in the 2008 Geocon report indicates that the section of pipeline, which was located on the parcel north of the Property, had been removed in the late 1970s and that a recent subsurface utility survey across the Property did not indicate the presence of a metallic pipeline. No records relating to the pipeline removal or post-removal soil sampling were readily available from either Shell or the San Joaquin County Environmental Health Department (SJCEH). Because historical pipelines throughout the western Central Valley are known to have had issues with leakage, and no information regarding any post-removal confirmational sampling was readily available from either Shell or the SJCEHD, this is considered a potential environmental concern.

- Historical records, the site reconnaissance, and previous environmental studies (ENGEO 1994) indicate that three active pipelines extend through the western end of Property through APNs 240-140-18, 240-140-22, 240-140-23, and 240-140-16. Two of the three active lines are PG&E natural gas lines, which generally do not present an environmental concern; however, the third line is a Chevron petroleum pipeline, which would be subject to possible product leaks. Because historical pipelines throughout the western Central Valley are known to have had issues with leakage, this is considered a potential environmental concern.

Based on the findings of this assessment, ENGEO recommends further environmental studies to determine the potential impacts due to past agricultural use of the Property and the abandoned and active petroleum product underground pipeline. Any further environmental studies should be completed before the commencement of grading activities.

1.0 INTRODUCTION

ENGEO conducted a phase I environmental site assessment for the property located in unincorporated Tracy, California (Figure 1). The Property is approximately 322 acres in area and is identified by the following addresses and Assessor's Parcel Numbers (APN) (Figure 2).

- 27580 South Lammers Road- APN 240-140-16
- 27798 South Lammers Road- APN 240-140-18
- 27710 South Lammers Road- APN 240-140-22
- 27710 South Lammers Road- APN 240-140-23
- 28001 Corral Hollow Road- APN 240-140-31
- 28397 Corral Hollow Road- APN 240-140-30

1.1 PURPOSE OF PHASE I ENVIRONMENTAL SITE ASSESSMENT

This assessment was performed at the request of The Surland Companies for the purpose of environmental due diligence. The objective of this phase I environmental site assessment is to identify recognized environmental conditions associated with the Property. As defined in the ASTM Standard Practice E 1527-05, a REC is "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property".

1.2 DETAILED SCOPE OF SERVICES

The scope of services performed included the following:

- A review of publicly available and practically reviewable standard local, state, tribal, and federal environmental record sources.
- A review of publicly available and practically reviewable standard historical sources, aerial photographs, fire insurance maps and physical setting sources.
- A reconnaissance of the Property to review site use and current conditions. The reconnaissance was conducted to check for the storage, use, production or disposal of hazardous or potentially hazardous materials.
- Interviews with owners/occupants and public sector officials.
- Preparation of this report with our findings, opinions, and conclusions.

1.3 LIMITATIONS AND EXCEPTIONS OF ASSESSMENT

The professional staff at ENGEO strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. The recommendations and conclusions presented in this report were based on the findings of our study, which were developed solely from the contracted services. The findings of the report are based in part on contracted database research, out-of-house reports and personal communications. The opinions formed by ENGEO are based on the assumed accuracy of the relied upon data in conjunction with our relevant professional experience related to such data interpretation. ENGEO assumes no liability for the validity of the materials relied upon in the preparation of this report.

This document must not be subject to unauthorized reuse; that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time. The findings from a phase I environmental site assessment are valid for one year after completion of the report. Updates of portions of the assessment may be necessary after a period of 180 days after completion.

This phase I environmental site assessment is not intended to represent a complete soil or groundwater characterization, nor define the depth or extent of soil or groundwater contamination. It is intended to provide an evaluation of potential environmental concerns associated with the use of the Property. A more extensive assessment that would include a subsurface exploration with laboratory testing of soil and groundwater samples could provide more definitive information concerning site-specific conditions. If additional assessment activities are considered for the Property and if other entities are retained to provide such services, ENGEO cannot be held responsible for any and all claims arising from or resulting from the performance of such services by other persons or entities. ENGEO can also not be held responsible from any and all claims arising or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

1.4 SPECIAL TERMS AND CONDITIONS

ENGEO has prepared this report for the exclusive use of our client, The Surland Companies. It is recognized and agreed that ENGEO has assumed responsibility only for undertaking the study for the client. The responsibility for disclosures or reports to a third party and for remedial or mitigative action shall be solely that of the Client.

Laboratory testing of soil or groundwater samples was not within the scope of the contracted services. The assessment did not include an asbestos survey, an evaluation of lead-based paint, an inspection of light ballasts for polychlorinated biphenyls (PCBs), a radon evaluation, or a mold survey.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's assessment. Visual observations referenced in this report are intended only to

represent conditions at the time of the reconnaissance. ENGEO would not be aware of site contamination, such as dumping and/or accidental spillage that occurred subsequent to the reconnaissance conducted by ENGEO personnel.

2.0 PROPERTY INFORMATION

2.1 SITE LOCATION

The approximately 322-acre Property is located in unincorporated Tracy, California (Figure 1) and is identified by the following addresses and Assessor's Parcel Numbers (APN) (Figure 2).

- 27580 South Lammers Road- APN 240-140-16
- 27798 South Lammers Road- APN 240-140-18
- 27710 South Lammers Road- APN 240-140-22
- 27710 South Lammers Road- APN 240-140-23
- 28001 Corral Hollow Road- APN 240-140-31
- 28397 Corral Hollow Road- APN 240-140-30

2.2 SITE AND VICINITY CHARACTERISTICS

Topographic maps indicate that the Property is relatively level and slopes gradually to the northeast with approximate elevations of 190 feet above mean sea level (msl) in the southwest and 140 feet above msl in the northeast. Review of the Geologic Map of the San Francisco-San Jose Quadrangle (Wagner et al., 1991) indicated that the Property is underlain by alluvial deposits (Qf). This Quaternary-age alluvium consists of alluvial fan and basin deposits of gravel, sand, silt, and clay.

Geocheck – Physical Setting Source Summary of the Environmental Resources Data report (Appendix A) indicated seven Federal United States Geological Survey (USGS) wells, nine State wells, and one “dry hole” oil/gas well are located within one mile of the Property.

We reviewed the Department of Water Resources On-line Water Data Library for depth to water in the vicinity of the site. The website identified seven wells within one mile of the Property; however, the recorded depth to water measurements were between 12 and 60 years old, thus not necessarily relevant to current groundwater levels.

We reviewed Envirostor, a website maintained by the State of California, Department of Toxic Substances Control, and Geotracker, a website maintained by the State of California, Water Resources Control Board, for nearby facilities with records that include depth to groundwater measurements. No monitor wells were located within one mile of the Property.

The site-specific depth to groundwater and direction of groundwater flow was not determined as part of this assessment. Fluctuations in groundwater levels may occur seasonally and over a period of years due to variations in precipitation, temperature, irrigation and other factors.

The DOGGR online database was reviewed for the Property. A former well location was documented within the Property in the southern portion of APN 240-140-31. The well, which is identified by API Number 07700382, is reported to have been drilled and abandoned as a “dry well” in 1964; therefore, the well was not developed for active production. Additional information is available in the Radius Report, which is presented in Appendix A.

2.3 CURRENT USE OF PROPERTY/DESCRIPTION OF SITE IMPROVEMENTS

- 27580 South Lammers Road - APN 240-140-16; this parcel is undeveloped agricultural land.
- 27798 South Lammers Road - APN 240-140-18; this parcel is undeveloped agricultural land.
- 27710 South Lammers Road - APN 240-140-22; this parcel is undeveloped agricultural land.
- 27710 South Lammers Road - APN 240-140-23; this parcel is used for residential/storage purposes. Site improvements include a two-story residential house, a warehouse, field trailers and a connex storage container.
- 28001 Corral Hollow Road - APN 240-140-31; this parcel is undeveloped agricultural land.
- 28397 Corral Hollow Road - APN 240-140-30; this parcel is undeveloped agricultural land.

2.4 CURRENT USE OF ADJOINING PROPERTIES

Existing single-family residences border the Property on the east, rural residential parcels and undeveloped lands border the Property on the north and west, and a segment of the Union Pacific Railroad and undeveloped land border the Property to the south.

3.0 RECORDS REVIEW

3.1 PREVIOUS ENVIRONMENTAL REPORTS

In April 2008, Geocon conducted an Initial Pipeline Location and Depth Assessment for the Property, which consisted of a subsurface utility survey in the vicinity of the reportedly abandoned Shell pipeline in the central portion of the Property. Geocon indicated that the survey was not able to locate any metallic objects in vicinity of the reported area of the pipeline. Geocon also reported that the neighboring property owner indicated that the Shell pipeline that had cross his parcels had been removed in the late 1970's. Geocon's opinion was that it was likely that the pipeline had been removed, and because there was no information regarding the testing of the soil below the removed pipeline, subsurface impacts due to leaks in the pipeline may have occurred.

In February 2008, ENGEO conducted a Phase I Environmental Site Assessment for the “Western Corral Properties”, which included two of the six parcels (APN 240-140-30 and

APN 240-140-31) that comprise the Property. ENGEO recommended additional studies to address the following potential environmental concerns associated with the parcels:

- Potential agrichemical impact due to past agricultural uses.
- Potential impacts due to a reportedly abandoned oil pipeline(s).

In November 1994, ENGEO conducted a Phase I Environmental Site Assessment for the “South Schulte Planning Area”, which included the six parcels that comprise the Property. ENGEO recommended additional studies to address the following potential environmental concerns associated with the parcels:

- Potential agrichemical impact due to past agricultural uses.
- Potential impacts due to a reportedly abandoned Shell oil pipeline.

3.2 PROPERTY RECORDS

3.2.1 Environmental Liens

Questionnaires completed by the Client and key site manager indicated that they are not aware of any environmental cleanup liens recorded against the Property.

3.2.2 Title Report/Ownership

The Title Report lists recorded land title detail, ownership fees, leases, land contracts, easements, liens, deficiencies, and other encumbrances attached to or recorded against a subject property. Laws and regulations pertaining to land trusts vary from state to state and the detail of information presented in a Title Report can vary greatly by jurisdiction. As a result, ENGEO utilizes a Title Report, when provided to us, as a supplement to other historical record sources.

The preliminary Title Reports received by our office indicated that the Property is vested in the following entities:

- APN 240-140-16, 240-140-18; and 240-140-22; Tusso Farms Inc., a California corporation (October 18, 2011).
- APN 240-140-23; Tracy/Lammers Investments LLC Subject to Item 21 (November 30, 2011).
- APN 240-140-31; Western Corral Investments LLC, a California limited liability company (October 5, 2011).
- APN 240-140-30; Surland Communities, LLC, a California limited liability company (October 18, 2011).

The Preliminary Title Reports (Appendix B) contained references to various easements (i.e. pipelines, water lines, etc...) but did not contain references to environmental liens or restrictions.

3.3 HISTORICAL RECORD SOURCES

The purpose of the historical record review is to develop a history of the previous uses or occupancies of the Property and surrounding area in order to identify those uses or occupancies that are likely to have led to recognized environmental conditions on the Property.

3.3.1 Historical Topographic Maps

Historical USGS topographic maps were reviewed to determine if discernible changes in topography or improvements pertaining to the Property had been recorded. The following maps were provided to us through an EDR Historical Topographic Map Report, presented in Appendix C.

TABLE 3.3.1-1

Quad	Year	Series	Scale
Tracy	1916	30	1"=125,000'
Carbona	1922	15	1"=62,500'
Carbona	1947	15	1"=50,000'
Tracy	1954	7.5	1"=24,000'
Tracy	1968; Revised from 1954 Map	7.5	1"=24,000'
Tracy	1981; Revised from 1954 Map	7.5	1"=24,000'

1916 Map – The 1916 Map shows the Property as undeveloped land. Unnamed roads are mapped in the approximate current locations of South Lammers and Corral Hollow Roads, as well as the rail line currently located south of the Property. Elevations on the Property are mapped as ranging approximately between 200 feet msl in the southwest to approximately 140 msl in the northeast. Scattered structures are mapped in the vicinity of the Property, including one structure mapped directly north of APN 240-140-16.

1922 and 1947 Maps – The 1922 and 1947 Maps appear similar to the previous map with regard to lack of development on the Property and scattered structures in the vicinity of the Property. The 1947 map shows three unnamed tanks and approximately 16 structures located northwest of the Property along the west side of South Lammers Road, where subsequent maps identify the structures as “Oil Tanks”.

1954 Map – The 1954 Map appears similar to the previous map with the exception of soil disturbances near the two underground pipeline easements. The disturbances are located at the

approximate current location of the PG&E/Chevron active pipeline easement and at the reportedly abandoned Shell pipeline easement, located within the west-central portion of the Property. The Delta Mendota Canal and associated levee also appears near the southwest boundary of the Property in the 1954 Map. Lammers Road and Corral Hollow Roads are now named as such.

1968 Map – The 1968 Map shows a structure located in the north central portion and a pit located in the northeast corner of APN 240-140-31. Scattered structures are mapped in the vicinity of the Property along Corral Hollow Road and South Lammers Road.

1981 Map – The 1981 Map appears similar to the previous map with regard to the Property and surrounding parcels, with the exception of orchards mapped in the northern portion of APN 240-140-31.

3.3.2 Aerial Photographs

The following aerial photographs, provided by EDR, were reviewed for information regarding past conditions and land use at the Property and in the immediate vicinity. These photographs are presented in Appendix D.

TABLE 3.3.2-1

Flyer	Year	Scale
USGS	1949	1"=655'
Cartwright	1957	1"=666'
USGS	1968	1"=600'
Cartwright	1974	1"=666'
USGS	1982	1"=690'
EDR	1993 Composite DOQQ	1"=500'
USGS	1998	1"=666'
EDR	2005	1"=500'
EDR	2006	1"=500'

1949 Photograph – The Property is undeveloped pasture land. Scattered structures are evident north of the Property, while the oil tanks identified in the topographic maps (1947 onward) are northwest of the Property. The Delta Mendota Canal is visible southwest of the Property and soil disturbances are shown in the direction of the two underground pipelines noted in the topographic maps.

1952 Photograph – The 1952 Photograph is similar to the previous photograph with regard to lack of structures on the Property; however, the Property appears to be used for agricultural purposes, including row crops, dry crops, and an orchard. What appears to be irrigation overflow

basins are located in the northwest and northeast corners of APN 240-140-31. Parcels in the vicinity of the Property appear to consist of a mix of agricultural uses.

1968 through 1982 Photographs – The 1968 through 1982 photographs are similar to the previous photograph with the exception of one structure shown in the north-central portion of APN 240-140-31 (1968 through 1982 Photographs) and one structure shown on the west end of APN 240-140-23 (1982 Photograph).

1993 Photograph – The 1993 Photograph shows two additional structures on APN 240-140-23. Additional structures are visible in the vicinity of the Property.

1998 through 2006 Photographs – The 1998 through 2006 Photographs are similar to the previous photograph with regards to the Property and surrounding parcels.

3.3.3 Fire Insurance Maps

EDR prepared a Sanborn Fire insurance map search for the Property and surrounding properties. EDR reported that no maps were available for the Property and surrounding properties. The Sanborn Map Report is presented in Appendix E.

3.3.4 City Directory

City Directories, published since the 18th century for major towns and cities, lists the name of the resident or business associated with each address. A city directory search conducted by EDR is located in Appendix F.

EDR reports that the Property address of 28001 South Corral Hollow Road is identified as “residential” for the 2000 reporting period, while the Property address of 27710 South Lammers Road is identified as “residential” for the 1996 and 2000 reporting periods. The remainder of the addresses associated with the Property are not listed in the City Directory Report.

3.3.5 Government Agencies

The following agencies were contacted pertaining to possible past development and/or activity at the Property.

- City of Tracy Building/Planning Department
- San Joaquin County Building/Planning Department
- San Joaquin County Fire Prevention Bureau
- San Joaquin County Department of Environmental Health
- San Joaquin County Assessor’s Office
- Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR)
- California Regional Water Quality Control Board
- Department of Toxic Substances Control

City of Tracy Building/Planning Department. The City of Tracy Building/Planning Department was contacted regarding files for the Property. City representatives indicated that files are not retained for parcels outside of the city limits.

San Joaquin County Community Development Departments. The San Joaquin County Community Development Department was contacted regarding the Property; they indicated no files were available for the Property¹.

San Joaquin County Fire Prevention Bureau. The San Joaquin County Fire Department was contacted regarding files for the Property; they indicated no files were available for the Property.

San Joaquin County Environmental Health Department. The San Joaquin County Environmental Health Department was contacted regarding the Property. The following files were reviewed:

- 27710 South Lammers Road - Complaint Investigation Form from 1993 regarding the dumping of an unknown substance onto vacant land. The complaint was subsequently resolved.
- 27710 South Lammers Road - Soil Suitability Study (1992).
- Tusso Farms - Domestic Water Well Analysis (1992).

San Joaquin County Assessor's Office. The San Joaquin County Assessor's Office website was viewed for information regarding the acreage and zoning for the Property. The Property is zoned as "AU-20" (Agricultural- Urban Reserve).

Department of Conservation, Division of Oil, Gas, and Geothermal Resources. The DOGGR online database was reviewed for the Property. One well is documented on the Property in the southern portion of APN 240-140-31. The well, which is identified by API Number 07700382, is reported to have been drilled and abandoned as a "dry well" in 1964; therefore, the well was not developed for active production.

We reviewed the Geotracker Database maintained by the State Water Resource Control Board (SWRCB) to identify ongoing environmental site assessment and remedial activities within the immediate vicinity of the Property. The Geotracker database did not identify any sites within the immediate vicinity of the Property that would be considered to become an environmental concern.

We reviewed the Envirostor Database maintained by Department of Toxic Substances Control (DTSC) to identify ongoing environmental site assessment and remedial activities within the immediate vicinity of the Property. The Envirostor database did not identify any sites within the immediate vicinity of the Property that would be considered an environmental concern.

¹ Departmental records only date back to 1980. Records prior to 1980 require an archive search.

3.4 ENVIRONMENTAL RECORD SOURCES

EDR performed a search of federal, tribal, state, and local databases regarding the Property and nearby properties. Details regarding the databases searched by EDR are provided in Appendix A. A list of the facilities documented by EDR within the approximate minimum search distance of the Property is provided below.

3.4.1 Federal ASTM Standard/Supplemental Sources

3.4.1.1 Subject Property

The Property is not listed on the Federal ASTM Standard or supplemental sources.

3.4.1.2 Other Properties

No properties within appropriate ASTM search distances of the Property were identified on Federal ASTM Supplemental sources.

3.4.2 State ASTM Standard/Supplemental Sources

3.4.2.1 Subject Property

The Property is not listed on the State ASTM Standard or supplemental sources.

3.4.2.2 Other Properties

The following databases were identified on State ASTM Supplemental sources and located within appropriate ASTM search distances of the Property.

- UST - Underground Storage Tank – The UST database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

Equal/Higher Elevation

MCI Telecommunications Corp.

28499 Corral Hollow Road

- HIST UST - Historical UST Registration Database – Historical USTs registered with the State.

Equal/Higher Elevation

Charles Spatafore Jr.

Five-T Ranch

27880 S Lammers Rd.

27369 S Lammers Rd.

3.4.3 Local ASTM Supplemental Sources

3.4.3.1 Subject Property

The Property is not listed on Local ASTM supplemental databases.

3.4.3.2 Other Properties

The following databases were identified on Local ASTM Supplemental sources and located within appropriate ASTM search distances of the Property.

- FUDS - Formerly Used Defense Sites – The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Equal/Higher Elevation

Tracy Auxiliary Field No. 5

No address listed by EDR

- CA FID - California Facility Inventory Database – The CA FID contains active and inactive underground storage tanks locations. The source is the State Water Resource Control Board.

Equal/Higher Elevation

MCI Telecommunications Corp.

28499 Corral Hollow Road

- SWEEPS - Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Equal/Higher Elevation

MCI Telecommunications Corp.

28499 Corral Hollow Road

- WMUDS/SWAT – The Waste Management Unit Database System is used for program tracking and inventory of waste management units. The source is the SWRCB.

Higher/Equal Elevation

Tracy Airport Land Treatment Facility

Corral Hollow Road

The MCI telecommunications warehouse, which is located adjacent to the Property at 28455 South Corral Hollow Road, is listed on several databases including UST, CA FID, and SWEEPS UST. EDR indicates that all registered USTs are either inactive or closed. The MCI facility is not listed as a contaminated site and would not be considered a current environmental concern to the Property.

Charles Spatafore and Five-T-Ranch, which are located within 1/8 mile of the Property at 27880 and 27369 South Lammers Road, respectively, are listed on the HIST UST database. Regarding the parcel at 27800 South Lammers Road, EDR reports that a 500-gallon UST had been installed in 1970 and for the parcel located at 27369 South Lammers Road, EDR reports that a 600-gallon UST had been installed in 1969. The parcels at the above-referenced addresses are not listed as contaminated sites and would not be considered a current environmental concern to the subject Property.

The Tracy Airport Land Treatment Facility, which is located approximately 500 feet southeast of the Property at Corral Hollow Road, is listed on several databases including WMUDS/SWAT and FUDS EDR indicates that all registered USTs are either inactive or closed. The Tracy Airport Land Treatment Facility is not listed as a contaminated site and would not be considered a current environmental concern to the Property.

The Tracy Auxiliary Field No. 5, which is located approximately 0.9 miles southeast of the Property, appears to be beyond appropriate ASTM search distances; therefore, would not be considered a current environmental concern to the Property.

Properties that are on the “Orphan Summary” list appear to be located beyond the ASTM recommended radius search criteria.

4.0 SITE RECONNAISSANCE

4.1 METHODOLOGY

ENGEO conducted a reconnaissance of the Property on February 21, 2012. The Property was viewed for hazardous materials storage, superficial staining or discoloration, debris, stressed vegetation, or other conditions that may be indicative of potential sources of soil or groundwater contamination. The site was also checked for evidence of fill/ventilation pipes, ground subsidence, or other evidence of existing or preexisting underground storage tanks. Photographs taken during the site reconnaissance are presented in Figure 3.

4.2 GENERAL SITE SETTING

The generally level site is primarily used for agricultural purposes with one residence located at 27710 South Lammers Road.

4.3 EXTERIOR OBSERVATIONS

Structures. The following structures were observed at 27710 South Lammers Road (APN 240-140-23):

- One 2-story residential house, which consisted of stucco walls and a tile roof. The back yard is landscaped with a pool.

- One metal-sided barn (approximately 2000 square feet), which was approximately 30% filled with office furniture.
- Three field trailers (approximately 550 square feet each). The trailers were locked at the time of the reconnaissance.
- Two metal connex storage containers (approximately 500 square feet each). The containers were locked at the time of the reconnaissance.

Hazardous Substances and Petroleum Products in Connection with Identified Uses. The following hazardous substances or petroleum products were observed within the Property during the reconnaissance:

- One approximately 100-gallon polyurethane AST was observed behind the residential structure at APN 240-140-23. The AST was approximately 50% filled with water.
- One approximately 50-gallon metal (back of truck) AST was observed at the east end of APN 240-140-23. The AST appeared empty.

Storage Tanks. Other than the above mentioned containers, no other above-ground storage tanks or evidence of existing underground storage tanks was observed during the reconnaissance.

Odors. No odors indicative of hazardous materials or petroleum material impacts were noted at the time of the reconnaissance.

Pools of Potentially Hazardous Liquid. No pools of potentially hazardous liquid were observed within the Property at the time of our reconnaissance.

Drums. No drums were observed on the Property at the time of the reconnaissance.

Hazardous Substance and Petroleum Product Containers. Other than the items mentioned above, no other hazardous substance or petroleum product containers were observed on the Property at the time of our reconnaissance.

Polychlorinated Biphenyls (PCBs). We observed five pole mounted transformers at APN 240-140-23 and one pole-mounted transformer on the west side of APN 240-140-31. The transformers appeared to be in good condition and we noted no signs of leakage of possible PCB-containing materials.

Pits, Ponds and Lagoons. Four basins were observed at the northern end of APN 240-140-16 and 240-140-31. The basin volumes ranged in size from approximately 2,500 cubic yards (CY) to approximately 6,000 CY and appeared to be used in connection with irrigation runoff. No other pits, ponds, or lagoons were observed within the Property at the time of our reconnaissance.

Stained Soil/Pavement. No stained soil or pavement was observed within the Property at the time of our reconnaissance.

Stressed Vegetation. No signs of stressed vegetation were observed on the Property at the time of our reconnaissance.

Solid Waste/Debris No disposal of solid waste was observed at the Property; however, we did observe several farm implements in varied stages of decay, as well as debris associated with farming activities (i.e. pvc and metal irrigation piping, tires, an engine block, metal and wood fencing material, empty boxes from irrigation supplies).

Wastewater. No wastewater conveyance systems were observed at the Property during the reconnaissance.

Wells. Two wells were observed within the Property during our reconnaissance. It is our understanding that an additional, inoperable irrigation well is located on the Property.

Septic Systems. No septic systems were observed within the Property during our reconnaissance; however, Mr. Les Serpa, of The Surland Companies, indicated that the residence located at 27710 South Lammers Road is connected to an on-site septic system.

4.4 ASBESTOS-CONTAINING MATERIALS AND LEAD-BASED PAINT

An asbestos and lead-based paint (LBP) survey was not conducted as part of this assessment; however, given the newer age of the existing structures at APN 240-140-23, it is unlikely that asbestos or LBP exists. Prior to demolition, San Joaquin County Building Department should be contacted regarding demolition requirements.

4.5 INDOOR AIR QUALITY

An evaluation of indoor air quality, mold, or radon was not included as part of the contracted scope of services. The California Department of Health Services has conducted studies of radon risks throughout the state, sorted by zip code. Results of the studies indicate that two tests were conducted within the Property zip code, with no tests exceeding the current EPA action level of 4 picocuries per liter [pCi/L]²).

In accordance with ASTM E2600-10 (Tier 1) (*Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions*); there are no potential petroleum hydrocarbon sources for vapor intrusion within ¹/₁₀ mile of the Property or volatile organic compound (VOCs) sources within ¹/₃ mile of the Property.

² California Department of Health Services – Division of Drinking Water and Environmental Management – Radon (<http://www.cdph.ca.gov/HealthInfo/environhealth/Documents/Radon/CaliforniaRadonDatabase.pdf>).

5.0 INTERVIEWS

Mr. Les Serpa, a representative of The Surland Companies, completed environmental site assessment questionnaires pertaining to client and key site manager applicable environmental information regarding the Property. In the questionnaires, Mr. Serpa did not identify potential environmentally related issues with the Property. The questionnaires are presented in their entirety in Appendix G.

6.0 FINDINGS

The reconnaissance and records research did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the Property. A review of regulatory databases maintained by county, state and federal agencies found no documentation of hazardous materials violations or discharge on the Property. No documented soil or groundwater contamination associated with abutting properties was found from the records research.

7.0 OPINIONS AND DATA GAPS

It is our opinion that the findings of this study are based on a sufficient level of information obtained during our contracted scope of services to render a conclusion as to whether additional appropriate investigation is required to identify the presence or likely presence of a REC.

The following data gap was identified:

- We did not obtain any information regarding the suspected removal (or follow-up confirmatory sampling) of the former Shell pipeline.

8.0 CONCLUSIONS

The study included a review of local, state and federal environmental record sources, standard historical sources, aerial photographs, fire insurance maps and physical setting sources, a reconnaissance of the Property to review use and current conditions and to check for the storage, use, production or disposal of hazardous or potentially hazardous materials and interviews with persons knowledgeable about current and past site use.

The site reconnaissance and records review did not find documentation or physical evidence of soil or groundwater impairments associated with the use of the Property. A review of regulatory databases maintained by county, state, and federal agencies found no documentation of hazardous materials violations or discharge on the Property. A review of regulatory agency records and available databases did not identify contaminated facilities within the appropriate ASTM search distances that would be expected to impact the Property.

Based on the findings of this assessment, two Recognized Environmental Conditions (RECs) and no historical RECs were identified for the Property.

ENGEO has performed a phase I environmental site assessment of the Property in general conformance with the scope and limitations of ASTM E 1527-05. Based on the findings of this assessment, no Recognized Environmental Conditions (RECs) and no historical RECs were identified for the Property; however, the following potential environmental concerns were noted:

- The Property, either in part or whole, has historically been used for agricultural purposes, including row crops and orchards, since at least 1957. Historical records indicating the types and quantities of chemicals and pesticides, which may have been used on the Property, are not readily available from the County. It is conceivable that persistent agrichemicals may have been applied in the past, which could have adversely affected near-surface soils.
- Historical records and previous environmental studies (ENGEO 1994 and Geocon 2008) indicate that a reportedly abandoned/removed, underground pipeline crosses approximately 300 to 400 feet of the southwest corner of APN 240-140-31 and through the eastern-central portions of APN 240-140-16, 240-140-18, and 240-140-22. The pipeline, which was reportedly operated by Shell Oil Company from the 1910s to the 1970s, transported crude oil between Martinez and the San Joaquin Valley via a pumping station formerly located on Lammers Road. According to Shell Pipeline Corporation, the pipeline was purged of product and abandoned in place in the early 1970s; however, information reviewed in the 2008 Geocon report indicates that the section of pipeline, which was located on the parcel north of the Property, had been removed in the late 1970s and that a recent subsurface utility survey across the Property did not indicate the presence of a metallic pipeline. No records relating to the pipeline removal or post-removal conformational soil sampling were readily available from either Shell or the San Joaquin County Environmental Health Department (SJCEH). Because historical pipelines throughout the western Central Valley are known to have had issues with leakage, and no information regarding any post-removal confirmational sampling was readily available from either Shell or the SJCEHD, this is considered a potential environmental concern.
- Historical records, the site reconnaissance, and previous environmental studies (ENGEO 1994) indicate that three active pipelines extend through the western end of Property through APN 240-140-18, 240-140-22, 240-140-23, and 240-140-16. Two of the three active lines are PG&E natural gas lines, which generally do not present an environmental concern; however, the third line is a Chevron petroleum pipeline, which would be subject to possible product leaks. Because historical pipelines throughout the western Central Valley are known to have had issues with leakage, this is considered a potential environmental concern.

Based on the findings of this assessment, to be prudent ENGEO recommends further environmental studies to determine the potential impacts due to past agricultural use of the Property and the active/abandoned/removed petroleum product underground pipeline. Any further environmental studies should be completed before the commencement of grading activities.

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USGS 15' Carbona Quadrangle Maps dated 1922 and 1947.

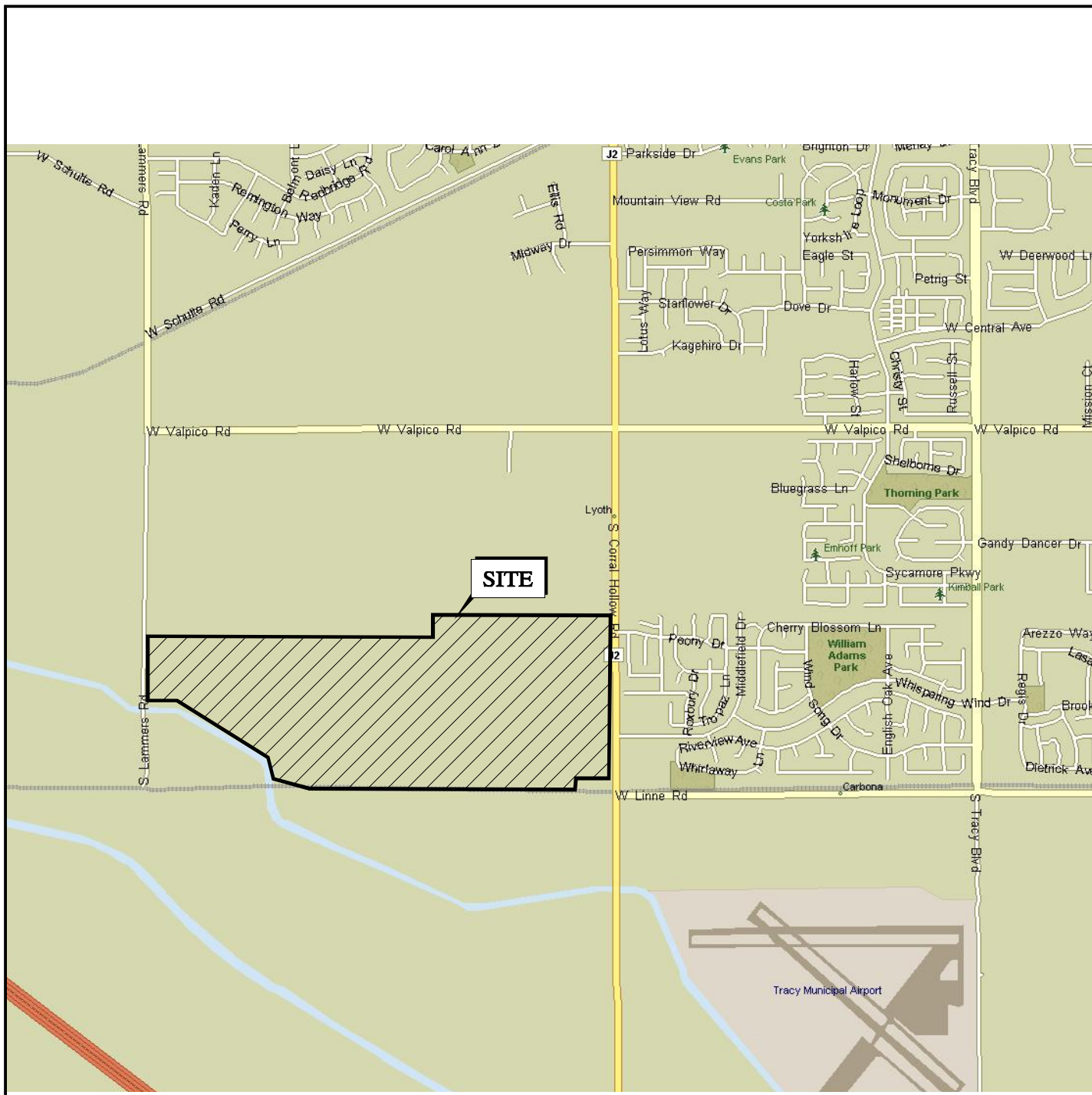
Wagner, D.L., et al., 1991, Geologic Map of the San Francisco-San Jose Quadrangle, California, 1:250,000.

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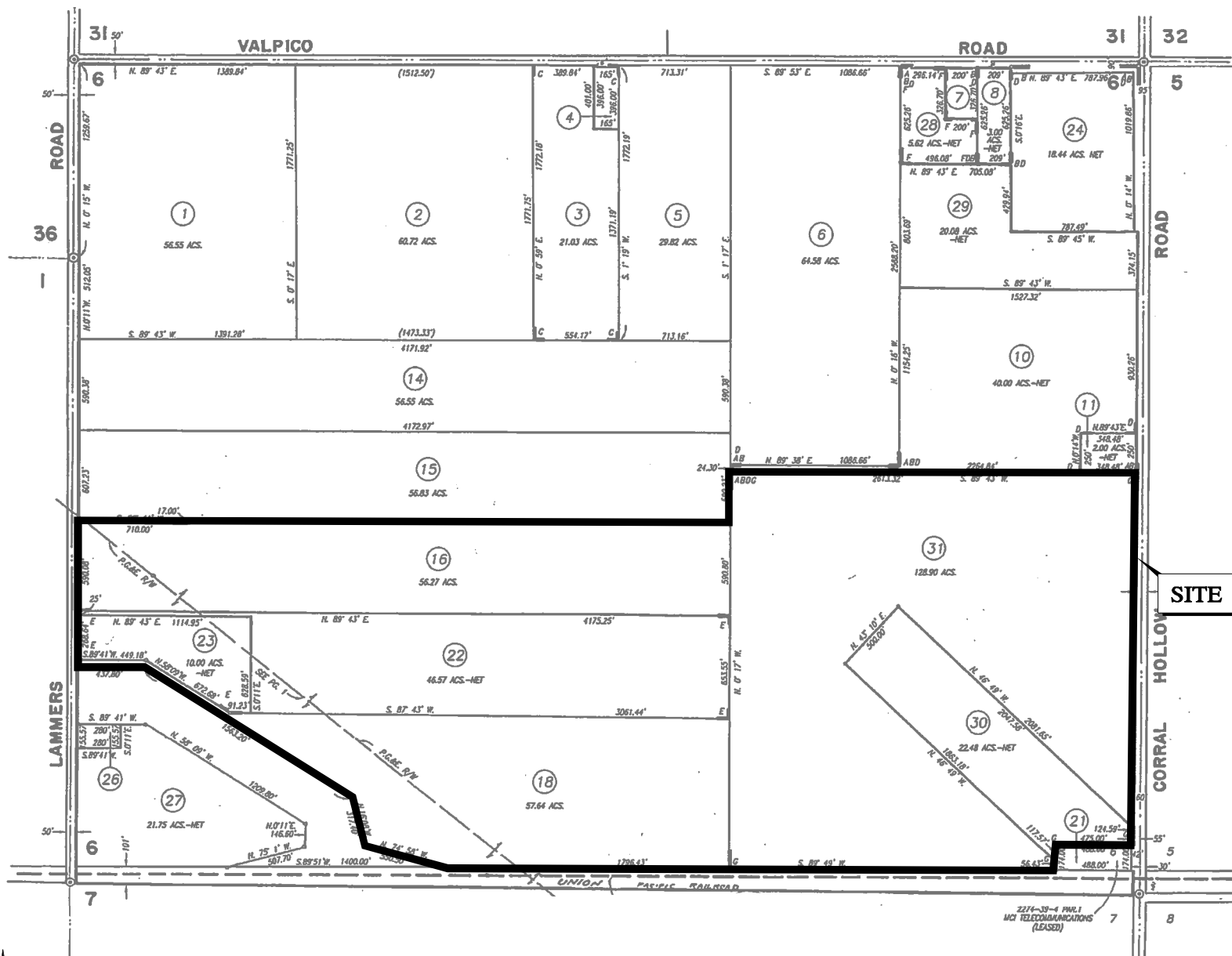


BASE MAP SOURCE: MS STREETS AND TRIPS



VICINITY MAP
ELLIS PROPERTY
TRACY, CALIFORNIA

PROJECT NO.: 3887.000.001		FIGURE NO. 1
SCALE: AS SHOWN		
DRAWN BY: DLB	CHECKED BY: SH	



SITE

BASE MAP SOURCE: ASSESSOR'S OFFICE COUNTY OF SAN JOAQUIN



ASSESSOR'S PARCEL MAP
ELLIS PROPERTY
TRACY, CALIFORNIA

PROJECT NO.: 3887.000.001	
SCALE: AS SHOWN	
DRAWN BY: DLB	CHECKED BY: SH

FIGURE NO.

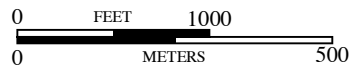
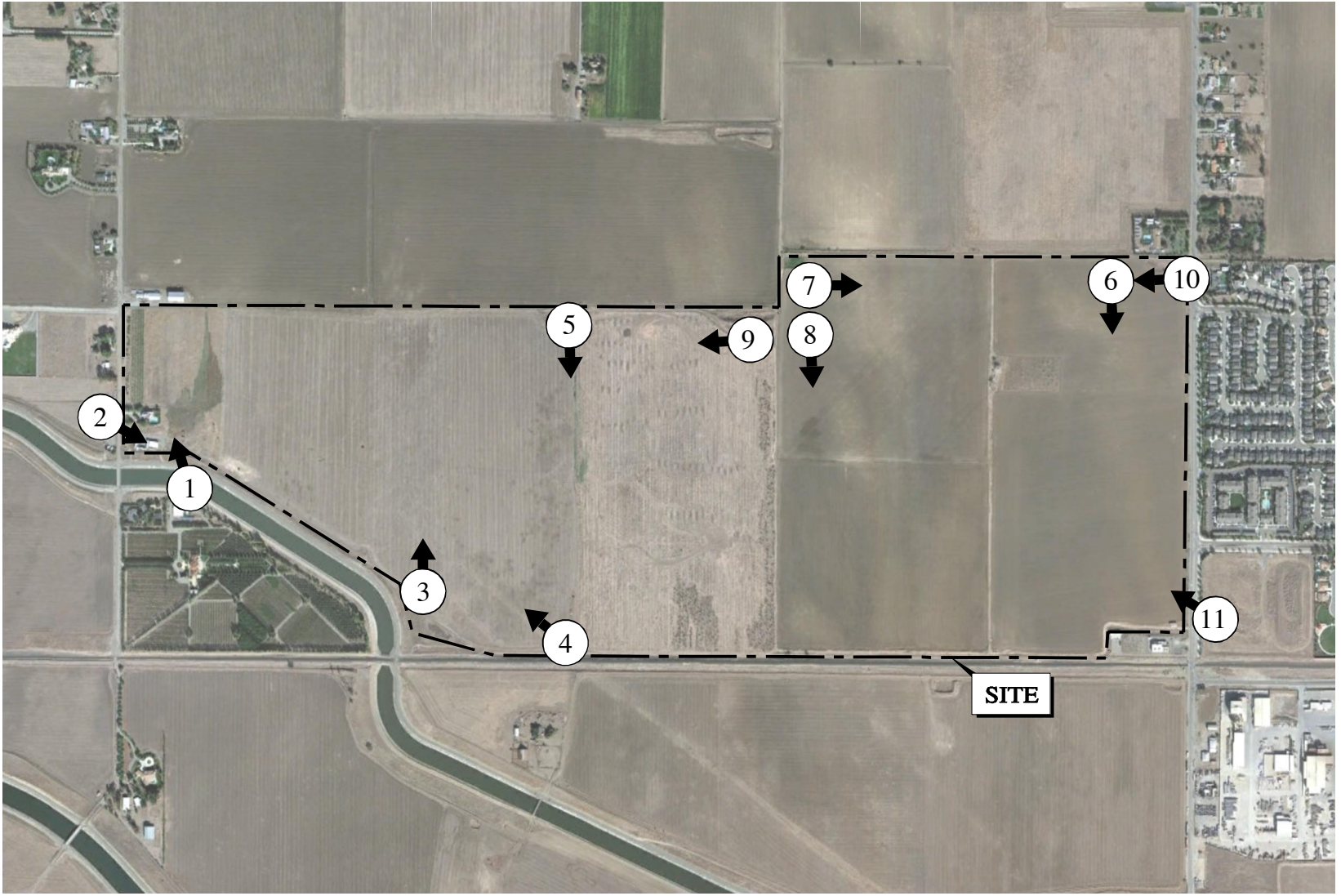
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ORIGINAL FIGURE PRINTED IN COLOR



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BASE MAP SOURCE: GOOGLE EARTH



PHOTOGRAPH LOCATION MAP
ELLIS PROPERTY
TRACY, CALIFORNIA

EXPLANATION

11 → APPROXIMATE LOCATION OF PHOTO AND DIRECTION

PROJECT NO.:	3887.000.001	FIGURE NO. 3
SCALE:	AS SHOWN	
DRAWN BY:	DLB	
CHECKED BY:	SH	



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PHOTO 5



PHOTO 6



PHOTO 7



PHOTO 8



SITE PHOTOGRAPHS
ELLIS PROPERTY
TRACY, CALIFORNIA

PROJECT NO.: 3887.000.001	
SCALE: NO SCALE	
DRAWN BY: DLB	CHECKED BY: SH

FIGURE NO
4B

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PHOTO 9



PHOTO 10



PHOTO 11



SITE PHOTOGRAPHS
ELLIS PROPERTY
TRACY, CALIFORNIA

PROJECT NO.: 3887.000.001		FIGURE NO 4C
SCALE: NO SCALE		
DRAWN BY: DLB	CHECKED BY: SH	

Final Report

Safety Aspects of Energy Pipelines Regarding the Proposed Ellis Development

M.J. Rosenfeld, PE

May 1, 2012



Kiefner & Associates, Inc.

585 Scherers Court

Worthington, Ohio 43085

(614) 888-8220

www.kiefner.com

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Final Report No.12-055

Final Report

on

**SAFETY ASPECTS OF ENERGY PIPELINES
REGARDING THE PROPOSED ELLIS DEVELOPMENT**

to

SURLAND COMPANIES, LLC

May 1, 2012

by

M.J. Rosenfeld, P.E.

**Kiefner and Associates, Inc.
585 Scherers Court
Worthington, Ohio 43085**

0481-1201

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Safety Aspects of Energy Pipelines regarding the Proposed Ellis Development

M.J. Rosenfeld, PE

INTRODUCTION

A proposed project called Ellis, a mixed use development consisting of single family residential homes, some commercial uses, and a proposed community swim center, adjacent to Tracy, CA, is the subject of this report. The current land use is agricultural. The western edge of the proposed development site is traversed by two active natural gas pipelines and one active crude oil pipeline. The natural gas pipelines are owned and operated by Pacific Gas & Electric (PG&E), while the petroleum pipeline is owned and operated by Chevron Pipeline Company. Given what has been learned about pipeline safety measures since the events of San Bruno, and how that may apply to the pipelines at Ellis, the task of Kiefner & Associates, Inc. (KAI) for Ellis was to review technical parameters pertaining to the gas pipelines, evaluate whether the pipelines pose an unusual hazard considering the proposed land use, identify threats to the integrity of the pipelines, and recommend mitigations of those threats to lower risk and increase safety.

CONCLUSIONS

How the PG&E Lines Differ from San Bruno

The pipeline incident at San Bruno, CA was caused by a PG&E pipeline. The pipeline was 30 inches in diameter and installed in 1948, a section of which was rerouted in 1956. Certain short pieces of pipe used in the 1956 reroute did not exhibit attributes characteristic of normal line pipe. It was one of these short pieces of non-standard pipe that failed.¹ It is not known with certainty who manufactured the pipe, why it was manufactured the way it was, how the material came into PG&E's possession, or how it came to be installed in the pipeline. However, it is safe to say that the pipe that caused the incident was not manufactured to be prime line pipe.² The pieces of non-standard pipe almost certainly were not subjected to a pressure test to a high level at the pipe mill, and reportedly were not subjected to a pressure test in the field before or after

¹ "Pacific Gas and Electric Company, Natural Gas Transmission Pipeline Rupture and Fire, San Bruno, California, September 9, 2010", Accident Report NTSB/PAR-11/01, PB2011-916501, National Transportation Safety Board, Adopted August 30, 2011.

² The rolling direction of the plate was transverse to the pipe axis indicating that it was rolled as a short piece, the plate strength was lower than standard strengths for large OD pipe, and the longitudinal seam only penetrated to half the thickness of the pipe wall.

installation. There were no regulations governing the design and construction of pipelines at that time, and industry standards for pipeline construction were still evolving, so a commissioning hydrostatic pressure test was not necessarily a uniformly observed practice at that time. PG&E's records did not correctly identify the source or specifications of the short pieces of pipe. It is likely that if PG&E had been aware of the details of the pipe, the pipe never would have been installed, or if discovered later would have been replaced.

Lines 002 and 401 were both installed in the modern era of pipe manufacturing and pipeline construction. The standards³ used to manufacture the pipe installed in both pipelines required a pressure test of each length of pipe to 90% of SMYS at the pipe mill. The regulations in force nationally and in California required a hydrostatic pressure test to at least 1.25 times the operating pressure in Class 1 and 2 areas, or to 1.5 times the operating pressure in Class 3 and 4 areas. PG&E believes that records of the construction, including the pre-service pressure tests, are complete and accurate.⁴ The segments of interest in either gas pipeline are not part of PG&E's response to the CPUC Decision (D.)11-06-017 ordering operators of natural gas pipelines within the State of California to replace or pressure test pipelines that were never pressure tested or for which verifiable documents of such testing do not exist.^{5,6,7} The risk of an accident caused by an incorrectly manufactured piece of pipe or a non-standard piece of pipe in the line segments adjacent to the proposed Ellis Development has been effectively mitigated because those line segments have been verified to have already passed pressure tests to specified margins above the operating pressures.

Summary of Other Findings

The review of technical details concerning the pipelines and proposed site development concepts led to the following conclusions:

- The pipelines of interest are essentially similar to a large number of other pipelines making up the energy product transportation infrastructure prevalent throughout California and elsewhere in the US and operating in locations similar to the proposed development project.
- The gas pipelines appear to be in sound overall condition based on the results of recent integrity assessments by in-line inspection.

³ High-Test Line Pipe, API Specification 5LX, 18th Ed., 1971 for Line 002 and Specification for Line Pipe, API Specification 5L, 41st Ed., 1995 for Line 401.

⁴ F. Dauby email to M. Rosenfeld, April 24, 2012.

⁵ http://docs.cpuc.ca.gov/PUBLISHED/NEWS_RELEASE/136948.htm

⁶ http://docs.cpuc.ca.gov/WORD_PDF/AGENDA_DECISION/136874.pdf

⁷ Hydrostatic tests are planned for two short segments of Line 002 in the vicinity of Westley, CA which is around 20 miles south of Tracy.

- The crude oil pipeline can be presumed to be in sound overall condition because the pipeline will have been assessed for its integrity in order to conform to regulatory requirements.
- The pipelines can be expected to continue to operate reliably and safely assuming that the pipeline operators continue to observe normal good practices in accordance with applicable safety regulations and established industry standards.
- The pipelines are exposed to a limited range of potential integrity threats which are mitigated by conventional pipeline operating practices which include periodic inspections, evaluation of identified conditions, and repairs if necessary.
- Building setback distances are not controlled by applicable pipeline safety regulations or standards.
- The pipelines do not impose hazards to persons in the proposed development above and beyond those which are already commonly present and associated with these same pipelines and other pipelines already in place throughout adjacent communities and counties in the State of California. The pipelines also present lower risk compared to many other widely-present societal factors including motor vehicle accidents, household accidents, recreational accidents, natural events, disease, or crime, to name a few.
- Proposed site development plans incorporate important features that reduce the risk associated with the most important integrity threat (damage to the pipe caused by encroachment).

Recommendations

The proposed site development plan already incorporates an important risk management feature, which is to locate the pipelines within a public space that is not under the control of a multitude of individual landowners. The reduction in risk mainly comes from reducing the likelihood that the pipelines could be damaged during land development activities or by individual landowners later on. The plan also assures that buildings are set back well beyond the common 25 ft practice. No recommendation for a specific setback is made, but any increase from the standard 25 ft reduces risks associated with that specific integrity threat.

It is recommended that the developer work with PG&E and Chevron to implement and observe a site damage-prevention plan. This may potentially include:

- designing a site development plan incorporating permanent land use over the pipeline right of way that minimizes the potential for damage to the lines (as discussed above, this is already an integrated plan design feature, but is listed here because it is an important component of a damage prevention plan);
- prominently marking the line locations prior to site development, maintaining markings throughout the development process, and final marking after work is complete;
- communicate plans for significant excavation or land contouring work;

- identify changes in land contour that could significantly reduce the soil cover over the pipelines;
- evaluate the effects of heavy construction vehicles crossing the lines, designate areas for heavy construction vehicles to cross the lines, and provide temporary fill or other temporary protection over the lines where necessary;
- minimize installations of new buried utilities and services across the existing pipelines;
- evaluate whether the existing lines should be lowered to increase vertical separation between the pipelines and new surface features;
- and develop other damage-prevention measures as may be necessary.

In addition to the damage prevention measures listed above, the developer and the pipeline operators should consider other measures for reducing risk suggested in the Pipelines and Informed Planning Alliance (PIPA) recommended practices on informed land use. Many of PIPA's recommendations appear to already have been accounted for in site plans, but additional details for consideration (if they have not been considered already) include:

- select landscaping vegetation to avoid root structures that damage pipeline coatings,
- avoid planting trees that prevent direct observation of the pipelines by aerial patrol,
- manage storm runoff to prevent erosion of pipeline bedding,
- consider accessibility to pipeline personnel and first responders in the event of an emergency,
- incorporate escape routes from areas within the Potential Impact Radius (PIR).

BACKGROUND

This section of the report provides basic information about pipelines in the United States and the State of California. It also describes the property to be developed, and the pipelines which cross through it.

Energy Pipelines in the US

Pipelines are a key element of the US energy and commodity transportation infrastructure. Natural gas pipelines and hazardous liquid pipelines are regulated for safety by the Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA, formerly the Office of Pipeline Safety or OPS). Governing regulations for natural gas pipelines

are found in 49 CFR 192⁸ and for hazardous liquid pipelines in 49 CFR 195⁹. In the State of California, natural gas pipelines are regulated by the California Public Utilities Commission (CPUC) and hazardous liquid pipelines by the California State Fire Marshal (CSFM).

From PHMSA's website¹⁰, "For the Public" page, General Pipeline Frequently Asked Questions ("What can you tell me about our nation's pipelines?"):

"The nation's pipelines are a transportation system. Pipelines enable the safe movement of extraordinary quantities of energy products to industry and consumers, literally fueling our economy and way of life. The arteries of the nation's energy infrastructure, as well as the safest and least costly ways to transport energy products, our oil and gas pipelines provide the resources needed for national defense, heat and cool our homes, generate power for business and fuel an unparalleled transportation system.

The nation's more than two million miles of pipelines safely deliver trillions of cubic feet of natural gas and hundreds of billions of ton/miles of liquid petroleum products each year. They are essential: the volumes of energy products they move are well beyond the capacity of other forms of transportation. It would take a constant line of tanker trucks, about 750 per day, loading up and moving out every two minutes, 24 hours a day, seven days a week, to move the volume of even a modest pipeline. The railroad-equivalent of this single pipeline would be a train of 75 2,000-barrel tank rail cars every day. These alternatives would require many times the people, clog the air with engine pollutants, be prohibitively expensive and -- with many more vehicles on roads and rails carrying hazardous materials -- unacceptably dangerous.

Pipeline systems are the safest means to move these products."

Pipelines are fairly ubiquitous throughout California as well as the rest of the US. Table 1 lists the quantity of pipelines of various types present in the US and the State of California. There are nearly 300,000 miles of natural gas transmission pipelines in service and over 180,000 miles of hazardous liquid transmission pipelines in service in the US.¹¹ Figure 1 shows the locations and routes of the major natural gas pipelines in the continental US. Figure 2 shows major crude oil and refined products pipelines. Figure 3 shows the locations of major natural gas pipelines in

⁸ Code of Federal Regulations, Title 49 – Transportation, Subtitle B – Other Regulations Relating to Transportation, Chapter I – Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Subchapter D – Pipeline Safety, Part 192 – Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards, 49 CFR 192.

⁹ Code of Federal Regulations, Title 49 – Transportation, Subtitle B – Other Regulations Relating to Transportation, Chapter I – Pipeline and Hazardous Materials Safety Administration, Department of Transportation, Subchapter D – Pipeline Safety, Part 195 – Transportation of Hazardous Liquids by Pipeline, 49 CFR 195.

¹⁰ www.phmsa.dot.org

¹¹ Ibid.

California.¹² While not shown in detail, PG&E Lines 002 and 401 and Chevron's KLM line near Tracy, CA appear on these maps.

Table 2 lists the transmission pipeline mileage by county in the State of California.¹³ San Joaquin County, where the Ellis Development is sited, contains several hundred miles of transmission pipelines comprising 2.2% of the transmission pipeline mileage in California. The major natural gas and hazardous liquid transmission pipelines in San Joaquin County, and near the town of Tracy, CA are shown in Figure 4(a) and Figure 4(b).¹⁴

Description of the Property

The proposed development would be sited on several parcels located west of Corral Hollow Road, north of Linne Road, and east of Lammers Road in Tracy, CA. The parcels comprising 300 acres more-or-less are shown in Figure 5 (outline highlighted, at arrow). The designated land is irregular but approximately rectangular, extending 6,000 ft (approximately) east-west and 2,500 ft (approximately) north-south. It is bounded on the north by abutting property, on the east by Corral Hollow Road, on the south by a Union Pacific Railroad track and a Shell Oil Company petroleum pipeline easement, and on the west by Lammers Road. The southwest corner of the rectangle is cut off at an angle by the Delta Mendota Canal. The California Aqueduct runs approximately parallel to and 1 mile south of the canal. A municipal airport is located approximately ¼ mile to the southeast. A Southern Pacific Railroad track is located approximately ½ mile to the north. Interstate Highway I-580 is located 1 mile to the southwest. A detail of the property is shown in Figure 6.

The two PG&E natural gas pipelines and the Chevron petroleum pipeline cross the southwest edge of the property along an easement 3,600-ft long (approximately) at a 45 degree angle (approximately). The gas pipelines are separated approximately 32 ft apart (centerline distance). The Chevron line is located between the two gas lines separated 26 ft from one and 6 ft from the other. All three pipelines run approximately parallel to each other within a 50 ft easement. A former Shell Oil pipeline crosses the development site at a similar angle to the others at a position between 1,400 ft and 2,000 ft to the east. In the early 1970's the Shell line was taken out of service, abandoned in place, and will not be returned to service.

The current land use is tilled agricultural cropland. The terrain is flat, and soil type has been described as predominantly sandy loam.

¹² www.energy.ca.gov

¹³ www.phmsa.dot.gov

¹⁴ www.npms.phmsa.dot.gov

Description of the Natural Gas Pipelines

The two PG&E natural gas pipelines are designated Line 002 and Line 401. Line 002 runs 118 miles from a PG&E facility near the town of Brentwood, CA to a PG&E facility near Panoche, CA. Line 401 runs 429 miles from the Oregon state line south of Malin, OR to Panoche, CA. Approximately 22.2 miles of the line are adjacent to HCA's. The basic technical parameters of the two pipelines are summarized in Table 3.

The two PG&E natural gas pipelines are 26-inch and 36-inch OD. Industry-wide, 40% of natural gas transmission pipelines are 20 inches in diameter or larger. Thus the two PG&E lines are typical in terms of pipe size.

Natural gas pipelines currently in operation in the US have been constructed throughout the 20th Century. Around 40% of the natural gas transmission pipelines currently in service were built prior to 1960. Line 002, which was constructed in 1972, is newer than 62% of gas transmission pipelines in service. Line 401, which was constructed in 1993, is newer than 82% of the gas pipelines in service. Thus one would expect Lines 002 and 401 to offer a lower inherent risk than many pipelines operating throughout the US because they incorporate newer technology in all aspects of their design and construction.¹⁵ Both pipelines are capable of being internally inspected using in-line inspection (ILI) tools.¹⁶

Approximately 5.7 miles of Line 401 are designated as being adjacent to what are called High Consequence Areas, which includes locations similar to the Ellis Development. The term "High Consequence Area" (HCA) is defined in 49 CFR 192, Subpart O and is discussed later in this report.

Description of the Petroleum Pipeline

The Chevron pipeline is designated the "KLM" line. It transports crude oil from Kettleman, CA to Los Medanos, CA. The available technical parameters are listed in Table 3. Chevron withheld other information citing national security reasons.

¹⁵ Age alone does not determine a pipeline's fitness for service, but age does affect susceptibility to some kinds of pipeline integrity threats. This assertion is supported by analysis of reportable incident data showing an increased rate of occurrence of failures per operating mile-year due to external corrosion and pipe manufacturing defects, both of which are affected by pipeline attributes tied to the pipeline technology characteristic of the era of construction. These factors can be recognized and accounted for in the pipeline's integrity management plans.

¹⁶ ILI is performed using sophisticated tools propelled by the flow of gas in the line, and incorporating various sensor technologies to detect, measure, and record the condition of the pipe both inside and out. ILI tools are capable of identifying external and internal corrosion, indentations and other deformations, damage from excavators hitting the line, imperfections related to the original manufacture of the pipe, and normal features related to construction such as bends, branches, and casings, depending on the tool configuration and sensors on board. Evaluation methods and acceptance criteria specified in Federal regulations and industry fitness-for-service standards are used to determine whether corrosion or other conditions identified by ILI, or discovered in the course of field investigation digs, could affect the safety of the pipeline and to decide whether the pipe remains fit for its intended service or should be repaired. The condition of many other critical components of the US economic infrastructure is managed by a similar process of periodic inspection, evaluation against fitness-for-service criteria, and repair as necessary, including highway bridges, commercial airliners, power plants, and the like.

The Chevron line is 18 inches in diameter with a capacity of 90,000 barrels per day. Industry-wide hazardous liquid transmission pipelines range in size from 4-inch NPS to 48-inch OD, but about half are between 8-inch and 12-inch NPS, so the Chevron line is a little larger than average but not unusually so.

Liquid transmission pipelines operating in the US have been constructed throughout the 20th Century and have a similar age profile to natural gas pipelines. The LMK line, constructed in 1945, is older than most. Nevertheless, there are 14,270 miles of petroleum pipelines currently in service that were constructed in the same decade as the LMK line, and an estimated 14,000 miles of petroleum lines in service that pre-date those. Despite its age, the Chevron line will have been retrofitted with many modern features including cathodic protection systems to prevent corrosion, modifications to allow running ILI tools, and supervisory control and data acquisition systems for monitoring its operation and responding to emergencies. Regulations and standards concerning operation and maintenance of pipelines apply to all pipelines regardless of the year of installation. Provided a pipeline is routinely inspected and properly maintained, its age does not determine its fitness for service.

EVALUATION OF THE SAFETY OF THE PIPELINES

Safety of the PG&E Pipelines

General Integrity Considerations

Both pipelines were constructed in the modern era of gas pipeline technology, using pipe manufactured from high-strength, low-alloy steel. Both lines were designed, constructed, and are operated and maintained in accordance with requirements of Federal pipeline safety regulations (49 CFR 192). Every piece of pipe used in both natural gas lines was pressure tested at the pipe mill to at least 90% of the specified yield strength (SMYS) as a proof of the pipe's integrity. The pipelines were then subjected to a pressure test to a high proportion of their specified strength after construction and prior to entering service as a final proof of the integrity of the completed pipelines and of their capability to carry the intended pressure with the margin of safety specified in Federal regulations, or greater. Line 002 was pressure tested to a hoop stress of 90% SMYS, while Line 401 was pressure tested to a hoop stress of 99.6% SMYS.

The pipeline facilities are protected against deterioration in the soil environment by high-integrity coatings backed up by cathodic protection systems. The standard operating practices of PG&E also involve periodic surveys of the pipeline from above ground using electrical

measurements¹⁷ to detect coating damage and regular periodic checks on the functioning of the cathodic protection system.

Recent Integrity Assessments

Both pipelines have recently undergone an in-line inspection. PG&E shared the results of the recent ILI of Line 002 performed in 2006 the ILI of Line 401 performed in 2005. The ILI included the line segments which cross the proposed development. The ILI results indicated that the pipelines are in overall sound condition. Areas of corrosion ranged from superficial to minor in the segments of both lines that cross the western edge of the Ellis Development.

Minor corrosion is not at all unusual in a buried pipeline that has been in service for many years. The corrosion in Line 002 would have to be more than 3 times more severe than it currently is to cause a pipeline failure, while the corrosion in Line 401 would have to be more than 5 times more severe than it currently is to cause a pipeline failure. Given the length of time the lines have been in service, there is no evidence that the corrosion rates associated with these flaws are unusually high. In fact, it is possible that the corrosion occurred at some time in the past and is no longer active due to the CP corrosion prevention system. (For example, it is not unusual for a new pipeline to experience corrosion when it first enters the soil environment during construction and prior to installation of the permanent CP system, particularly when other pipelines are already present. This could explain the few corrosion indications present on Line 401.) In any case, PG&E will be able to monitor the condition of the pipelines using normal practices including CP surveys and subsequent ILI runs, and if conditions appear to have changed, identify sites for remediation.

The ILI indicated minor imperfections identified as having originated with the manufacture of the pipe. The standards for the manufacture of pipe products¹⁸ allow minor imperfections which are not injurious. The fact that any such features passed both the mill pressure test and the commissioning hydrostatic test at pressure levels well above the operating pressure proves that they are not injurious at the operating pressure.

The ILI runs indicated no anomalies representing actionable conditions in either pipeline in the sections crossing the Ellis Development or within a couple of miles in either direction (the extent of the data reviewed). PG&E has experienced no leaks or failures and reported no safety-related

¹⁷ Corrosion is an electrochemical process, meaning it involves the flow of electrons and can therefore be controlled by voltage. External corrosion occurs on a pipeline where electrical current leaves the pipe surface through breaches in the external coating. Cathodic protection uses voltage to cause electrical current to flow onto the pipe where the pipe surface becomes exposed to the soil environment. Measurements of voltage gradients and current flow between the pipe and soil can be used to identify where corrosion is likely to be occurring. Such measurements are routinely used for assessing the external corrosion status of a buried pipeline.

¹⁸ API 5LX and API 5L.

conditions for the segment within the Ellis Development. PG&E reported that one investigative dig on Line 002 and two digs on Line 401 were performed in July 2007 and confirmed that no corrosion was occurring; no digs have been necessary in the segments of interest with either pipeline.

Conventional Gas Pipeline Risk-Informed Design Basis

Natural gas pipelines incorporate a risk-informed design basis that ties the pipe wall thickness and operating stress level (as a percentage of the specified minimum yield strength) to the density of development adjacent to the pipeline. This approach is embodied in the Location Class, which was introduced by ASME B31.8 and adopted by Federal pipeline safety standards. From the General Provisions of Part 840 “Design, Installation, and Testing” of ASME B31.8:

“The most significant factor contributing to the failure of a gas pipeline is damage to the line caused by the activities of people along the route of the line. Damage will generally occur during construction of other facilities associated with providing the services associated with human dwellings and commercial or industrial enterprises. These services, such as water, gas and electrical supply, sewage systems, drainage lines and ditches, buried power and communication cables, streets and roads, etc., become more prevalent and extensive, and the possibility of damage to the pipeline becomes greater with larger concentrations of buildings intended for human occupancy. Determining the Location Class provides a method of assessing the degree of exposure of the line to damage.

A pipeline designed, constructed, and operated in accordance with the requirements of Location Class 1 ... is basically safe for pressure containment in any location; however, additional measures are necessary to protect the integrity of the line in the presence of activities that might cause damage. One of the measures required by this Code is to lower the stress level in relation to increased public activity. This activity is quantified by determining Location Class and relating the design of the pipeline to the appropriate design factor.”

The description and limitations associated with various Location Classes are listed in Table 4. Location Classes are defined by the density of development adjacent to and near the pipeline. Pipeline segments adjacent to more densely developed areas are restricted to lower operating stresses due to internal pressure than segments of the same pipeline adjacent to less developed areas. For a continuous pipeline of a given diameter, the reduction in stress level corresponding to more densely developed locations is achieved by installing heavier wall (or higher strength) pipe.

Nationwide, 33,809 miles of natural gas transmission pipelines are designated as Class 3, representing 11.3% of the transmission pipeline mileage. In other words, there are already more

than enough miles of gas transmission pipelines adjacent to land uses just like the Ellis Development to circle the globe.¹⁹ In addition to that, there are 1,368 miles of natural gas transmission pipelines in Class 4 areas, which by definition are more heavily built-up and densely populated than the Ellis Development would be. PG&E operates 1,650 miles or 29% of its 5,727-mile system adjacent to or within Class 3 areas.²⁰ There are approximately 200 schools and a similar number of hospitals within 300 ft of their pipelines. From this, one concludes that the proposed Ellis Development adjacent to the pipelines is far from a unique situation. The overall experience with such installations is that the hazard to the public can be effectively and reliably managed through routine and accepted practices.

The area where the Ellis Development would be built is currently designated as Class 1 corresponding to rural land use. If built, the Ellis Development would likely represent a Class 3 area. When an area adjacent to an existing Class 1 or Class 2 pipeline becomes Class 3, the operating pressure of the pipe in the Class-change location must be revalidated for the new Class designation, typically by retesting the pipe to a higher margin above its operating stress or by replacing it with heavier-wall or stronger-grade pipe. Retesting or replacement involves shutting down the pipeline, and interrupting continuous service. Because of the need to plan such events, the regulations allow 18 months to fulfill these requirements.

The pipe does not need to be retested or replaced if the pipe has been previously tested to a sufficiently high margin, and the change in Class is only one Class increment. This would be the case for Line 002 because it already operates as a Class 2 line, it was tested to 1.5 times its current MAOP, and the change to Class 3 is only a one-class increment. Line 401 will not meet this description as it is operating as a Class 1 line. Alternatively, the operator may apply to PHMSA for a waiver from the requirement to retest or replace pipe in accordance with an established protocol which has been implemented elsewhere in the US. Under this scenario, PHMSA may allow a line segment to operate more than “one Class out” contingent upon the pipe meeting certain criteria for overall quality of construction and condition of the pipe, and the operator implementing certain risk-based pipeline integrity management processes designed to assure that overall risk levels are no greater than meeting conventional requirements via pipe replacement. Line 401 is almost certainly eligible for a Class change waiver on engineering considerations, but PG&E has indicated that a waiver for Ellis would not be requested so the Line 401 pipe traversing Ellis would be replaced.

¹⁹ The circumference of the Earth is approximately 24,900 miles (<http://geography.about.com>)

²⁰ Based on the definition of Class 3 locations, this implies that on the order of 75,000 homes (based on a minimum house-count threshold of 46 houses within the ¼-mile-wide x 1-mile-long reference area, corresponding to a very low housing density of one house per 3.5 acres) and likely several times that number are already located in close proximity to PG&E's transmission pipelines.

Natural Gas Pipeline Integrity Management

Natural gas pipelines located in designated High Consequence Areas (HCAs) must be subjected to formal Integrity Management Plans (IMP) under Part 192, Subpart O. The IMP process involves the following key components:

- Identification of HCAs;
- Determination of the length of pipeline segments affecting HCAs;
- Consideration of all attributes of a pipeline with respect to listed integrity threats;
- Performing risk assessment to identify risk-driving factors, prioritize HCA pipeline segments for condition assessment, select condition assessment methods, and weigh mitigation strategies;
- Assess the condition of the HCA pipeline segment with respect to the identified integrity threats;
- Respond to conditions identified by the condition assessment within specified time limits;
- Develop long-term mitigations to lower risk associated with identified integrity threats;
- Repeat assessments for time-dependent integrity threats at specified intervals;
- Apply findings from assessments in HCA's to segments of pipeline beyond the HCA's;
- Develop plans for management of change, measurement of program effectiveness, continuous improvement, and communication.

The integrity threats are identified with respect to 21 failure root causes cataloged by pipeline incident reports made to the DOT. The threats are categorized as time-dependent if they can worsen over time, time-stable if they do not worsen, or time-independent if they occur randomly. The categorization establishes the strategy employed to assess the condition of the pipeline in terms of whether the assessment must be repeated periodically at some interval, is required one-time only, or should be primarily prevention-based, respectively.

The above rules apply to any pipeline segment adjacent to or which could affect an HCA. Nationwide, 20,109 miles, amounting to 6.7% of natural gas transmission pipelines, could affect HCAs and are therefore subject to formal IMP requirements. PG&E operates 1,031 miles amounting to 18% of its natural gas transmission pipeline system that are subject to IMP requirements.

Two methods to identify HCA pipeline segments are defined in Federal pipeline safety regulations. Method 1 includes all Class 3 and Class 4 areas, as well as identified indoor or outdoor sites located within a Potential Impact Radius (PIR) in Class 1 or Class 2 areas that result in concentrations of people on a regular basis, or where it would be difficult to evacuate people owing to the nature of the property use (e.g., a hospital). Method 2 includes anywhere

that 20 or more buildings intended for human occupancy or identified sites occur within the PIR. Where the PIR exceeds 660 ft, the number of buildings is prorated to the area of a circle defined by the PIR. The pipeline operator may elect to apply either method; PG&E applies Method 2. The Ellis Development would likely become an HCA, and if so, Line 002 and Line 401 traversing the development would be subject to the enhanced requirements of IMP.

The Potential Impact Radius is determined from the formula, $R=0.69D(P)^{0.5}$, where R is the radius in feet, D is the pipe diameter in inches, and P is the pipeline operating pressure in psig. The PIRs for Lines 002 and 401 are 579 ft and 741 ft, respectively. The radius corresponds to an estimate for a specific intensity of heat in the event that the pipeline was to rupture and the released gas was to ignite.²¹ The PIR heat intensity, 5,000 Btu/hr-ft², corresponds to a 99% survival rate for persons exposed for 30 seconds without moving away from the source of heat, and to the lower limit for piloted ignition of wood affording protection indefinitely for persons located indoors.²² The purpose of the PIR is specifically to define the length of the pipeline segment that could affect an adjacent identified site in the unlikely event that a pipeline rupture was to occur, based on the line's proximity to it. This is clearly illustrated in Figure 7, which provides an explanatory interpretation of Figure E.I.A from 49 CFR 192. In this example, the identified site is a school and grounds, which lies partially within the PIR. One can see from Figure 7 that the overall dimensions of the site and its proximity to the pipeline both affect the length of HCA pipeline segment and its defined start and end points.

In addition to defining the pipeline segment warranting a higher standard of care in managing the integrity of a pipeline throughout its life cycle (via IMP), the PIR may be useful toward those same goals when contemplating land uses adjacent to the pipeline. Recommendations for reducing risk through appropriate consideration of land uses adjacent to pipelines have been developed by Pipelines and Informed Planning Alliance (PIPA),²³ an organization sponsored by PHMSA for representing the spectrum of stakeholder interests in pipelines and community planning. PIPA recommends defining a "consultation zone" surrounding existing pipelines as a mechanism for communication and sharing of critical information between land developers and pipeline operators. PIPA also recommends defining a "planning area" for implementing additional measures in the activities of both the pipeline operator and the land developer to lower risk. The PIR is suggested for defining the width of each of these regions.²⁴

²¹ Stephens, M.J., "A Model for Sizing High Consequence Areas Associated with Natural Gas Pipelines", GRI00/0189, Gas Research Institute, Oct. 2000.

²² Ibid.

²³ "Partnering to Further Enhance Pipeline Safety in Communities Through Risk-Informed Land Use Planning", Final Report of Recommended Practices, PIPA, November 2010.

²⁴ Ibid.

The PIR is not intended to define minimum setback distances inside of which development should be prohibited. In the words of the Transportation Research Board, using the PIR as a setback criterion only “considers the consequences of an event without accounting for its probability...and does not attempt to weigh the risk-reduction benefits of such a measure against the considerable cost that such a provision would entail.”²⁵

The concept of “risk” encompasses both the likelihood (probability) that an event will occur and the consequences. Risk is formally computed as a product of these two values. A scenario having high likelihood but low consequences may have a similar risk level as another scenario having low likelihood but large consequences. Thus any discussion of risk has to consider both aspects. Based on the foregoing discussions, it is evident that the presence of people living and working in the vicinity of natural gas pipelines is not only inevitable, but is a common every-day situation already.²⁶ Since it is a practical infeasibility to isolate the public from pipelines and vice-versa, risk must be managed primarily by reducing the probability of an event occurring. IMP is a structured process for achieving that goal.

Integrity Threats Affecting PG&E Line 002 and Line 401

The integrity threats which pipeline operators must consider in their assessment of risks and hazards are listed in Table 5. The actual attributes of a pipeline, encompassing all aspects of manufacturing of the pipe, design parameters, construction and inspection standards, integrity test history, operation and maintenance, and the environment the pipeline operates in, determine which threats a given segment of pipeline may be susceptible to. Many threats are eliminated by an absence of the factors which could give rise to a threat. (For example, modern pipe made with a double-submerged arc-welded (DSAW) seam is not susceptible to certain conditions known to affect some varieties of older-vintage pipe manufactured using now-obsolete techniques associated with electric-resistance-welded (ERW) seams.) Since the pipe has been successfully pressure tested to a specified margin, the integrity threat of pipe manufacturing defects is considered to be adequately mitigated in gas pipelines.²⁷

Most pipelines buried in soil are considered to be susceptible to the threats of external corrosion and mechanical damage from excavator hits. In fact, these two categories account for around 28% and 20% of significant gas transmission pipeline incidents, respectively. These same

²⁵ “Transmission Pipelines and Land Use”, Special Report 281, Transportation Research Board of the National Academies, 2004.

²⁶ “Building Safe Communities: Pipeline Risk and its Application to Local Development Decisions”, US Department of Transportation, Pipeline and Hazardous Materials Safety Administration, October, 2010.

²⁷ Kiefner, J.F., “Evaluating the Stability of Manufacturing and Construction Defects in Natural Gas Pipelines”, Contract DTFAAC05P02120, US DOT, Office of Pipeline Safety, April 26, 2007.

categories account for 30% and 23% of significant hazardous liquid transmission pipeline incidents, respectively.²⁸

The external corrosion threat is mitigated by several measures, including:

- External coatings on all steel pipe,
- Installation of a cathodic protection (CP) system,
- Routine inspections of the functioning of the CP system,
- Periodic electrical surveys along the right-of-way to detect areas where electrical potentials or flow of currents suggest corrosion could be occurring, and
- Periodic in-line inspection in order to identify, locate, and size areas of metal loss occurring on the pipe which are then evaluated against acceptance criteria.

While some corrosion has occurred on both pipelines as discussed earlier, this is not necessarily unusual, and having performed ILI, PG&E is in a good position to monitor and evaluate the condition of the lines.

While ILI is capable of finding latent damage on a pipeline, approximately 90% of damage-related pipeline failures occur at the time that a pipeline has been struck, and running ILI provides no protection against a random event occurring afterward. That is why the mechanical damage threat is mitigated by several measures aimed at prevention.^{29,30} Federal regulations and industry standards require pipeline operators to perform the following actions to mitigate the threat of damage, including:

- Conduct surveillance of the line to become alert to activities along the right of way that could suggest excavation has recently or is about to occur;
- Implement public education programs to notify owners of property crossed by or adjacent to their pipelines about the presence of the lines, appropriate procedures before digging, and emergency contact information;
- Respond in a timely manner to direct calls from landowners, contractors, and other utilities to mark line locations in areas where excavations may take place;
- Participate in a “one-call” system that enables anyone to make a toll-free call to a clearing center to get all underground utilities marked prior to digging.

²⁸ DOT, “Building Safe Communities” report.

²⁹ “Public Awareness Programs for Pipeline Operators”, Recommended Practice 1162, API, 2003.

³⁰ “Excavation Awareness and Monitoring”, Recommended Practice 1166, API, 2005.

Over the past several years, most states have made it mandatory for any contractor or landowner to use a state-wide “one-call” system before digging.^{31,32} Where one-call systems have been implemented and vigorously enforced, incidents of pipeline accidents due to excavators hitting lines have been reduced. California has one-call systems in place for northern and southern portions of the State. This study did not review the damage prevention programs implemented by PG&E but PG&E is a participant in the Common Ground Alliance³³ which is a nation-wide association dedicated to promoting best practices to avoid excavation damage to pipelines.

No other significant risk factors from Table 5 (aside from external corrosion and excavator damage) appear to be applicable to Line 401 within the section crossing the Ellis Development, due to an absence of attributes which would give rise to specific integrity threats. The same can be said for Line 002 with the exception of a potential threat associated with stress-corrosion cracking (SCC), as a result of characteristics of the tape coating. This threat would only arise if the coating disbonds from the pipe while remaining intact and allowing moisture to accumulate underneath it. Double-wrapping of the tape as used on Line 002 should enhance the coating’s durability. Moreover, PG&E does examine for the presence of SCC when performing other routine examinations of this line and has had no observation of the condition.

Liquid Transportation Pipeline Integrity

The Chevron crude oil pipeline was reported to have had a major release, on March 11, 1995 near Huron, CA, about 135 miles from Tracy, CA. The release was caused by 100-year flooding conditions severe enough to wash out an overpass on highway I-5 about 1 mile upstream from the site of the pipeline failure. Accumulated debris from the washout may have caused the pipeline to fail at a girth weld.³⁴ The incident report filed with PHMSA³⁵ described the affected pipe as having been installed in 1969 which indicates that it was not part of the original construction. The pipelines cross the Corral Hollow Creek approximately 2 miles southeast of the southeast corner of Ellis. Small 100-year floodplain zones have been defined near where the pipelines intersect the creek and extending to the east.³⁶ These zones do not encompass Ellis and would not be expected to affect the portions of the lines within Ellis. Another reportable incident

³¹ The “one-call” system provides a toll-free 8-1-1 call center that arranges for the marking of all buried utilities and services in the designated area within a specified response time.

³² www.call811.com

³³ www.commongroundalliance.com

³⁴ California Office of the State Fire Marshal, C. MacDonald, Memorandum to N. Wolfe and C. Samo, March 13, 1995.

³⁵ Reportable Incident No. 19950064, www.phmsa.dot.gov.

³⁶ www.sjmap.org

may have been associated with the KLM pipeline due to excavator damage in Fresno County in 1988.³⁷

Liquid transportation pipelines are required to implement prescriptive integrity management plans for segments that could affect HCAs, in accordance with 49 CFR 195.452. Nationwide, there are 77,865 miles of liquid transmission pipelines designated as HCA segments. Chevron operates 603 miles of crude oil pipeline in California, 206 miles of which are HCA and therefore subject to the requirements of IMP. Ellis would probably become an HCA with respect to the Chevron line.

The IMP process for liquid pipelines is conceptually similar to that for natural gas pipelines, with some differences due to the nature of the transported product and its effects in the event of a release. HCAs for liquid pipelines are defined based on whether a spill could cause pollution of water sources or environmentally sensitive areas, as well as the proximity to populated areas, and therefore differ from those for natural gas pipelines. Most of the pipeline integrity threats operative for natural gas pipelines are present with liquids pipelines, but the concept of “stable defects” used with natural gas pipelines is not applicable to liquid pipelines due to their operational characteristics.

The Chevron line will be susceptible to external corrosion and encroachment damage the same as with the gas pipelines or any other buried steel pipe. In order to mitigate the external corrosion risk, the pipeline is externally coated with Somastic (a durable coating consisting of sand aggregate in an asphaltic binder) and is required by Federal regulations under Part 195 to be cathodically protected. The line’s integrity must be assessed every 7 years in HCAs in accordance with IMP requirements in Part 195. While Chevron did not discuss details, ILI is almost certainly performed to satisfy this requirement, which is a standard approach for liquid pipelines. Chevron also must have a damage prevention program.

The Chevron pipeline reportedly consists of line pipe manufactured using electric-resistance welded (ERW) seams. Nationwide, there are 8,012 miles of ERW pipe of the vintage of the KLM line. ERW seams of this vintage are generally reliable but are known to have susceptibility to unique degradation mechanisms. Federal regulations specifically require that integrity threats of this nature be addressed in the integrity assessment process of the IMP. While Chevron has not shared the details of their plans, such plans are necessary to comply with regulations. No failures associated with seam-related conditions have been reported in this

³⁷ Reportable Incident No. 19880026, www.phmsa.dot.gov.

pipeline, which is consistent with either a low inherent susceptibility to this problem, or with any problem having been eliminated in the past.

Collocation of Pipelines in a Common Corridor

The two natural gas pipelines and one crude oil pipeline are collocated in a common corridor or right-of-way (ROW). This is not only fairly common, but it is frequently encouraged by siting authorities for new pipeline construction projects because it minimizes environmental damage and disturbance of property use associated with pipeline construction and future pipeline maintenance activities. There are both benefits and drawbacks to collocation from the standpoint of risk.

The presence of the common corridor promotes planning for adjacent development in a manner that can reduce the likelihood of encroachment, such as placement in a green space. The Ellis plan places the corridor in a combination green space and boulevard arrangement, as shown in Figure 8. This approach is in keeping with the recommendations of PIPA.³⁸ Locating the pipelines in a common corridor minimizes the number of individual properties crossed by the aggregate lengths of installed pipelines. Since individual land parcels (usually under the separate control of individual owners) each represent independent potential encroachment risks, the common corridor minimizes the likelihood of damage to the pipelines caused by uncontrolled excavation activity. Locating the corridor in a public space further reduces the risk by moving excavation activity associated with individual lots away from the pipelines. It also reduces risk by increasing the visibility of the pipeline corridor. As a result any unauthorized activity, pipeline leak, or other abnormal condition (for example, exposure of the pipe due to erosion) is more readily observed either by the pipeline operator's routine surveillance or by an alert public than if the pipelines are located behind privacy fences or hedges, or where residents may not be home to observe and report a problem. The operator is thus better able to respond promptly.

It is possible for the cathodic protection systems of one pipeline to interfere with the cathodic protection system of an adjacent pipeline, reducing its effectiveness. This risk is mitigated in two ways. Parts 192 and 195 each provide for required periodic checks of the functioning of CP systems. Also, any metal loss or corrosion activity that could be caused by interference of CP systems is detectable by standard in-line inspection or above-ground electrical surveys conducted periodically to meet integrity assessment requirements. Thus the potential threat is easily mitigated in the course of standard procedures practiced by both PG&E and Chevron. There is no evidence that such interference has occurred in the gas pipelines, based on the results of the ILI of those lines.

³⁸ PIPA, "Risk Informed Land Use" report.

Excavation of a pipeline by the pipeline operator or his contractor for purposes of maintenance and inspection always carries some risk of damaging the pipeline. Consequently, a pipeline collocated with another is exposed to a slight risk of being hit during excavation of the adjacent pipeline. This is usually only a concern where pipelines are very close together. The spacing between these pipelines is sufficient to avoid this problem. Industry practices have been developed to help avoid the problem.³⁹

Concerns are sometimes expressed that a failure of one pipeline could cause an adjacent pipeline to fail thereby compounding the severity of the event. Tens of thousands of miles of pipelines are collocated in a common corridor, but compound-failure incidents are extremely rare. A notable incident occurred in Manitoba, Canada in 1995⁴⁰ where a failure in one pipeline precipitated a failure in a second line.⁴¹ This incident may be unique in terms of the compound nature of the event.

Studies have determined that spacing pipelines 25 ft apart provides adequate protection against the effects of an adjacent pipeline rupture, which is generally supported by experience, the Manitoba incident notwithstanding.⁴² A review of crater dimensions from incident reports, including the one created in the San Bruno incident, suggest that exposure of either gas pipeline due to a rupture of the other gas pipeline is unlikely. The pipeline in Manitoba that failed first produced 68% greater heat flux intensity than the larger PG&E gas line (Line 401) would produce, while the adjacent line that failed operated at 28% higher relative stress level than the adjacent Line 002. PG&E reported that the valve spacing is commensurate with the expected change in Location Class⁴³, which is much closer than was the case in the Manitoba incident, so gas would not discharge for as long a period of time. The size of the initial failed pipe, the operating stress level of the affected pipe, and the valve spacing are significantly different in the Manitoba incident compared with the PG&E pipelines at the Ellis site, and therefore are not indicative of a similar risk there. It is noted that the Chevron line does lie close to one of the PG&E lines, and could be exposed by a rupture of that line. The steady flow of ground-

³⁹ API RP 1166.

⁴⁰ National Energy Board of Canada, Pipeline Incident Report P95H0036, www.bst-tsb.gc.ca.

⁴¹ Four parallel gas pipelines were located within a 220-ft wide corridor about 1/8 mile downstream from a compressor station. A 42-inch OD pipeline with an MAOP of 1,100 psig failed due to SCC. A 36-inch OD line with an MAOP of 880 psig failed 54 minutes later due to the effects of exposure to heat from the rupture adjacent to it. Both pipelines operated at hoop stress levels of 77% of SMYS in accordance with Canadian standards for the location. Due to an inability to isolate the nearby compressor station discharge by manual or remote command, the nearest line isolation points were 68 miles upstream and downstream. A fifth pipeline that crossed only 6 inches underneath the other four lines at that same location was exposed by the ruptures but was not significantly damaged. The two failed pipelines were parallel and spaced 22 ft apart. The other adjacent parallel pipelines were unaffected.

⁴² Leis, B.N., Pimputkar, S., Ghadiali, N. and Grassi, M., "Line Rupture and the Spacing of Parallel Lines", Project PR3-9604, Pipeline Research Council, Inc., June 1999.

⁴³ Mainline block valves currently cannot exceed 20 miles separation in Class 1, 15 miles in Class 2, and 8 miles in Class 3.

temperature crude oil inside the pipe would help to minimize thermal effects on the crude oil pipeline.

Building Setback

“Setback” refers to the distance from a pipeline within which the construction of permanent structures (e.g., houses) is prohibited. A review of Federal pipeline safety regulations, including the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, and industry codes and standards determined that they establish no minimum setback requirements. Setback distances vary with property uses and specific provisions of the easement agreements, and have ranged from a few feet in congested areas to considerably larger.

Pipeline operators prefer a setback of at least 25 ft, or more if possible, in order to facilitate access to the pipeline either during its installation or later in service. If an operator must examine and repair a pipeline, it will be necessary to haul in an excavator and a bulldozer, scrape off and set aside topsoil for site restoration afterward, and dig a trench or pit (called a “bellhole”) as deep as the bottom of the pipeline and as wide as the pipeline plus an excavator bucket width on each side. The excavation must have sufficient cutback of the sides to assure stable trench walls and meet trench work safety requirements, resulting in a wider excavation at the ground surface. The setback of 25 ft is a practical minimum for safe and efficient activity without encroaching on a landowner’s primary property use. While narrower setbacks are often unavoidable in built-up areas, they result in slower and more complicated operations and could interfere with the landowner’s property usage. Whenever possible, a pipeline operator would prefer a larger setback than 25 ft primarily as a matter of convenience. Larger setbacks make it easier to set aside topsoil, stage and move materials and equipment, excavate safely, and negotiate around other buried utilities or difficult terrain features.

There is little that a land developer can do to positively affect either the likelihood or consequence components of risk associated with the integrity threat of corrosion, or in fact most of the other integrity threats discussed above that a pipeline might be susceptible to, with one important exception. The one integrity threat that a developer can positively influence is that associated with mechanical damage to the pipeline. This is especially true during the land development phases including but not limited to any of the following activities:

- site grading and contouring;
- operation of heavy equipment;
- installation of buried services;
- excavation of foundations;

- construction of roads;
- hauling and delivery of materials; and
- final site preparation.

All of the above activities are potential opportunities for damage to be incurred to a pipeline if the activities take place over the pipe. Increased setback distances minimize the amount of any of the above activities that need to occur within the right of way or directly over the pipeline. They also minimize that chance that unplanned or unsupervised excavating or contouring activities occur inadvertently over the line.⁴⁴ The increased setbacks also reduce the likelihood that similar activities being conducted by landowners on their own initiative at some time in the future would occur directly over the pipe. Thus increased setbacks beyond 25 ft can be expected to lower risk to anybody involved in the Ellis Development, either as a site worker or later as a resident.

Other Risk Mitigation Measures

The PIPA report on risk-informed land use provides a checklist of measures that can reduce or mitigate risk and which should be considered by local governments, land developers, pipeline operators, and real estate commissions. Notable actions that already appear to have been considered in the plans for Ellis include:

- ND06, consider transmission pipeline facilities in land development design;
- ND08, collaborate on alternate use and development of transmission pipeline ROW;
- ND12, reduce transmission pipeline risk through design and location of new roads; and
- ND17, reduce transmission pipeline risk in new development for residential, mixed-use, and commercial land use.

(“ND” refers to “new development”. Some other measures are listed as “BL” for “baseline”, applicable to existing developments.⁴⁵) Additional measures to consider (as appropriate and if not already so done) include:

- ND04, coordinate property development design and construction with transmission pipeline operator;

⁴⁴ Pipeline accidents are known to have occurred when workers decided to perform dozing, grading, and other work after hours, without supervision of the excavating activities or without relying on line locating and marking protocols.

⁴⁵ PIPA report.

- ND13, reduce transmission pipeline risk through design and location of new utilities and related infrastructure;
- ND14, reduce transmission pipeline risk through design and location of aboveground water management infrastructure;
- ND15, plan and locate vegetation to prevent interference with transmission pipeline activities;
- ND16, locate and design water supply and sanitary systems to prevent contamination and excavation damage;
- ND22, reduce transmission pipeline risk through design and location of new places of mass public assembly;
- ND23, consider site emergency response plans in land use development;
- ND24, install temporary markers on edge of transmission pipeline right-of-way prior to construction adjacent to right-of-way; and
- ND25, contact transmission pipeline operator prior to excavating or blasting.

Perspective on Risk

Pipeline incidents are infrequent, although they can and do occur. Pipeline operators are required to report all incidents involving a release of natural gas or hazardous liquid and: injury, fatality, fire or explosion, property damage in excess of \$50,000 (in 1984 dollars, including value of product lost), spill of high-vapor-pressure liquid in excess of 5 barrels, spill of other liquids in excess of 50 barrels, or other event that an operator considers significant. While “reportable” pipeline incidents do occur, the majority involve no casualties. Most casualties involve someone actually doing work on or around a pipeline, although this generalization was not the case with the San Bruno incident. The reportable transmission pipeline incidents for the past several years are listed in Table 6. The listing includes incidents which occurred on the grounds of compressor stations, pump stations, terminals, and tank farms which are fenced properties under the control of the pipeline operator and which would not affect the general public. Not all of the incidents shown occurred on the right-of-way. This record is remarkably good considering the function transmission pipelines perform and their extent throughout the US.

While the foregoing discussion suggests that the risk posed by the pipelines to people in the Ellis Development is low, it is worth comparing those risks to other risks which may be present and

which could affect people in Tracy. Railways are prevalent throughout the US and California. Approximately 140,000 miles of railways carry general freight in the US, including hazardous materials (HAZMATs).⁴⁶ Table 7 lists the number of accidents involving HAZMAT trains, releases, and the number of people who had to be evacuated. Table 7 also lists the number of incidents and consequences of accidents at highway-rail crossings. Pipelines exhibit a favorable record compared to rail and shipment of hazardous materials. The DOT “Building Safe Communities” report draws similar conclusions regarding the safety of pipelines relative to other methods of transporting hazardous materials.

It is also noted that highways are located near the Ellis Development, and it is highly likely that most residents of the development would drive or ride in automobiles on the roads and highways nearby. Table 7 shows the casualties from highway accidents with large commercial trucks (excluding single-car or car-only accidents). It is apparent that residents of the proposed Ellis Development are exposed to a significantly greater hazard posed by commercial trucks than that posed by the natural gas pipelines.

Finally it is noted that all residents of the proposed Ellis Development are exposed to societal risks that arise from diverse causes including automobile accidents, food poisoning, recreational activity accidents, bee stings, drowning in the bathtub, falls, burns, and numerous others. These risks are often ignored, or regarded as an unavoidable part of modern living. The numbers of fatalities associated with all such causes are listed in the Appendix in Table A-1. About 10% of the population of the US lives or works in the vicinity of gas transmission pipelines based on the definition of pipeline location class, average household sizes, and reported pipeline mileage. Even accounting for the difference in aggregate exposure, it is apparent that many everyday risks are substantially greater than those associated with pipelines.

⁴⁶ www.aar.org

Table 1. Miles of Onshore Pipelines in California and the US

Type of Pipeline	California	US
Hazardous Liquids ⁽¹⁾	6,523	160,868
Natural Gas Transmission ⁽²⁾	12,006	312,952
Natural Gas Distribution ⁽³⁾	102,659	2,095,690

1) Includes crude oil, refined petroleum products, and other liquids

2) Includes natural gas gathering pipelines

3) Includes both mains and service lines

Table 2. California Transmission Pipeline Mileage by County

County	Natural Gas Miles	Liquid Miles
Alameda	171	126
Amador	21	0
Butte	131	29
Calaveras	18	0
Colusa	207	0
Contra Costa	376	469
El Dorado	4	0
Fresno	596	305
Glenn	150	0
Humboldt	97	0
Imperial	204	121
Kern	1286	1276
Kings	247	84
Lassen	101	0
Los Angeles	779	1797
Madera	118	29
Marin	41	0
Mendocino	50	0
Merced	160	143
Modoc	167	0
Monterey	235	2
Napa	50	0
Nevada	17	25
Offshore	19	107
Orange	187	180
Placer	73	99
Riverside	861	104
Sacramento	244	48
San Benito	184	0
San Bernardino	1840	473

County	Natural Gas Miles	Liquid Miles
San Diego	301	78
San Francisco	19	0
San Joaquin	294	120
San Luis Obispo	229	178
San Mateo	104	8
Santa Barbara	212	154
Santa Clara	181	14
Santa Cruz	55	0
Shasta	187	0
Sierra	0	12
Siskiyou	41	0
Solano	321	117
Sonoma	126	0
Stanislaus	199	115
Sutter	154	11
Tehama	182	0
Trinity	36	0
Tulare	151	54
Ventura	297	179
Yolo	213	44
Yuba	63	22
Totals	12,006	6,523

Table 3. Description of Active Lines Crossing Ellis

Attribute	PG&E Line 002	PG&E Line 401	Chevron KLM
Diameter, in.	26	36	18
Wall thickness, in.	0.322	0.372	0.250
Pipe grade	API 5L X70	API 5L X60	(1)
Year of installation	1972	1993	1945
Specified minimum yield strength, ksi	70.0	60.0	(1)
Maximum allowable operating pressure, psig	1,040	890	(1)
Hydrostatic test pressure, psig	1,560	1,480	(1)
Test Level, % SMYS	90.0	99.6	(1)
Length, miles	118	429	(1)
Depth of burial, ft	4-5	4-5	(1)
Coating type	Double wrapped polyethylene tape	Fusion bonded epoxy	Somastic
In line inspection	2006	2005	(1)
Governing regulation	49 CFR 192	49 CFR 192	49 CFR 195

(1) Information not provided by Chevron Oil

Table 4. Location Class Description and Design Limits

Class	Description	Criterion ⁽¹⁾	Stress, % of SMYS	Min. Ratio, Test to Operating Pressure
1	Rural, unpopulated	< 11 bldgs	72% max	1.10
2	Outskirts of populated area	11-45 bldgs	60% max	1.25
3	Developed suburbs and commercial areas	46+ bldgs	50% max	1.50
4	Urban, heavy traffic, tall buildings	Bldgs > 3 stories tall	40% max	1.50

(1) Number of buildings intended for human occupancy (e.g. a dwelling or workplace) within a reference area ¼ mile wide centered on the pipeline and 1 mile long.

Table 5. Pipeline Integrity Threats

Root Cause	Integrity Threat	Category	Assessment
Internal corrosion	Internal corrosion	Time dependent	Periodic, repeated at intervals (e.g. ILI)
External corrosion	External corrosion		
Stress corrosion cracking	Stress corrosion cracking		
Pipe seam defect	Manufacturing defects	Time stable	One time only (e.g., hydrostatic pressure test), unless conditions change
Pipe body defect			
Girth weld defect	Defective construction or fabrication		
Fabrication weld defect			
Wrinkle bend			
Broken thread or coupling	Equipment		
Gasket or O-ring failure			
Pressure control equipment			
Seal or packing failure			
Miscellaneous equipment			
Immediate damage to pipe	Mechanical damage	Time independent (random)	Surveillance and prevention
Previously damaged pipe			
Vandalism			
Incorrect operation	Incorrect operation		
Cold weather	Natural events		
Lightning			
Flooding or heavy rain			
Soil movement			

Table 6. Reportable Gas and Liquid Transmission Pipeline Incidents

Year	Natural Gas Pipelines ^(a)			Hazardous Liquid Pipelines ^(a)		
	Incidents	Fatalities	Injuries	Incidents	Fatalities	Injuries
1997	33	1	5	153	0	5
1998	51	1	11	131	2	6
1999	38	2	8	142	4	20
2000	54	15	16	128	1	4
2001	50	2	5	107	0	10
2002	56	1	4	130	1	0
2003	70	1	8	123	0	5
2004	62	0	2	125	5	16
2005	111	0	5	121	2	2
2006	78	3	3	103	0	2
2007	75	2	7	106	4	10
2008	73	0	5	118	2	2
2009	73	0	11	103	4	4
2010	77	10	61	118	1	4
2011	79	0	1	135	1	2

Notes: (a) www.phmsa.dot.gov

Table 7. Rail and Commercial Truck Incidents

Year	HAZMAT Railroads ^(a)			Highway-Rail Crossings ^(a)			Commercial Trucks ^(b)	
	Incidents	Releases	Evacuations	Incidents	Fatalities	Injuries	Fatalities	Injuries
1997	31	38	8,812	3,865	461	1,540	5,398	131,000
1998	42	66	2,058	3,508	431	1,303	5,395	127,000
1999	41	75	996	3,489	402	1,396	5,380	142,000
2000	35	75	5,258	3,502	425	1,219	5,282	140,000
2001	32	57	52,620	3,237	421	1,157	5,111	131,000
2002	31	56	5,438	3,077	357	999	4,939	130,000
2003	30	41	2,260	2,977	334	1,033	5,036	122,000
2004	31	49	5,938	3,075	371	1,089	5,235	116,000
2005	39	52	7,636	3,066	359	1,055	5,240	114,000-
2006	30	71	3,682	2,942	369	1,072	5,027	106,000
2007	46	76	11,698	2,778	339	1,063	4,822	101,000
2008	22	38	4,374	2,429	290	992	4,245	90,000
2009	22	44	3,160	1,931	249	742	3,380	74,000
2010	--	--	--	2,017	257	853	--	--
2011	--	--	--	1,963	265	980	--	--

Notes: (a) www.fra.dot.gov; (b) www.fmcsa.dot.gov

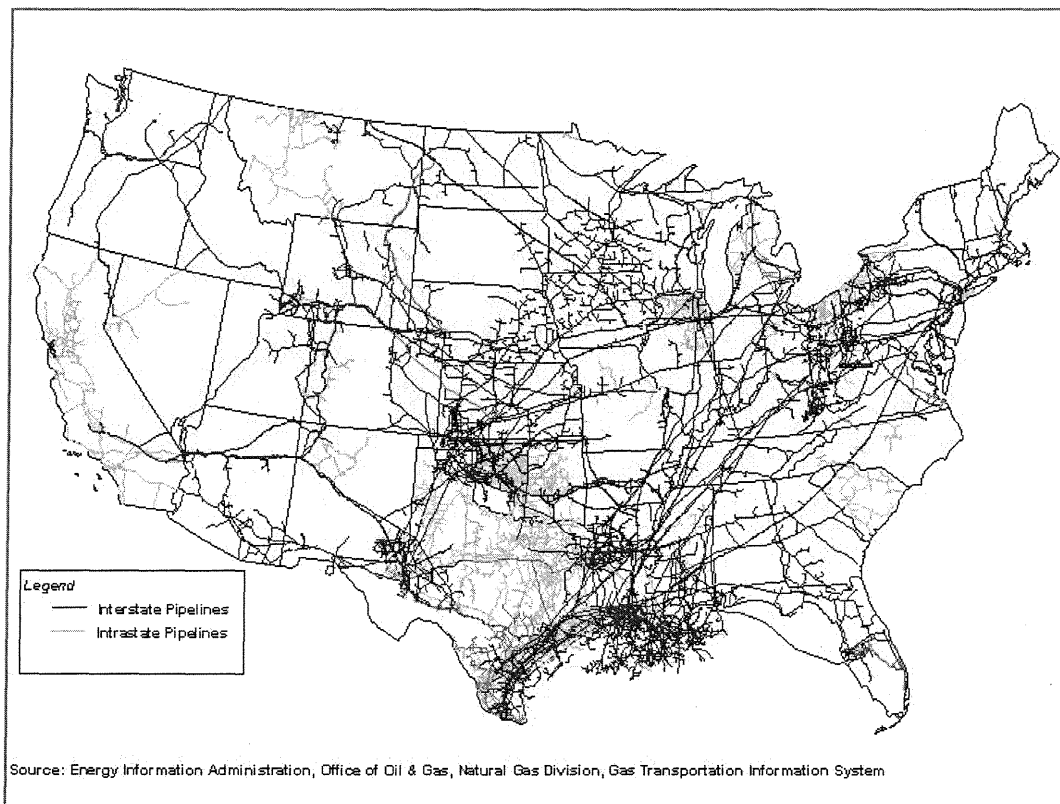


Figure 1. Location and Routes of Major US Natural Gas Pipelines

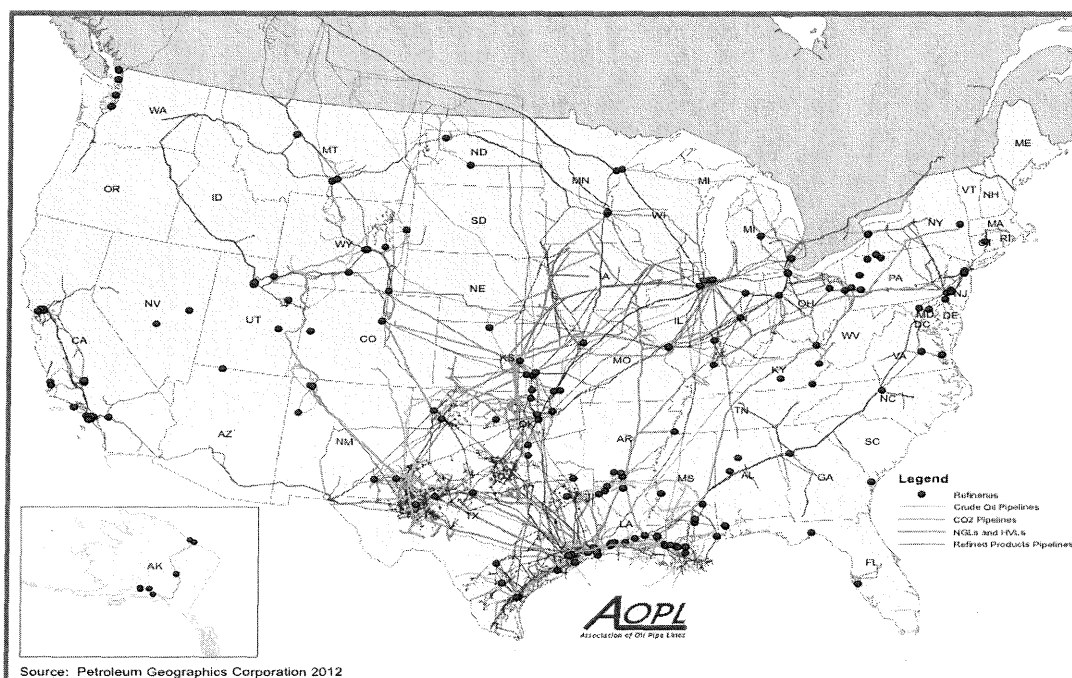


Figure 2. Location and Routes of Major US Hazardous Liquid Pipelines

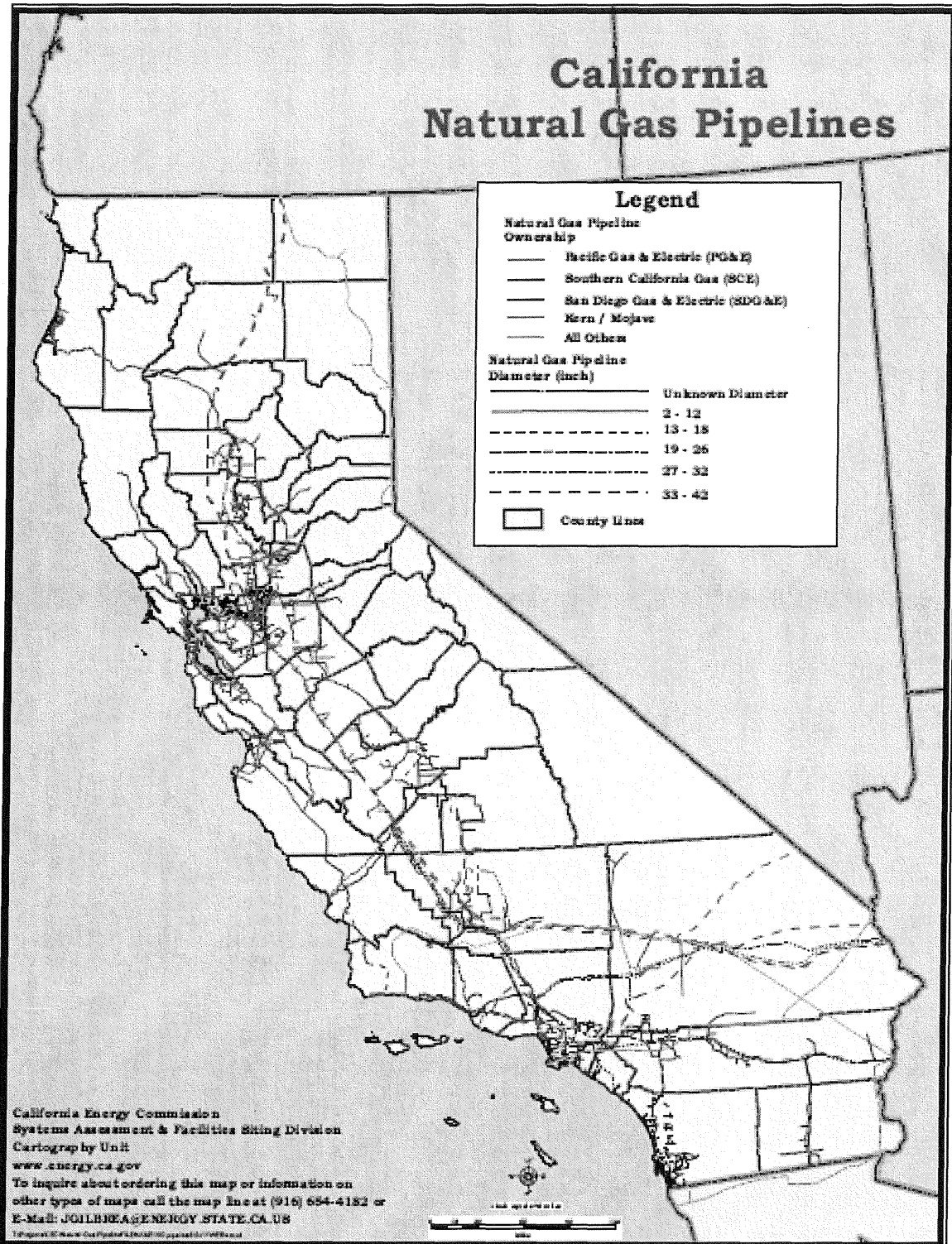


Figure 3. Major Gas Pipelines in the State of California

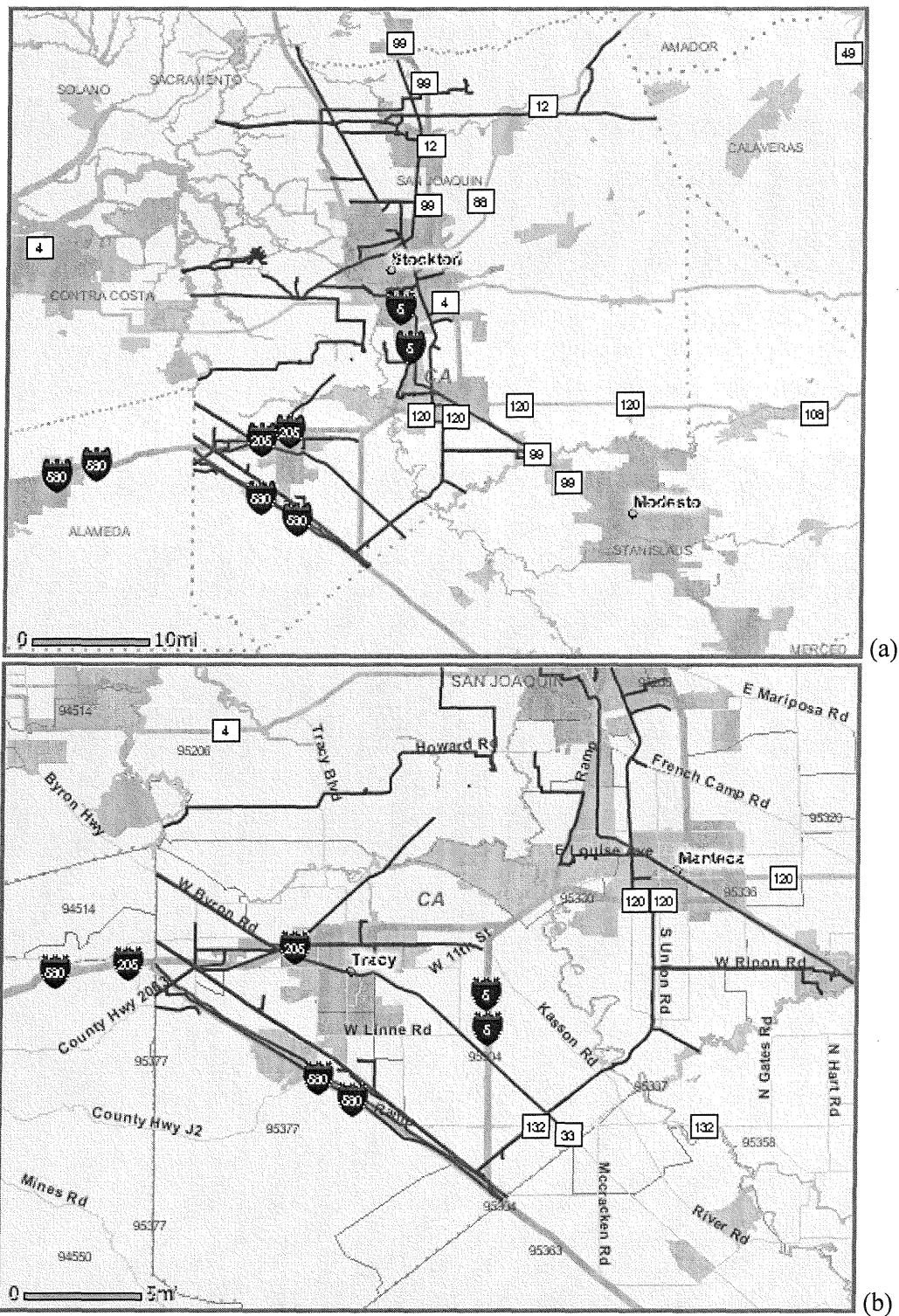


Figure 4. Transmission Pipelines in (a) San Joaquin County and (b) Town of Tracy, CA

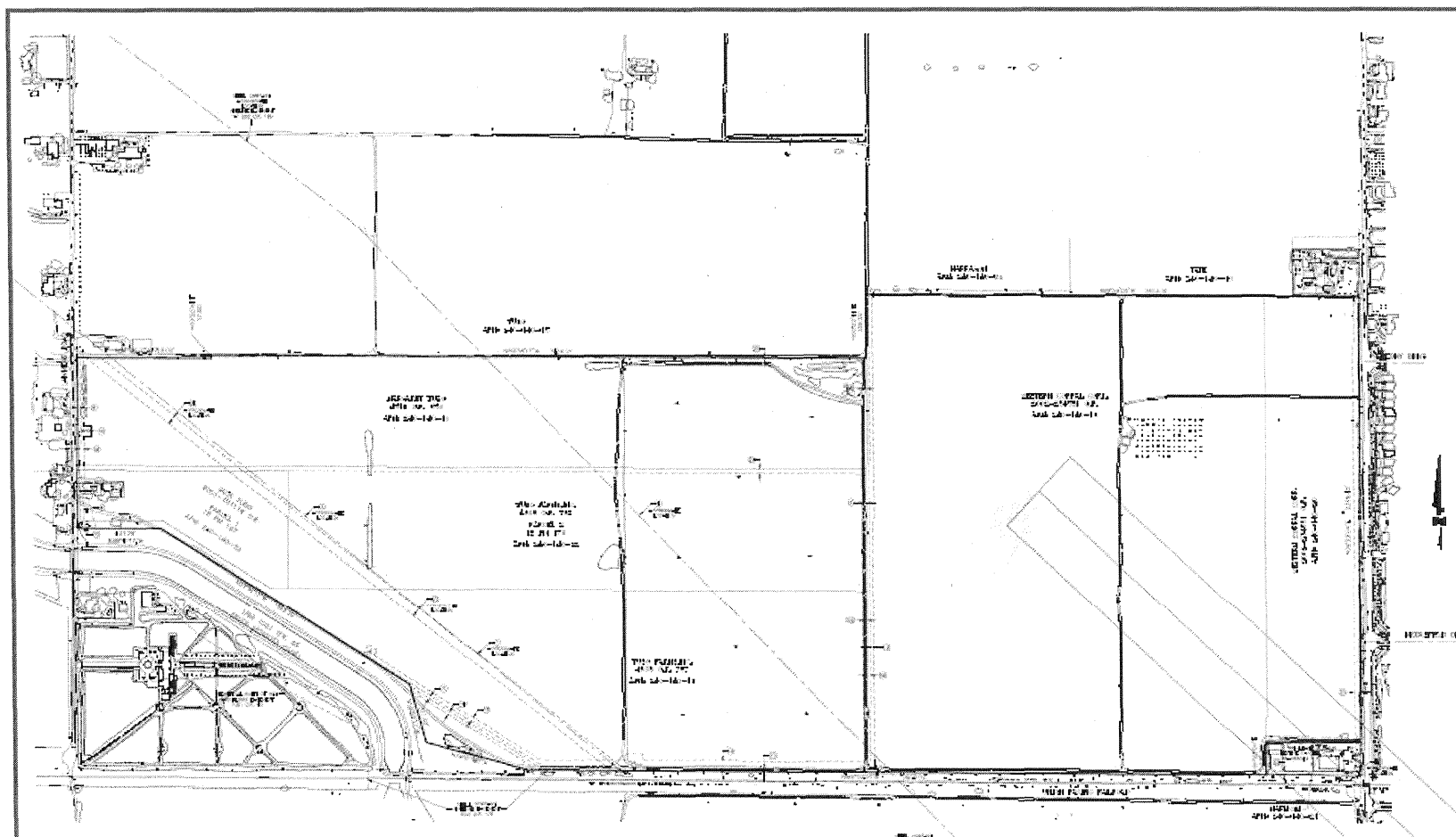


Figure 6. Detail of Development Land

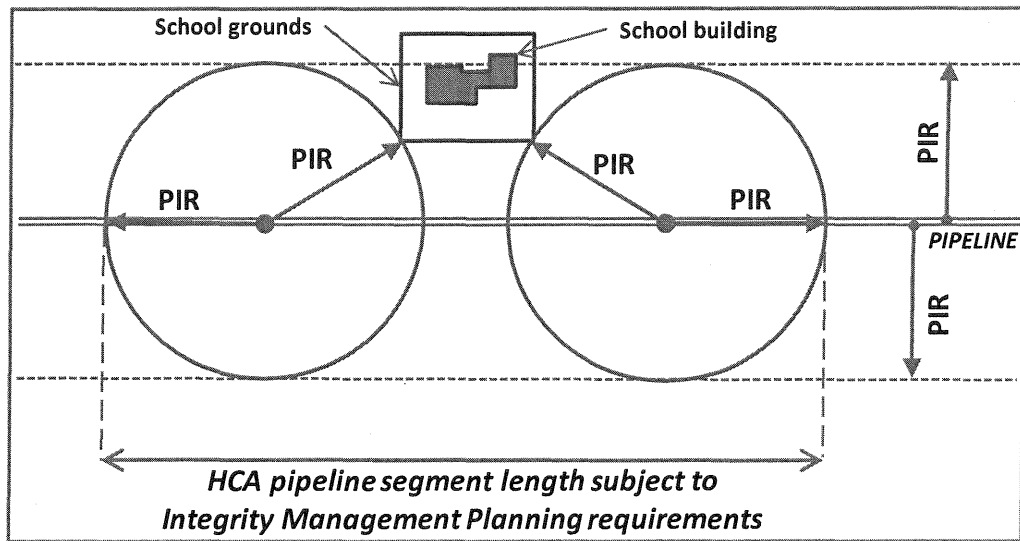


Figure 7. Determining the HCA Pipeline Segment

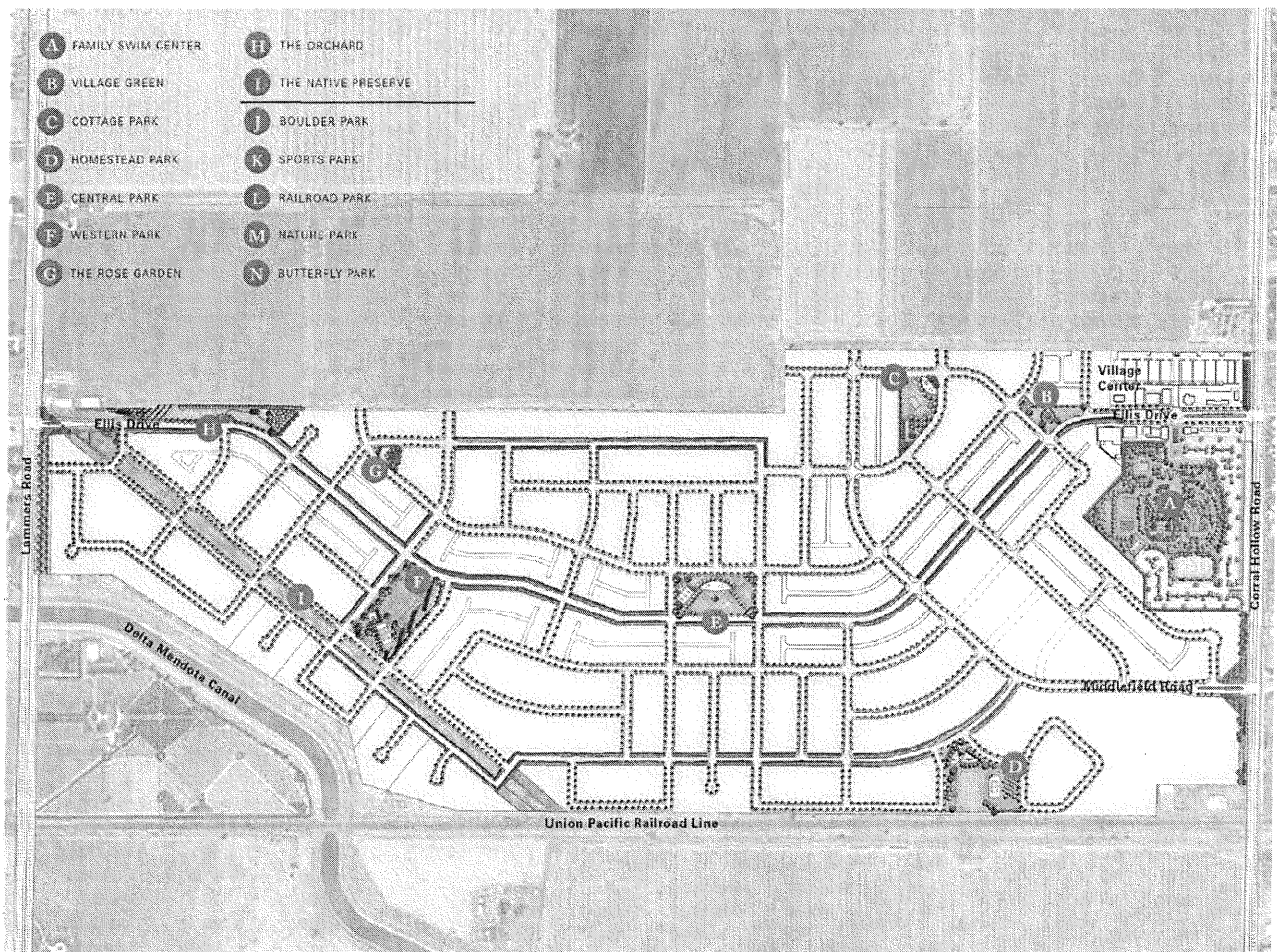


Figure 8. Pipeline Corridor in Planned Boulevard Green Space

APPENDIX – OTHER SOCIETAL RISKS

Table A-1. External Causes of Unintended Mortality in the US

Type of Accident or Manner of Injury, 2005	Number
All External Causes of Mortality	176,406
Deaths Due to Unintentional (Accidental) Injuries	117,809
Transport Accidents	48,441
Motor-vehicle accidents	45,343
Pedestrian	6,074
Pedalcyclist	927
Motorcycle rider	4,387
Occupant of three-wheeled motor vehicle	5
Car occupant	14,584
Occupant of pick-up truck or van	3,797
Occupant of heavy transport vehicle	450
Bus occupant	59
Animal rider or occupant of animal-drawn vehicle	120
Occupant of railway train or railway vehicle	33
Occupant of streetcar	0
Other and unspecified land transport accidents	16,148
Occupant of special industrial vehicle	19
Occupant of special agricultural vehicle	154
Occupant of special construction vehicle	33
Occupant of all-terrain or other off-road motor vehicle	1,040
Other and unspecified person	14,902
Water transport accidents	523
Drowning	394
Other and unspecified injuries	129
Air and space transport accidents	590
Other and unspecified transport accidents and sequelae	744
Other specified transport accidents	2
Unspecified transport accident	18
Nontransport Unintentional (Accidental) Injuries	69,368
Falls	19,656
Fall on same level from slipping, tripping, and stumbling	698
Other fall on same level	5,224
Fall involving bed, chair, other furniture	899

<i>Fall on and from stairs and steps</i>	1,690
<i>Fall on and from ladder or scaffolding</i>	477
<i>Fall from out of or through building or structure</i>	533
<i>Other fall from one level to another</i>	694
<i>Other and unspecified fall</i>	9,441
Exposure to inanimate mechanical forces	2,845
<i>Struck by or striking against object</i>	854
<i>Caught between objects</i>	103
<i>Contact with machinery</i>	755
<i>Contact with sharp objects</i>	85
<i>Firearms discharge</i>	789
<i>Explosion and rupture of pressurized devices</i>	26
<i>Fireworks discharge</i>	4
<i>Explosion of other materials</i>	147
<i>Foreign body entering through skin or natural orifice</i>	37
<i>Other and unspecified inanimate mechanical forces</i>	45
Exposure to animate mechanical forces	161
<i>Struck by or against another person</i>	26
<i>Bitten or struck by dog</i>	33
<i>Bitten or struck by other mammals</i>	80
<i>Bitten or stung by nonvenomous insect and other arthropods</i>	9
<i>Bitten or crushed by other reptiles</i>	0
<i>Other and unspecified animate mechanical forces</i>	13
Accidental drowning and submersion	3,582
<i>Drowning and submersion while in or falling into bath-tub</i>	344
<i>Drowning and submersion while in or falling into swimming-pool</i>	607
<i>Drowning and submersion while in or falling into natural water</i>	1,603
<i>Other and unspecified drowning and submersion</i>	1,028
Other accidental threats to breathing	5,900
<i>Accidental suffocation and strangulation in bed</i>	573
<i>Other accidental hanging and strangulation</i>	274
<i>Threat to breathing due to cave-in, falling earth and other substances</i>	50
<i>Inhalation of gastric contents</i>	333
<i>Inhalation and ingestion of food causing obstruction of respiratory tract</i>	864
<i>Inhalation and ingestion of other objects causing obstruction of respiratory tract</i>	3,189
<i>Confined to or trapped in a low-oxygen environment</i>	14

<i>Other and unspecified threats to breathing</i>	603
Exposure to electric current, radiation, temperature, and pressure	420
<i>Electric transmission lines</i>	105
<i>Other and unspecified electric current</i>	293
<i>Radiation</i>	0
<i>Excessive heat or cold of man-made origin</i>	13
<i>High and low air pressure and changes in air pressure</i>	9
<i>Other and unspecified man-made environmental factors</i>	0
Exposure to smoke, fire and flames	3,197
<i>Uncontrolled fire in building or structure</i>	2,617
<i>Uncontrolled fire not in building or structure</i>	52
<i>Controlled fire in building or structure</i>	28
<i>Controlled fire not in building or structure</i>	33
<i>Ignition of highly flammable material</i>	63
<i>Ignition or melting of nightwear</i>	6
<i>Ignition or melting of other clothing and apparel</i>	97
<i>Other and unspecified smoke fire and flames</i>	301
Contact with heat and hot substances	102
<i>Contact with hot tap-water</i>	43
<i>Other and unspecified heat and hot substances</i>	59
Contact with venomous animals and plants	105
<i>Contact with venomous snakes and lizards</i>	7
<i>Contact with venomous spiders</i>	10
<i>Contact with hornets, wasps and bees</i>	82
<i>Contact with other and unspecified venomous animal or plant</i>	6
Exposure to forces of nature	2,179
<i>Exposure to excessive natural heat</i>	466
<i>Exposure to excessive natural cold</i>	700
<i>Lightning</i>	48
<i>Earthquake and other earth movements</i>	37
<i>Cataclysmic storm</i>	874
<i>Flood</i>	12
<i>Exposure to other and unspecified forces of nature</i>	42
Accidental poisoning by and exposure to noxious substances	23,618
<i>Nonopioid analgesics, antipyretics, and antirheumatics</i>	226

<i>Antiepileptic, sedative-hypnotic, antiparkinsonism, and psychotropic drugs n.e.c.</i>	1,496
<i>Narcotics and psychodysleptics [hallucinogens] n.e.c.</i>	11,050
<i>Other and unspecified drugs, medicaments, and biologicals</i>	9,676
<i>Alcohol</i>	346
<i>Gases and vapors</i>	703
<i>Other and unspecified chemicals and noxious substances</i>	121
Overexertion, travel and privation	32
Accidental exposure to other and unspecified factors and sequelae	7,571
Intentional self-harm	32,637
Intentional self-poisoning	5,744
Intentional self-harm by hanging, strangulation, and suffocation	7,248
Intentional self-harm by firearm	17,002
Other and unspecified means and sequelae	2,643
Terrorism	0
Assault	18,124
Assault by firearm	12,352
Assault by sharp object	2,097
Other and unspecified means and sequelae	3,675
Terrorism	0
Event of undetermined intent	4,742
Poisoning	3,240
Hanging, strangulation, and suffocation	139
Drowning and submersion	242
Firearm discharge	221
Exposure to smoke, fire, and flames	120
Falling, jumping, or pushed from a high place	69
Other and unspecified means and sequelae	711
Legal intervention	414
Legal intervention involving firearm discharge	330
Legal execution	54
Other and unspecified means and sequelae	30
Operations of war and sequelae	27
Complications of medical and surgical care and sequelae	2,653

12-0108

May 29, 2012

Ms. Laura Worthington-Forbes
RBF Consulting
111 North Market Street, Suite 440
San Jose, CA 95313

SUBJECT: Ellis Specific Plan, Tracy, CA - Safety Aspects of Energy Pipelines
Peer Review

Dear Ms. Worthington-Forbes:

V&A has completed a peer review of the corrosion impacts of the Final Report for the Safety Aspects of Energy Pipelines Regarding the Proposed Ellis Development (Final Report). The purpose of the Final Report is to summarize the technical parameters pertaining to the gas and oil pipelines, evaluate whether the pipelines pose an unusual hazard considering the proposed land use, identify threats to the integrity of the pipelines, and to recommend mitigations of those threats to lower risk and increase safety. An underlying premise of the Final Report, and the energy transmission industry overall, is that it is the owner's (Chevron and PG&E) responsibility to comply fully with applicable Federal and State (California) regulations. V&A therefore understands that the Final Report's recommendations would apply primarily to future stages of planning, design and construction of the site.

The focus of V&A's peer review is to provide RBF Consulting (RBF) with a review of the Final Report to assure that corrosion-related Federal, State of California regulations governing safety are appropriately addressed for the existing energy transmission pipelines that traverse the Ellis Development site.

The illustration of the Ellis Development showed the conceptual layout of the site, the pipeline access corridor; however, the detailed placements of all proposed buildings are not shown. A separate graphic showed the transmission pipelines traverse the site, consisting of two PG&E high pressure pipelines transporting natural gas and a Chevron petroleum pipeline. The Final Report does not contain detailed drawings or information relating to pipeline appurtenances, nor offset distances from the pipelines to planned buildings on the site.

The Final Report discusses the body of key Federal requirements, the root causes of pipeline failure, and mitigation steps that should be applied to the planning, design and construction of the site. Natural gas and hazardous liquid pipelines are regulated for safety by the Department of Transportation (DOT), Pipeline and Hazardous Materials Safety Administration (PHMSA). The author also notes PHMSA's position that through compliance with the federal pipeline safety requirements that the potential for pipeline failure "present lower risk compared many other widely-present societal factors". The PHMSA report also states that the greatest pipeline safety risks (presumably with pipelines that comply with the regulations) lie with potential external impacts during site construction.

Key observations regarding the pipelines are as follows:

- This conclusion is based on the results of in-line inspections (ILI) of the PG&E pipelines that were shared with the author of the Final Report. Areas of corrosion reportedly ranged from superficial to minor in both natural gas pipelines that cross the western edge of the Ellis Development. According to regulation, PG&E must conduct ILI of the two pipelines within 7 years of the last inspections (2006-2007).
- Chevron did not provide pipeline inspection information because of national security reasons. The Final Report assessment of Chevron's crude oil pipeline condition is based primarily on the premise that Chevron is required to regularly assess the crude oil pipeline's integrity in conformance with Federal and California regulatory requirements.

V&A concurs with the author's assertion that compliance with the Federal and California requirements will yield pipelines meeting current safety standards. The author provides an overview of the key regulations that deal with pipeline safety that apply to the planning, design, construction and operation of gas and oil pipelines. However, it was not the purpose of the report to cite all of the regulatory requirements that must be implemented throughout the planning, design and construction of the project. We also concur with the Final Report that states that incorporation of site mitigation recommendations is critical to overall safety. The Developer's proposed 100-foot setback, rather than the industry standard 25-foot setback, helps to further minimize potential adverse impacts on the pipeline's integrity during construction, and thus would reduce overall risk.

V&A also believes that it is important for the Developer to provide an independent QA/QC reviewer to assure that all regulations and recommendations are implemented into the planning, design and construction of the Ellis Development site. The reviewer should also assure that both Chevron and PG&E continue to stay current with regulations at the time of site construction.

Please contact us should you have any questions or need additional information.

Regards,



Jose L. Villalobos, P.E.
Chief Executive Officer





D Noise Data

Site Number: 1			
Recorded By: Jonathan Schuppert			
Job Number: 40-100187			
Date: 4/18/2012			
Time: 11:37 AM			
Location: Encanto Lane/Whirlaway Lane			
Source of Peak Noise:			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
57.7	43.6	73.3	97.0

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	8/16/2011	
	Microphone	Brüel & Kjær	4189	2543364	8/16/2011	
	Preamp	Brüel & Kjær	ZC 0032	4265	8/16/2011	
	Calibrator	Brüel & Kjær	4231	2545667	8/16/2011	
Weather Data						
Est.	Duration: 10minutes			Sky: clear		
	Note: dBA Offset = 0.01			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (in)	
	2.6		76.4		30.6	

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 2.0.2
Start Time:		04/18/2012 11:41:15
End Time:		04/18/2012 11:51:15
Elapsed Time:		00:10:00
Bandwidth:		Broadband
Max Input Level:		138.82

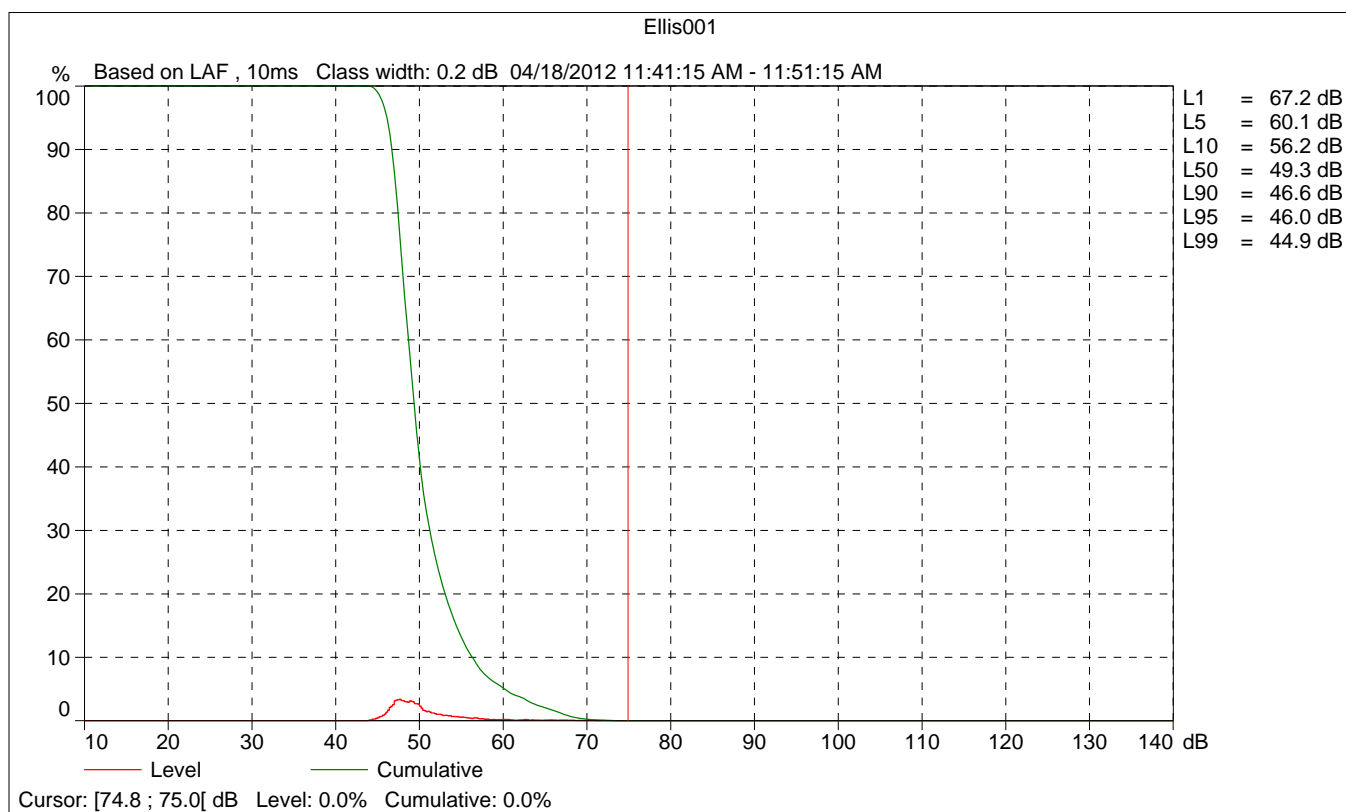
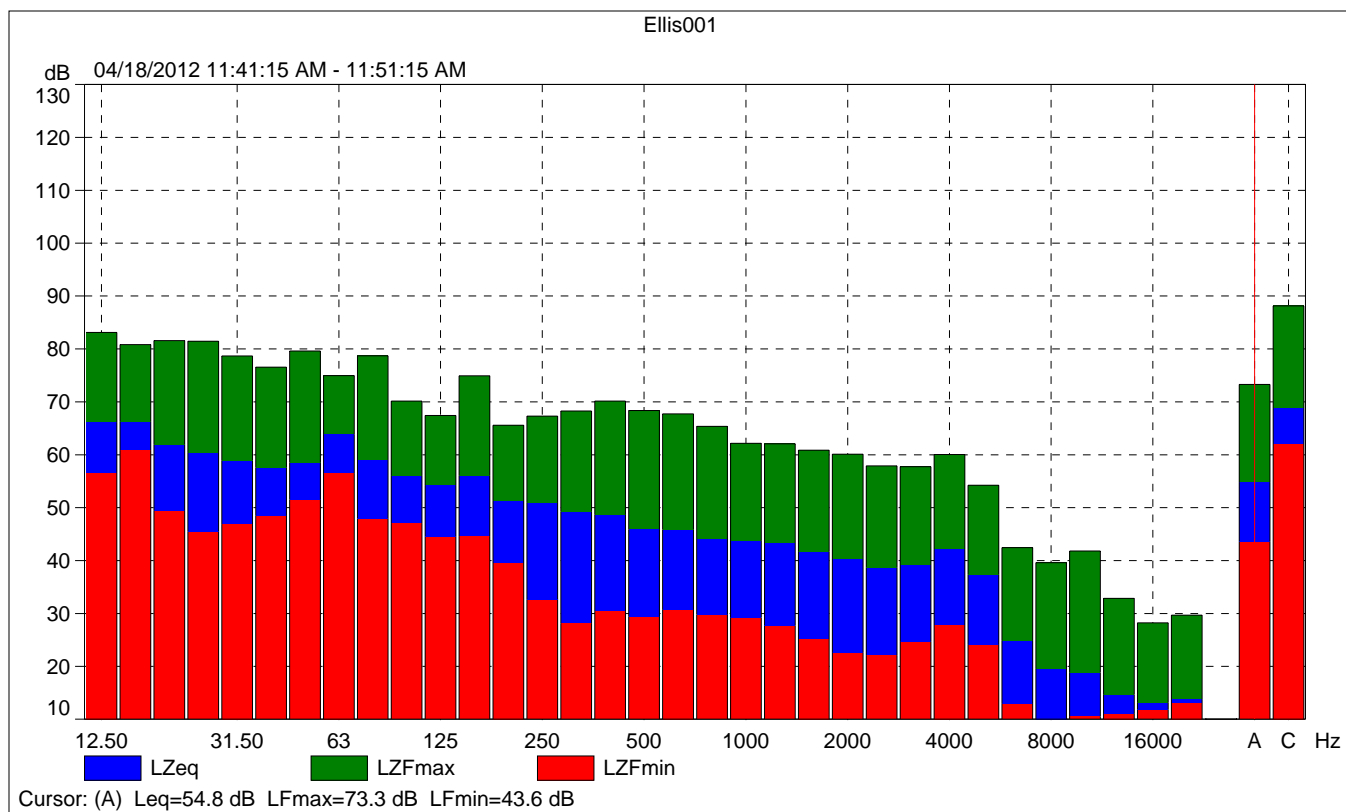
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Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

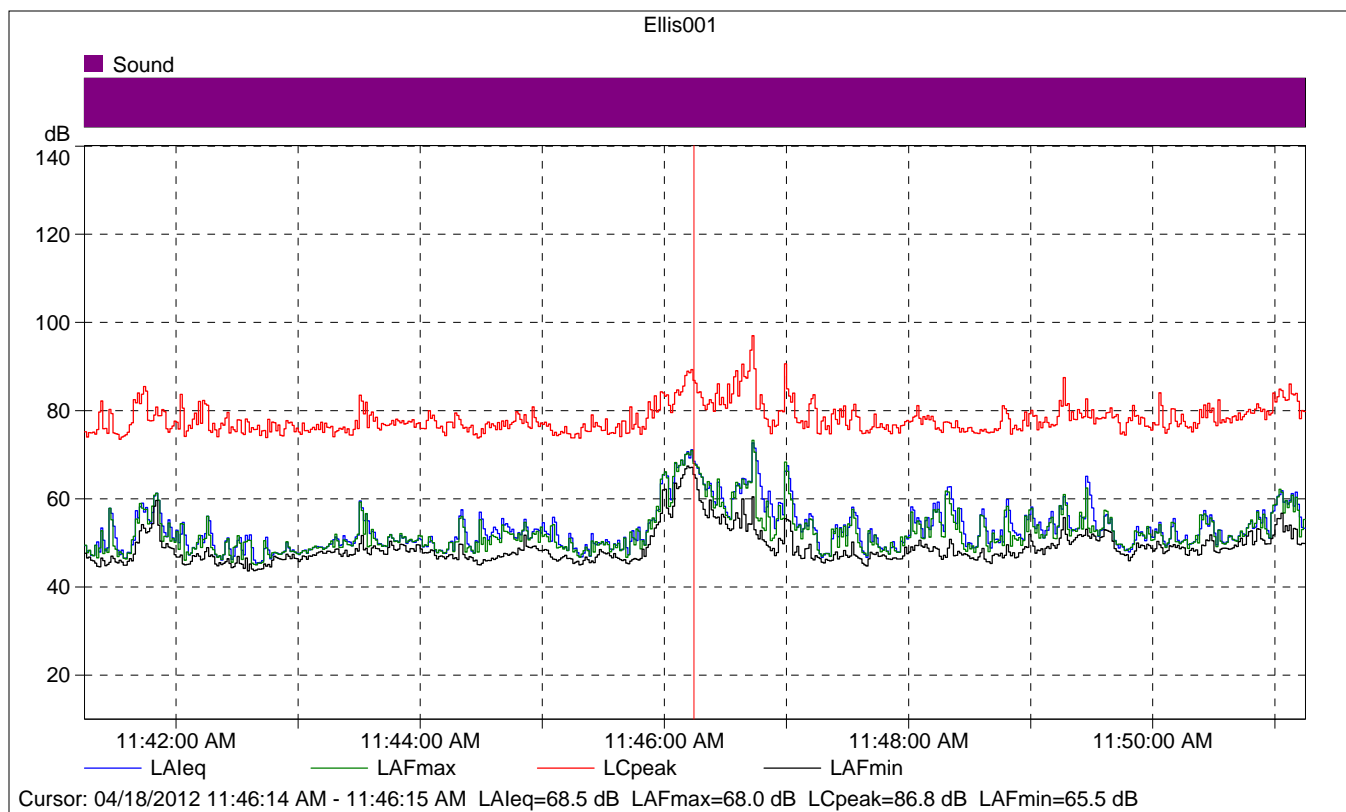
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Diffuse-field

Calibration Time:		04/18/2012 09:57:32
Calibration Type:		External reference
Sensitivity:		63.76 mV/Pa

Ellis001

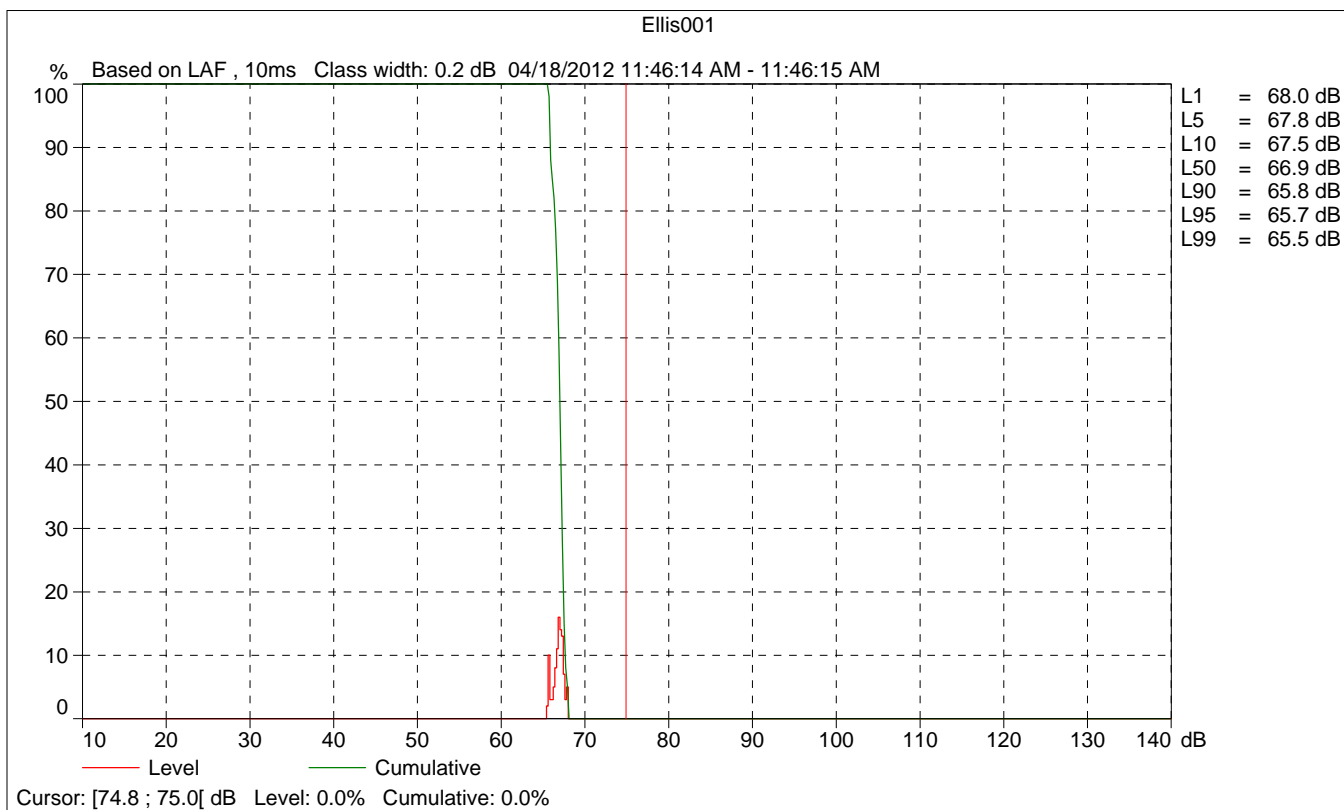
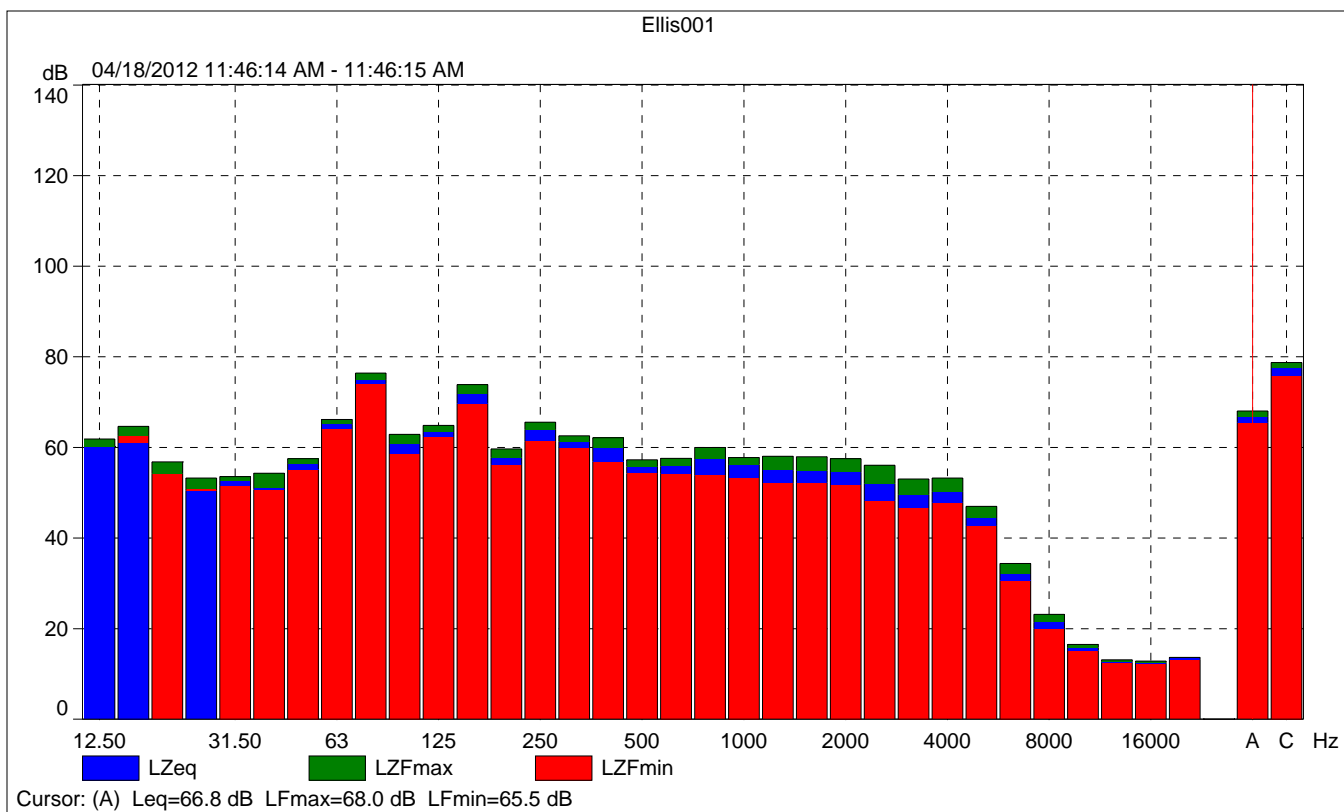
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Time	11:41:15 AM	11:51:15 AM				
Date	04/18/2012	04/18/2012				

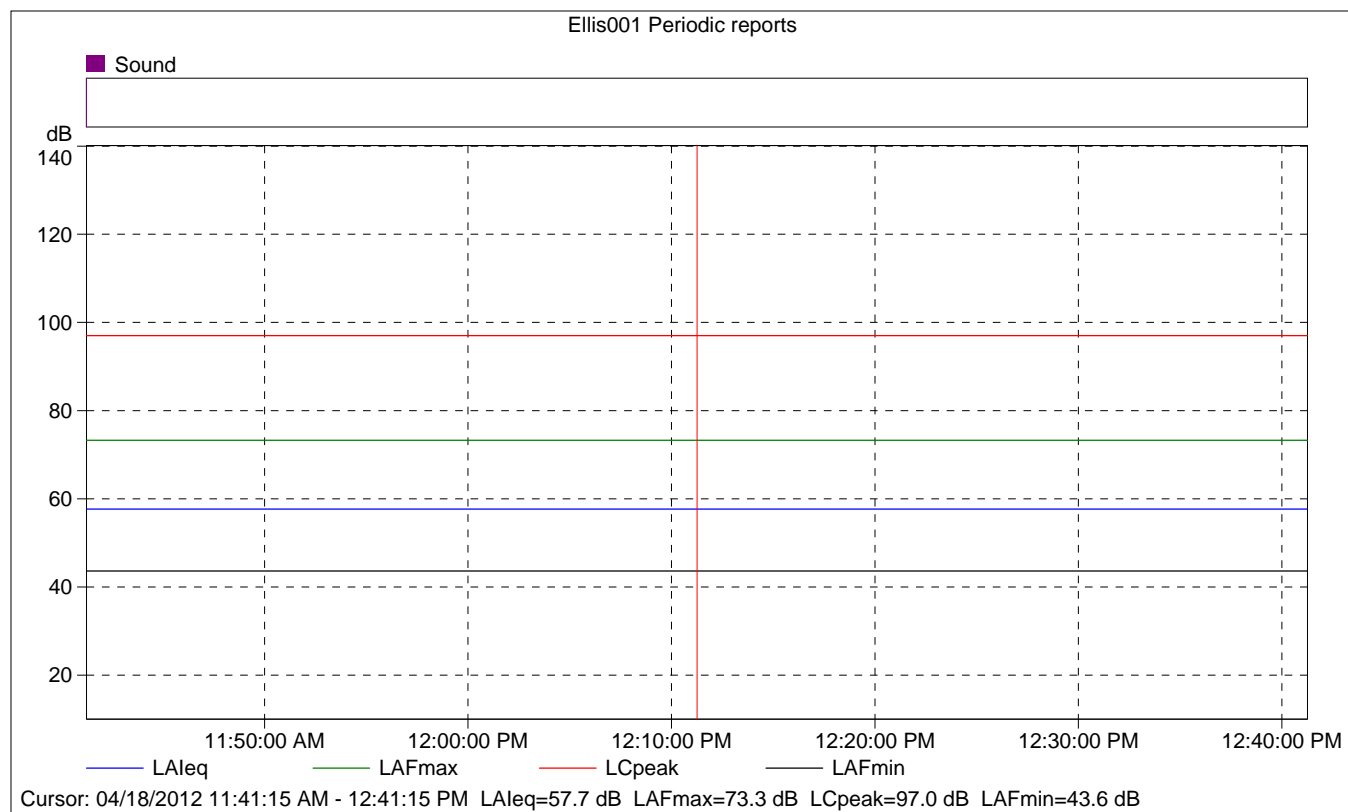




Ellis001

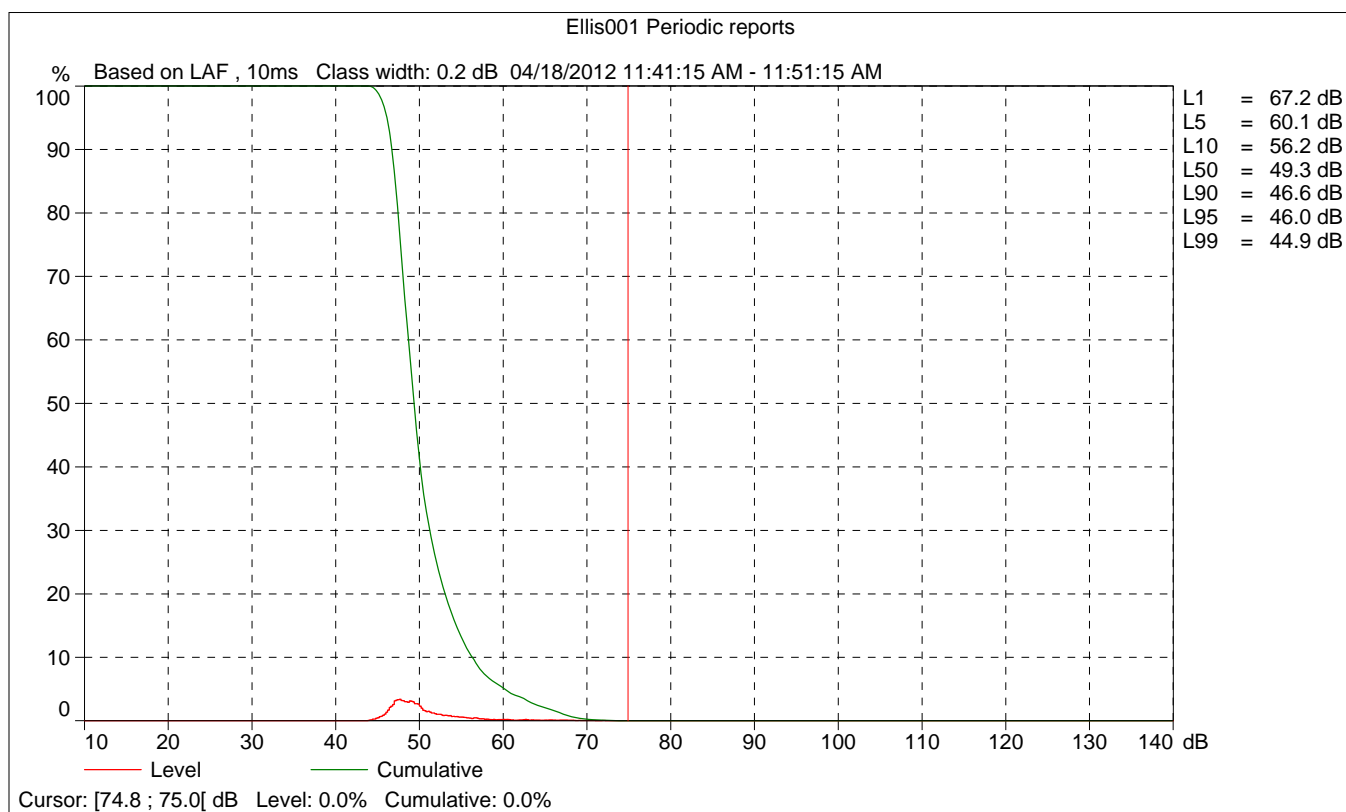
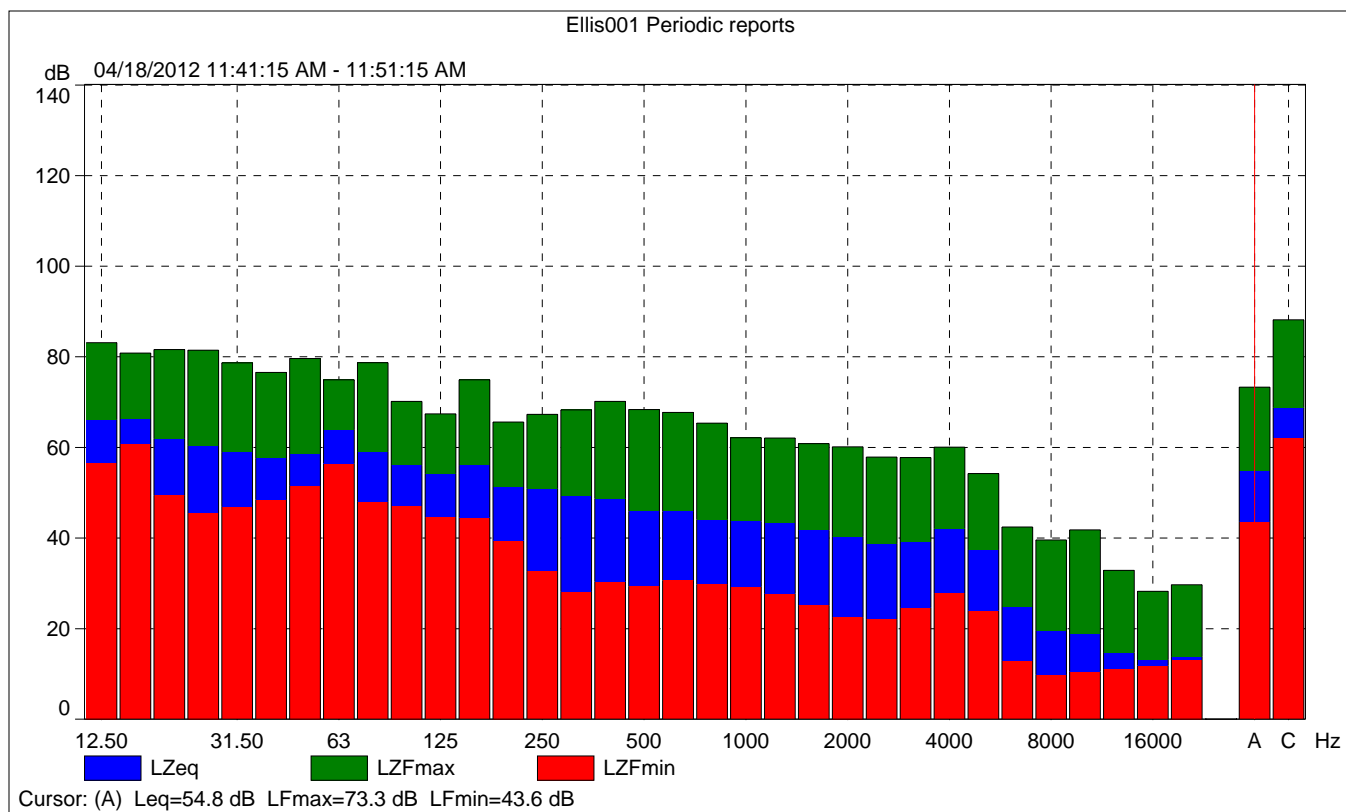
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Date	04/18/2012				

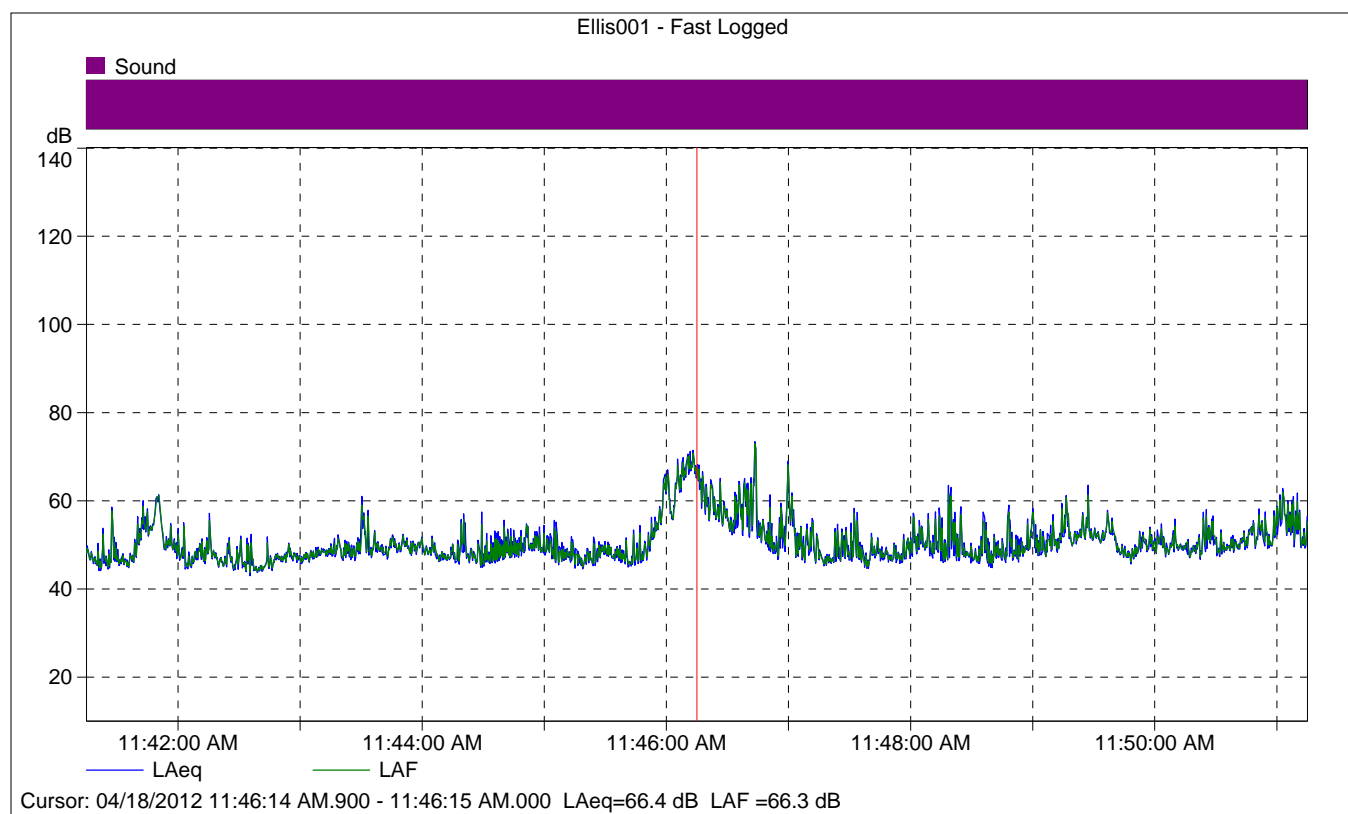




Ellis001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	57.7	73.3	43.6
Time	11:41:15 AM	0:10:00				
Date	04/18/2012					





Ellis001 - Fast Logged

	Start time	Elapsed time	LAeq [dB]
Value			66.4
Time	11:46:14 AM.900	0:00:00.100	
Date	04/18/2012		

Site Number: 2			
Recorded By: Jonathan Schuppert			
Job Number: 40-100187			
Date: 4/18/2012			
Time: 12:45 PM			
Location: Lammers Road at the northwest corner of the project site			
Source of Peak Noise: traffic, aircraft			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
69.4	35.9	90.3	120.2

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	8/16/2011	
	Microphone	Brüel & Kjær	4189	2543364	8/16/2011	
	Preamp	Brüel & Kjær	ZC 0032	4265	8/16/2011	
	Calibrator	Brüel & Kjær	4231	2545667	8/16/2011	
Weather Data						
Est.	Duration: 10minutes			Sky: clear		
	Note: dBA Offset = 0.01			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (in)	
	4.5		76.6		30.6	

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 2.0.2
Start Time:		04/18/2012 12:46:08
End Time:		04/18/2012 12:56:54
Elapsed Time:		00:10:00
Bandwidth:		Broadband
Max Input Level:		138.82

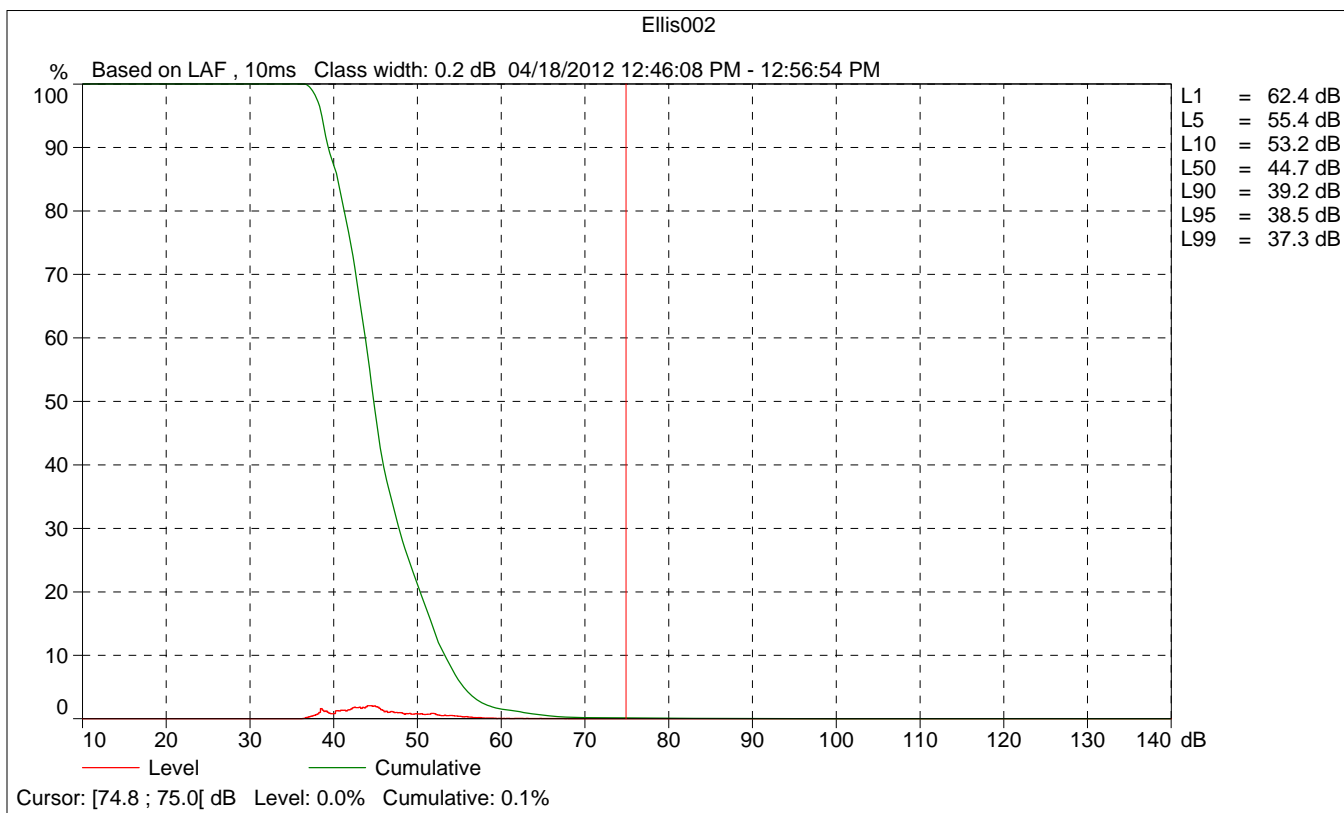
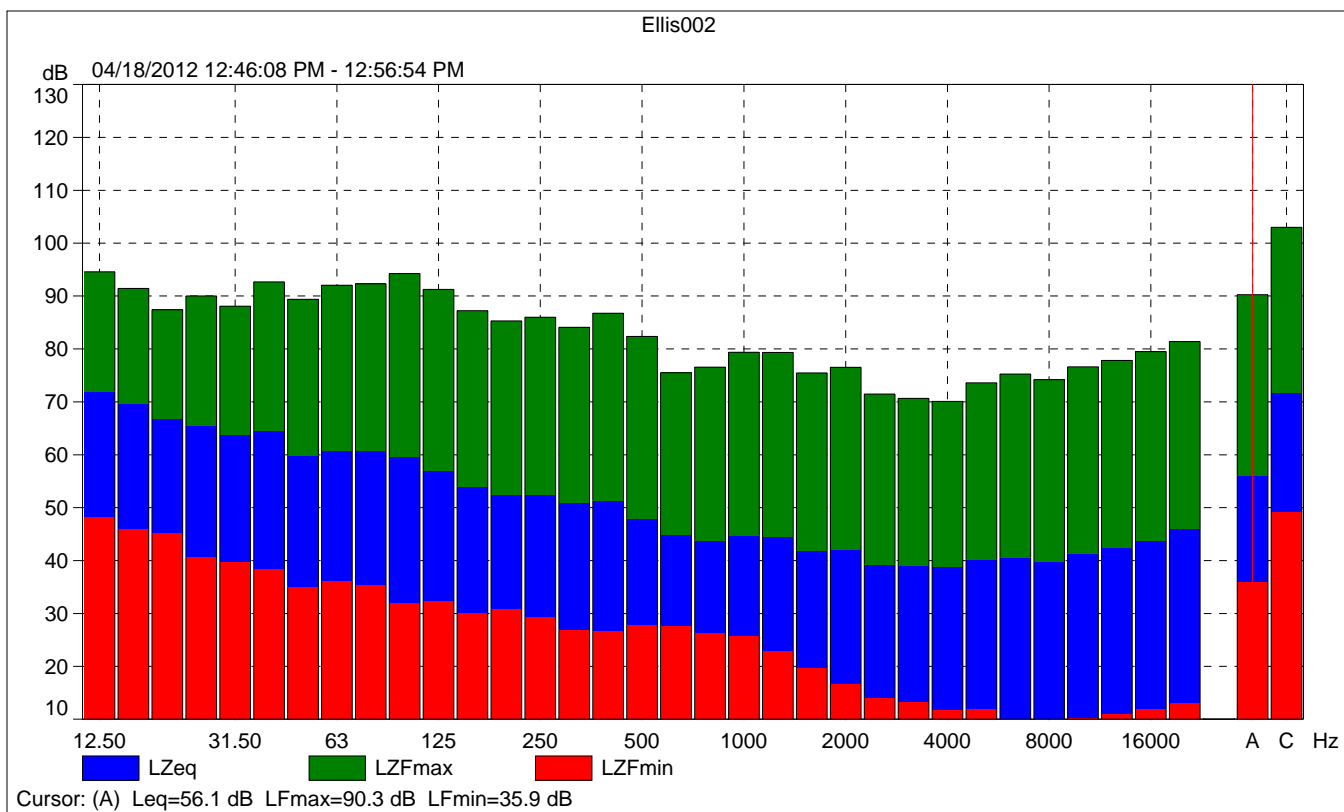
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

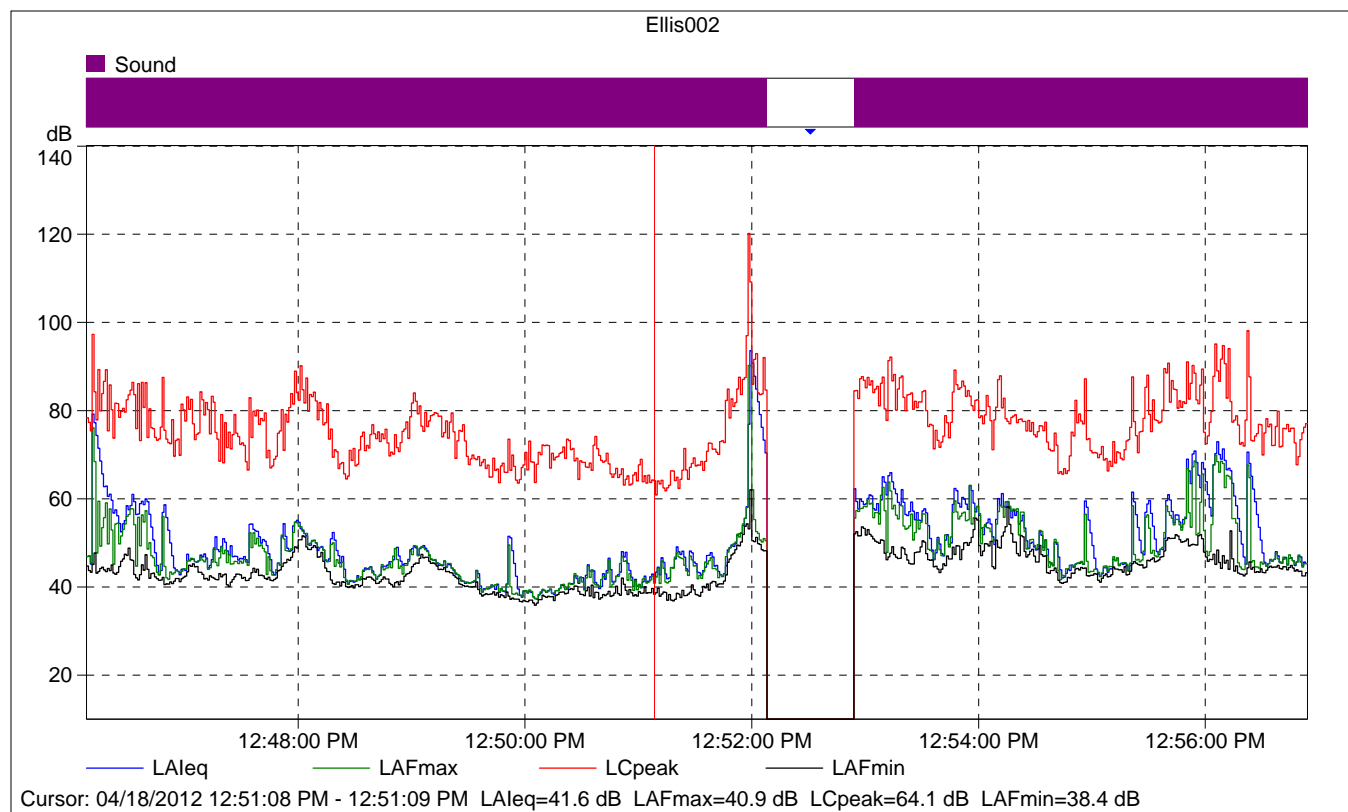
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Diffuse-field

Calibration Time:		04/18/2012 09:57:32
Calibration Type:		External reference
Sensitivity:		63.76 mV/Pa

Ellis002

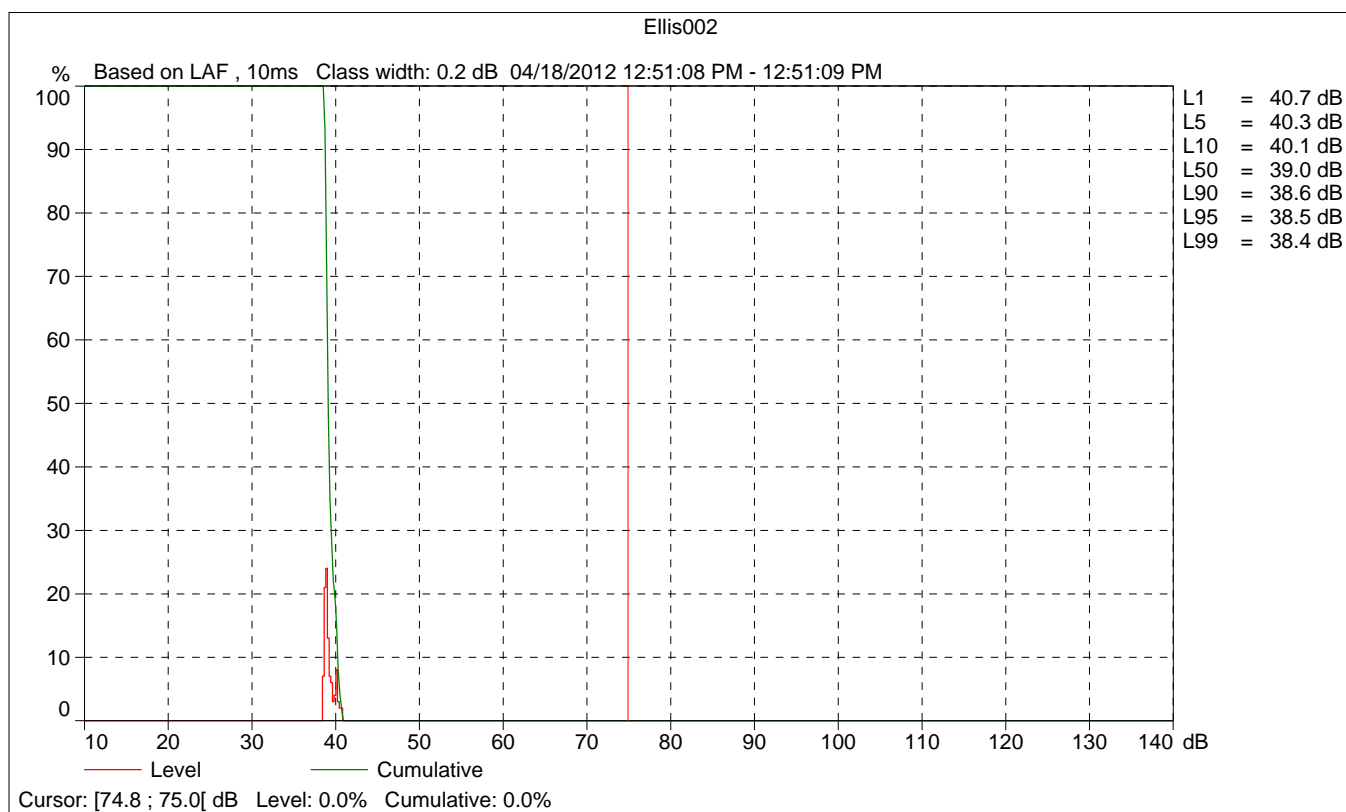
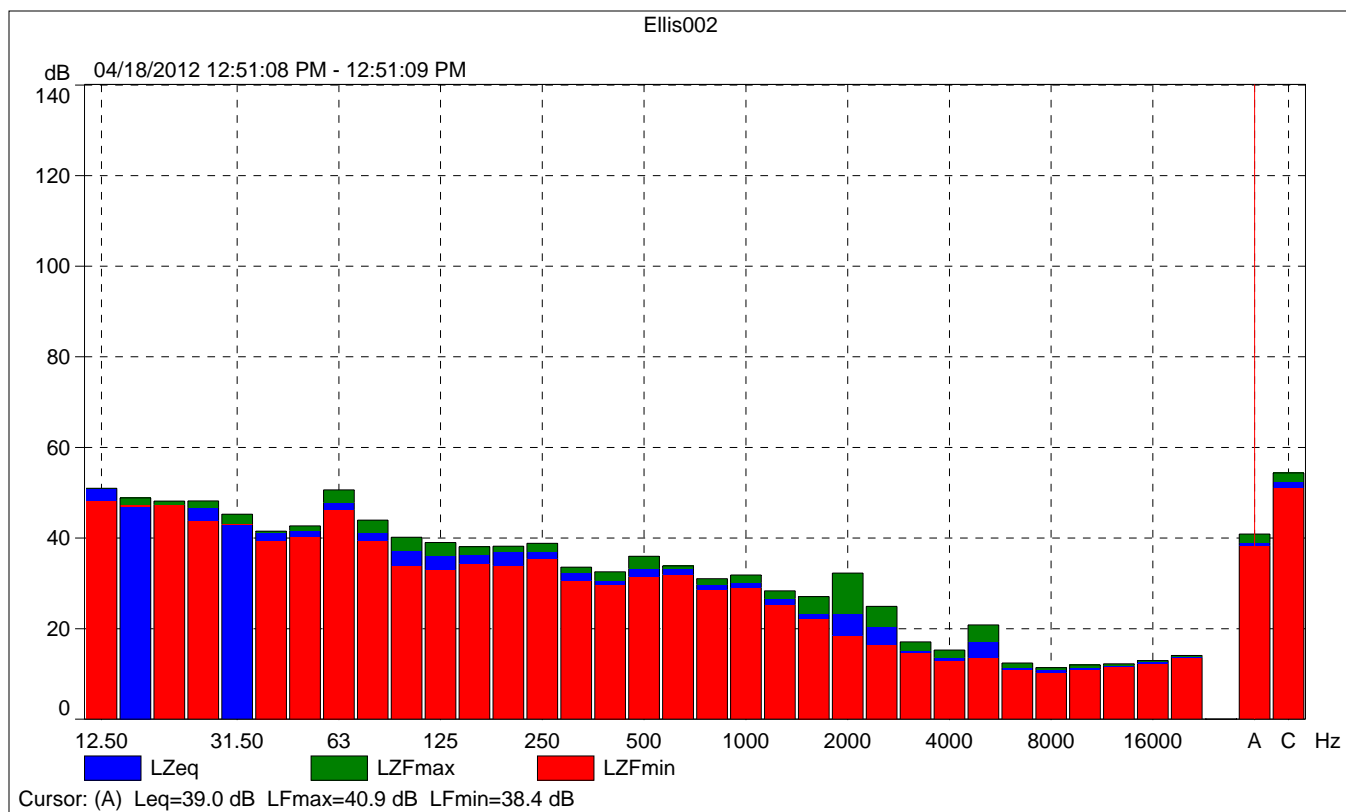
	Start time	End time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			---	69.4	90.3	35.9
Time	12:46:08 PM	12:56:54 PM				
Date	04/18/2012	04/18/2012				

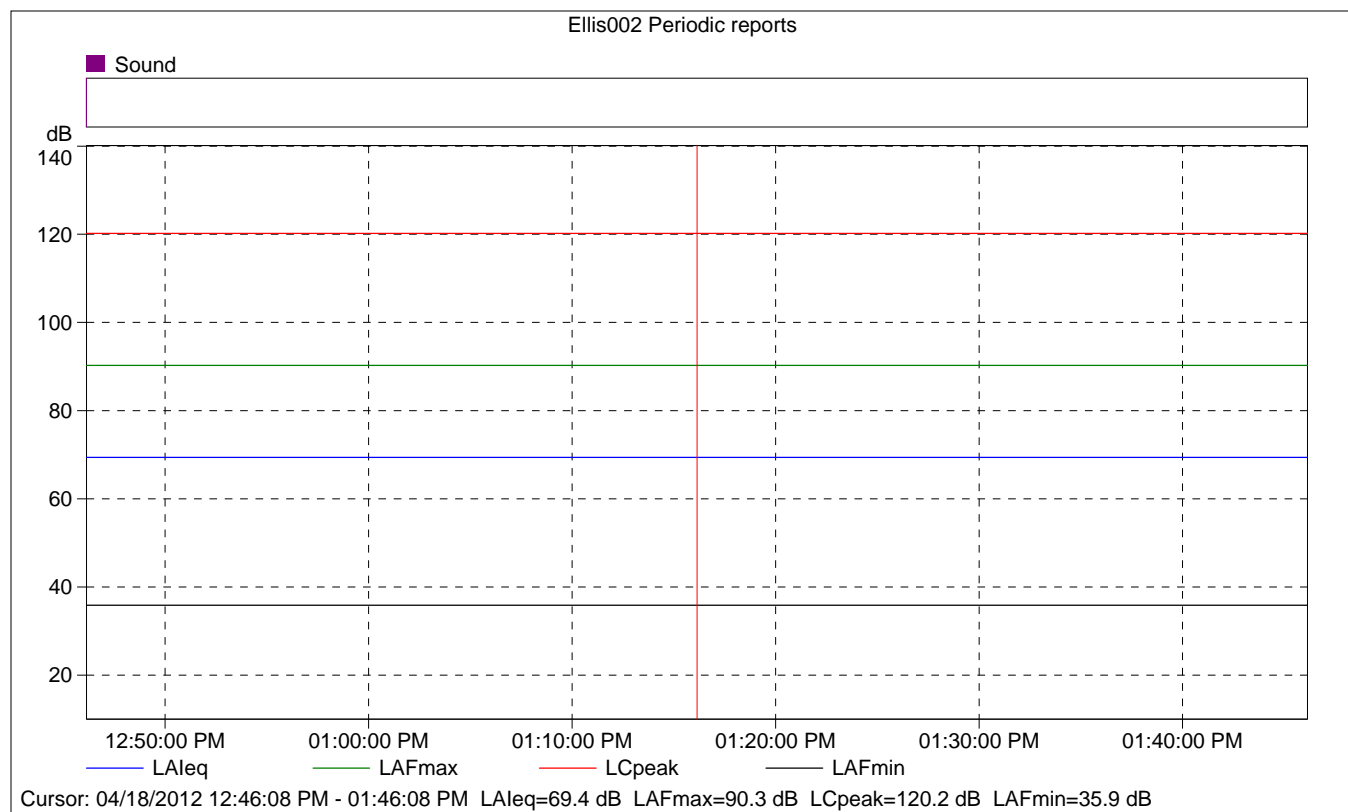




Ellis002

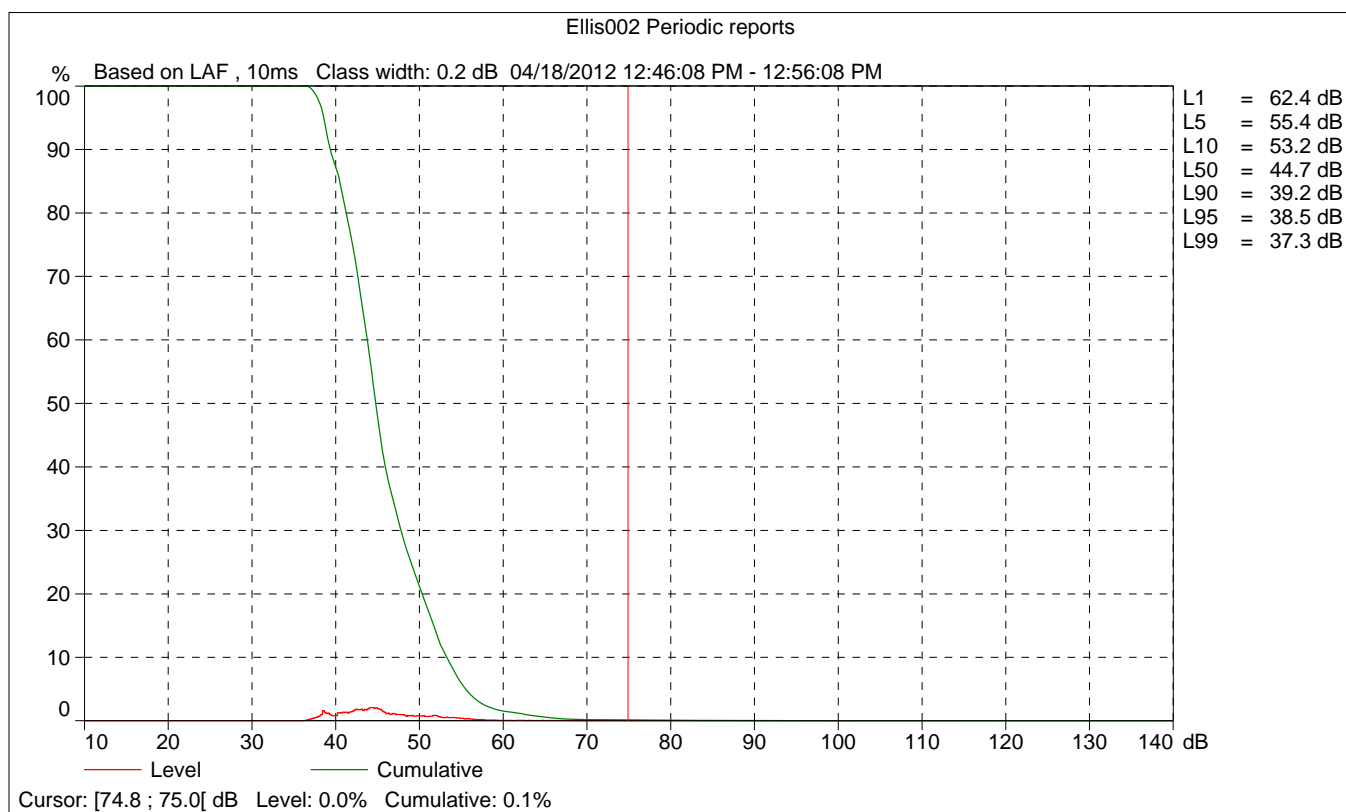
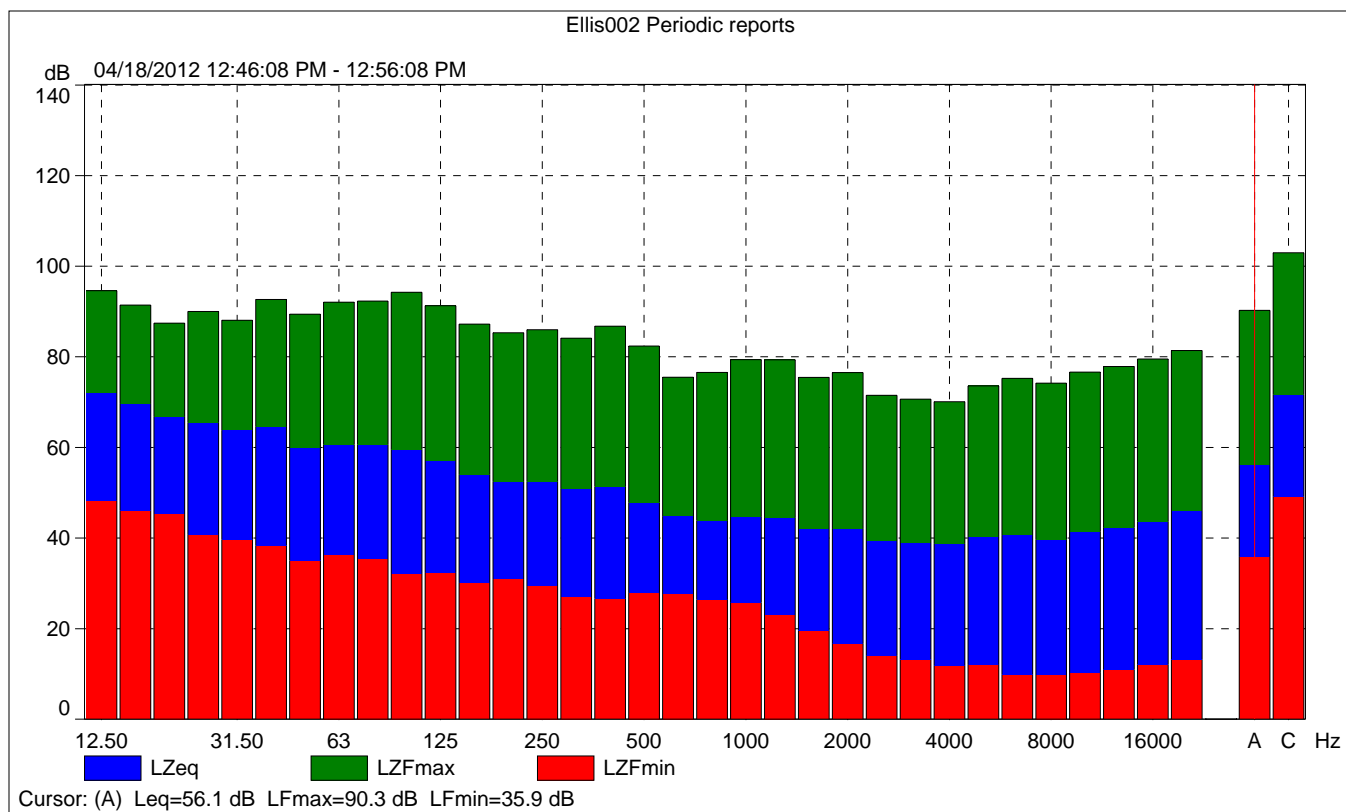
	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			41.6	40.9	38.4
Time	12:51:08 PM	0:00:01			
Date	04/18/2012				

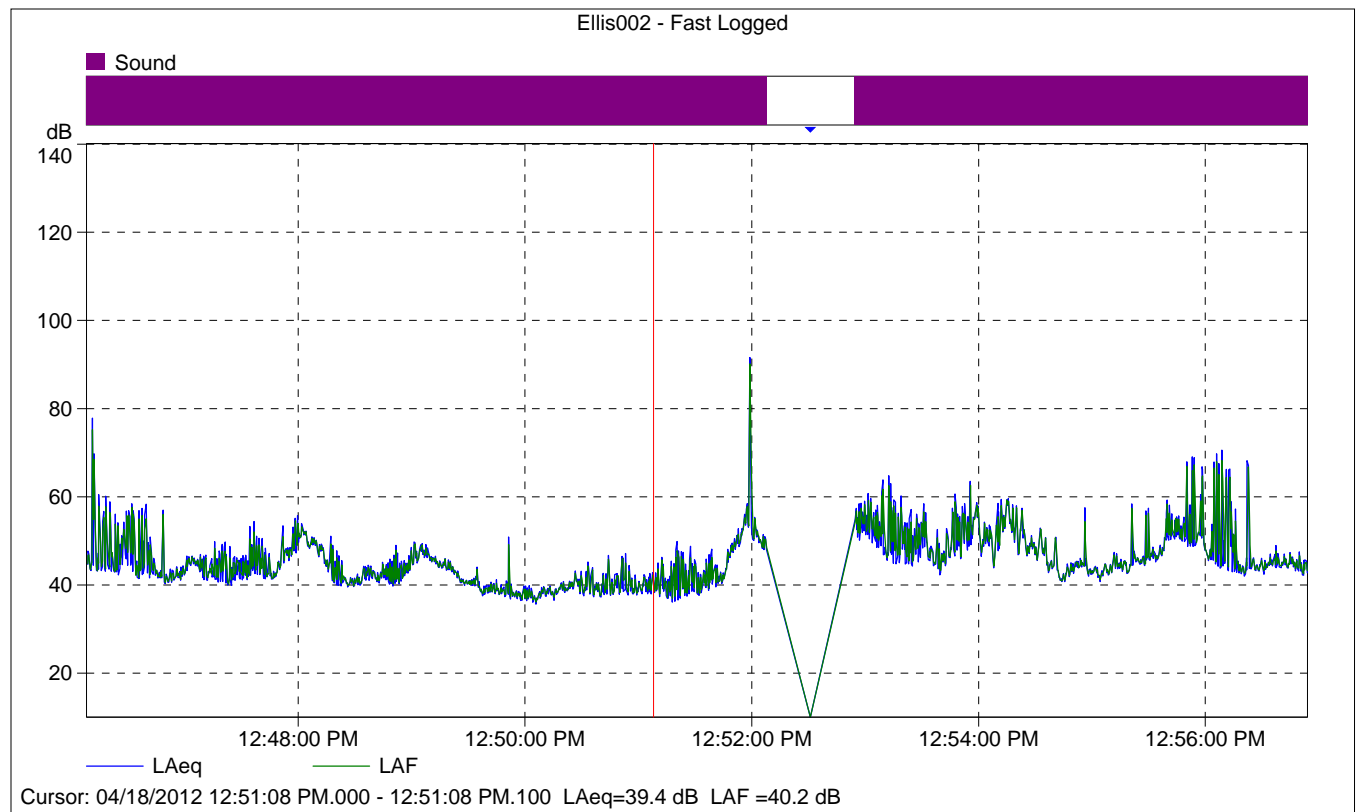




Ellis002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	69.4	90.3	35.9
Time	12:46:08 PM	0:10:00				
Date	04/18/2012					





Ellis002 - Fast Logged

	Start time	Elapsed time	LAeq [dB]
Value			39.4
Time	12:51:08 PM	0:00:00.100	
Date	04/18/2012		

Site Number: 3			
Recorded By: Jonathan Schuppert			
Job Number: 40-100187			
Date: 4/18/2012			
Time: 12:23 PM			
Location: Corral Hollow (North of Peony)			
Source of Peak Noise: traffic			
Noise Data			
Leq (dB)	Lmin (dB)	Lmax (dB)	Peak (dB)
72.9	39.9	88.8	108.9

Equipment						
Category	Type	Vendor	Model	Serial No.	Cert. Date	Note
Sound	Sound Level Meter	Brüel & Kjær	2250	2548189	8/16/2011	
	Microphone	Brüel & Kjær	4189	2543364	8/16/2011	
	Preamp	Brüel & Kjær	ZC 0032	4265	8/16/2011	
	Calibrator	Brüel & Kjær	4231	2545667	8/16/2011	
Weather Data						
Est.	Duration: 10minutes			Sky: clear		
	Note: dBA Offset = 0.01			Sensor Height (ft): 5 ft		
	Wind Ave Speed (mph / m/s)		Temperature (degrees Fahrenheit)		Barometer Pressure (in)	
	3.6		76.9		30.6	

Photo of Measurement Location



2250

Instrument:		2250
Application:		BZ7225 Version 2.0.2
Start Time:		04/18/2012 12:22:51
End Time:		04/18/2012 12:32:51
Elapsed Time:		00:10:00
Bandwidth:		Broadband
Max Input Level:		138.82

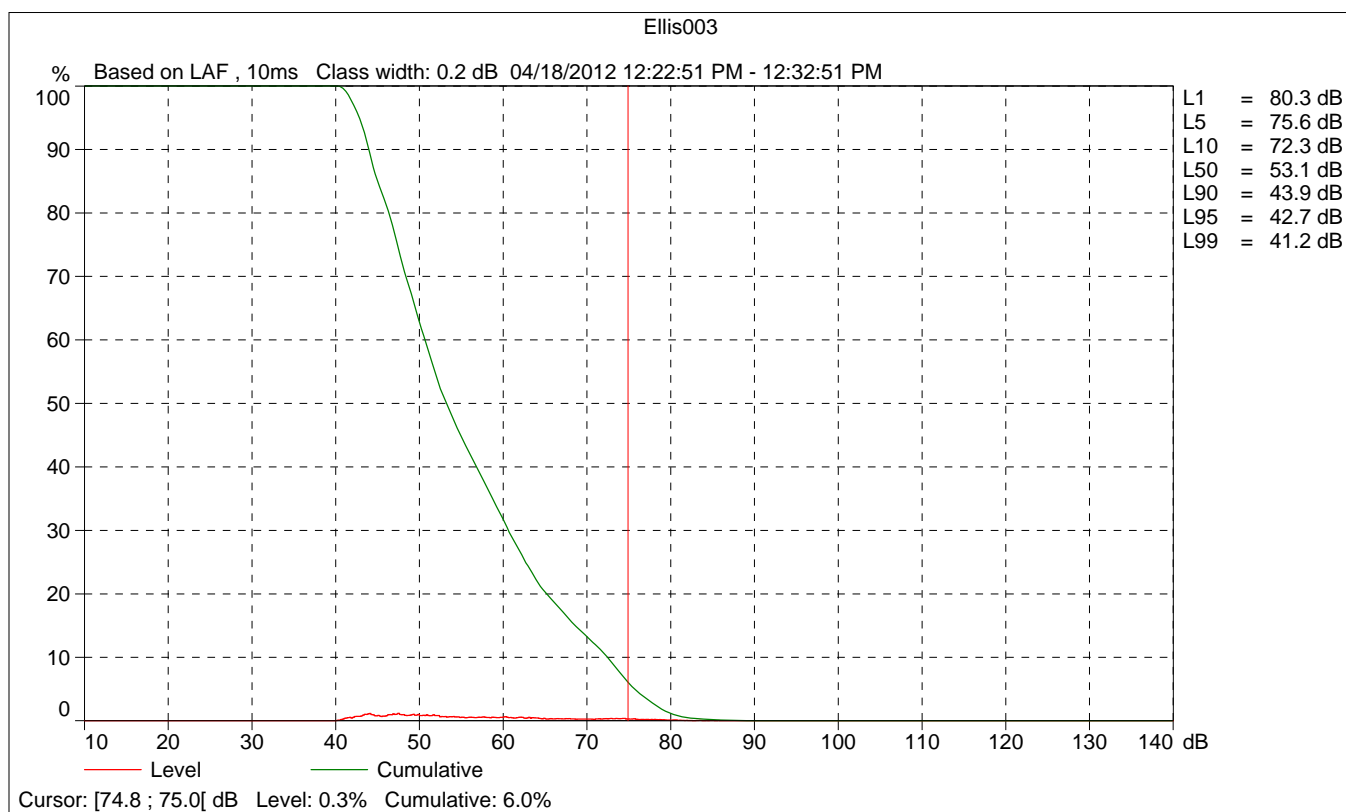
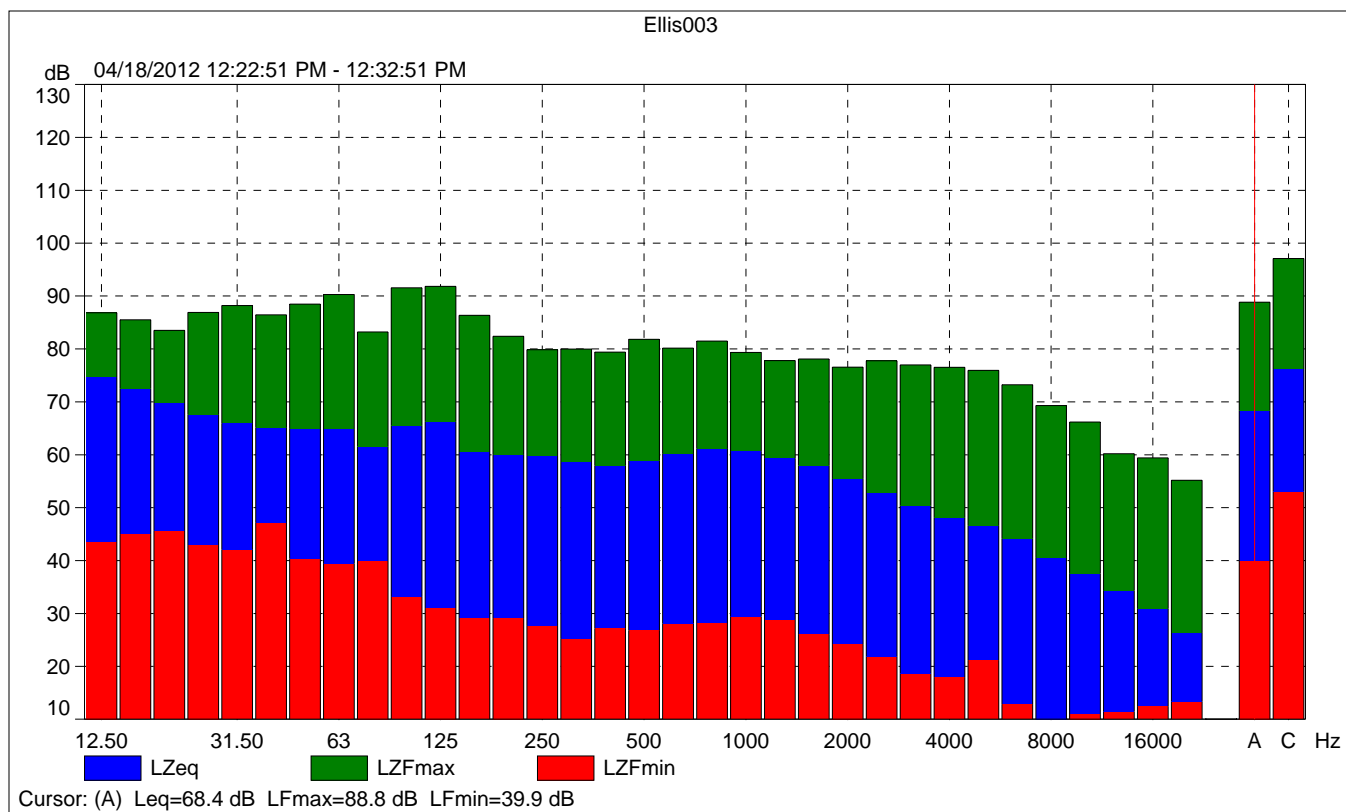
	Time	Frequency
Broadband (excl. Peak):	FSI	AC
Broadband Peak:		C
Spectrum:	FS	Z

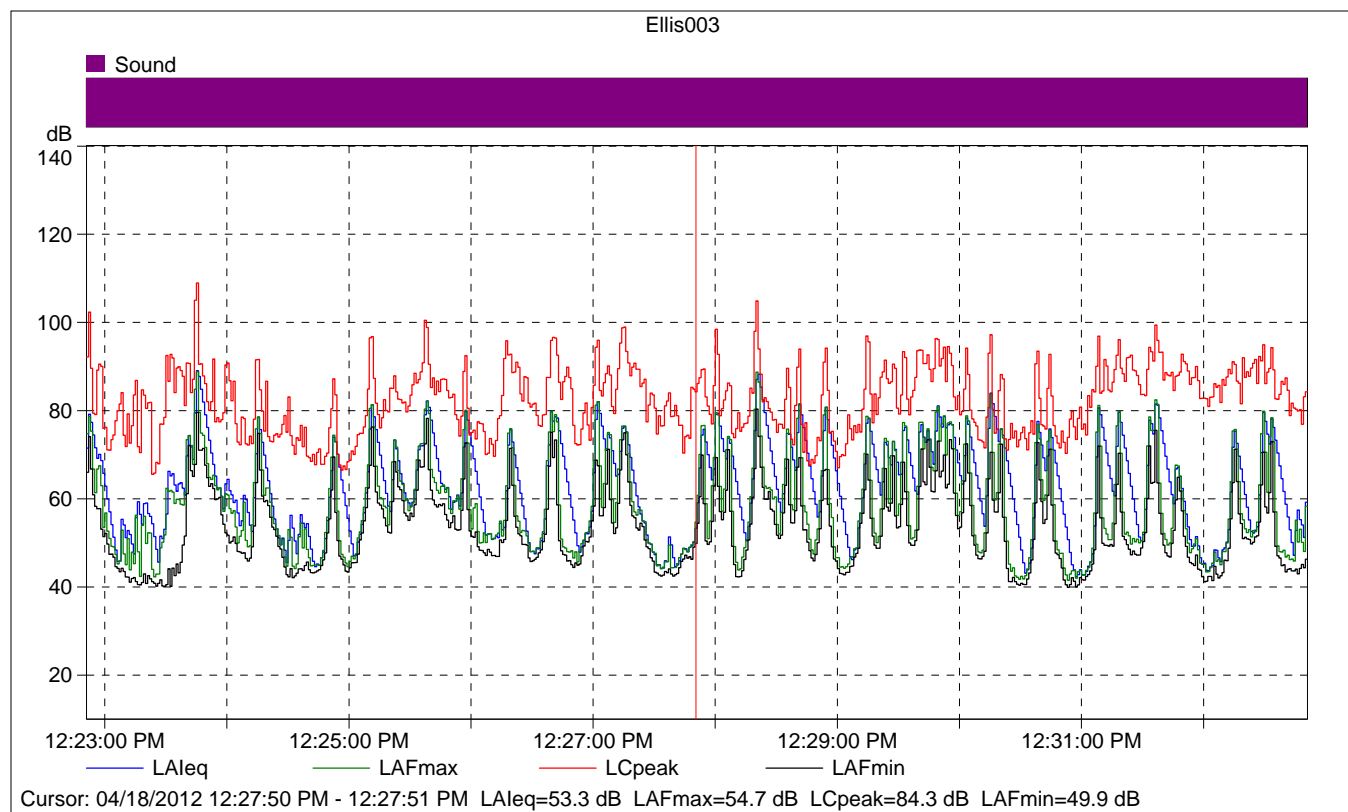
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Diffuse-field

Calibration Time:		04/18/2012 09:57:32
Calibration Type:		External reference
Sensitivity:		63.76 mV/Pa

Ellis003

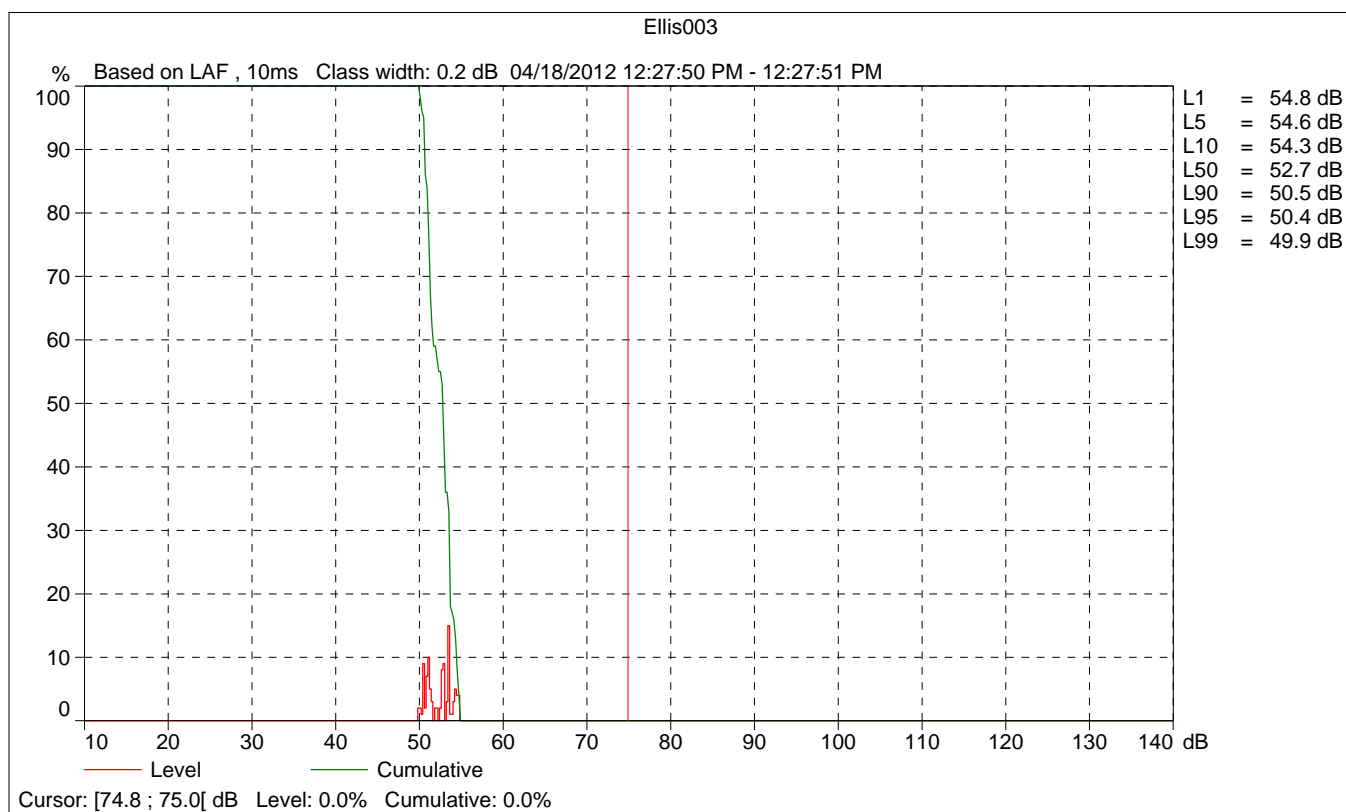
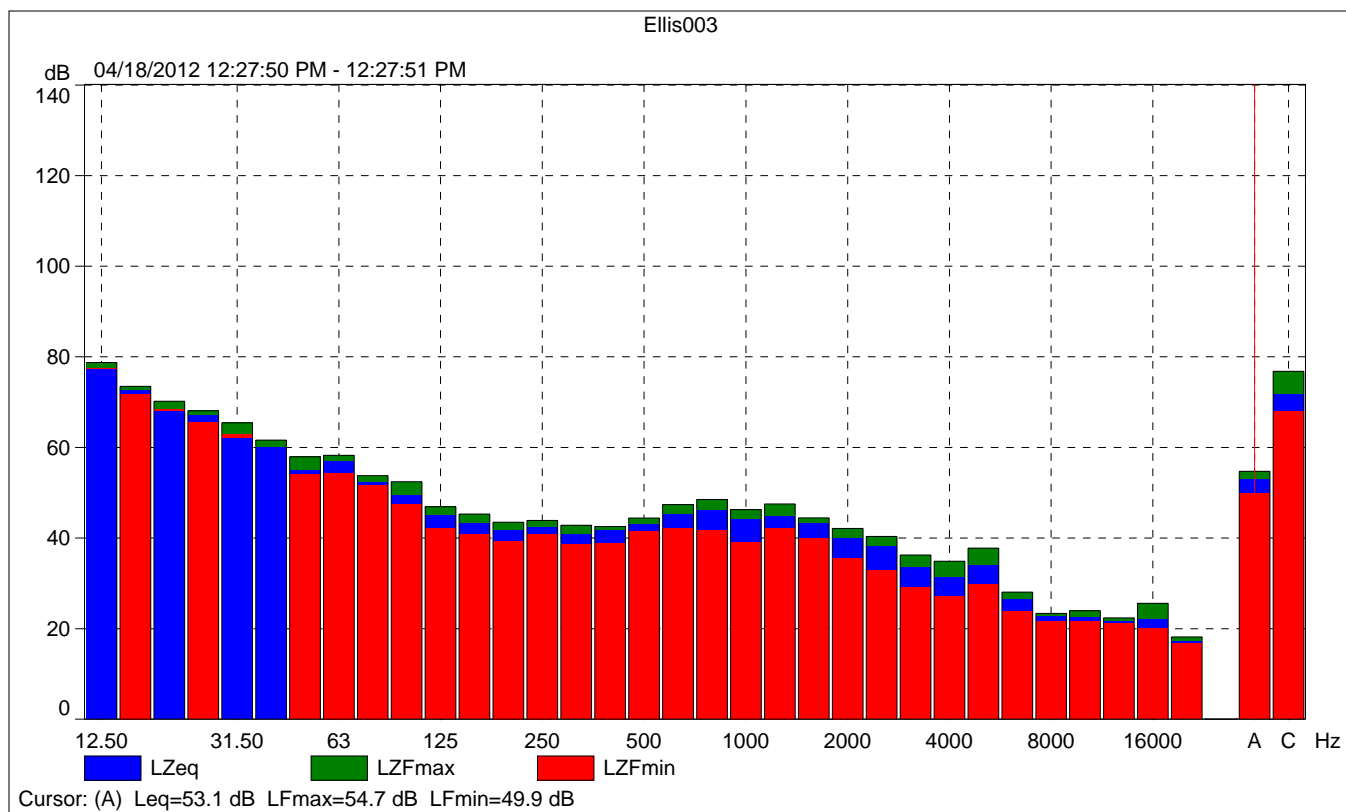
	Start time	End time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			---	72.9	88.8	39.9
Time	12:22:51 PM	12:32:51 PM				
Date	04/18/2012	04/18/2012				

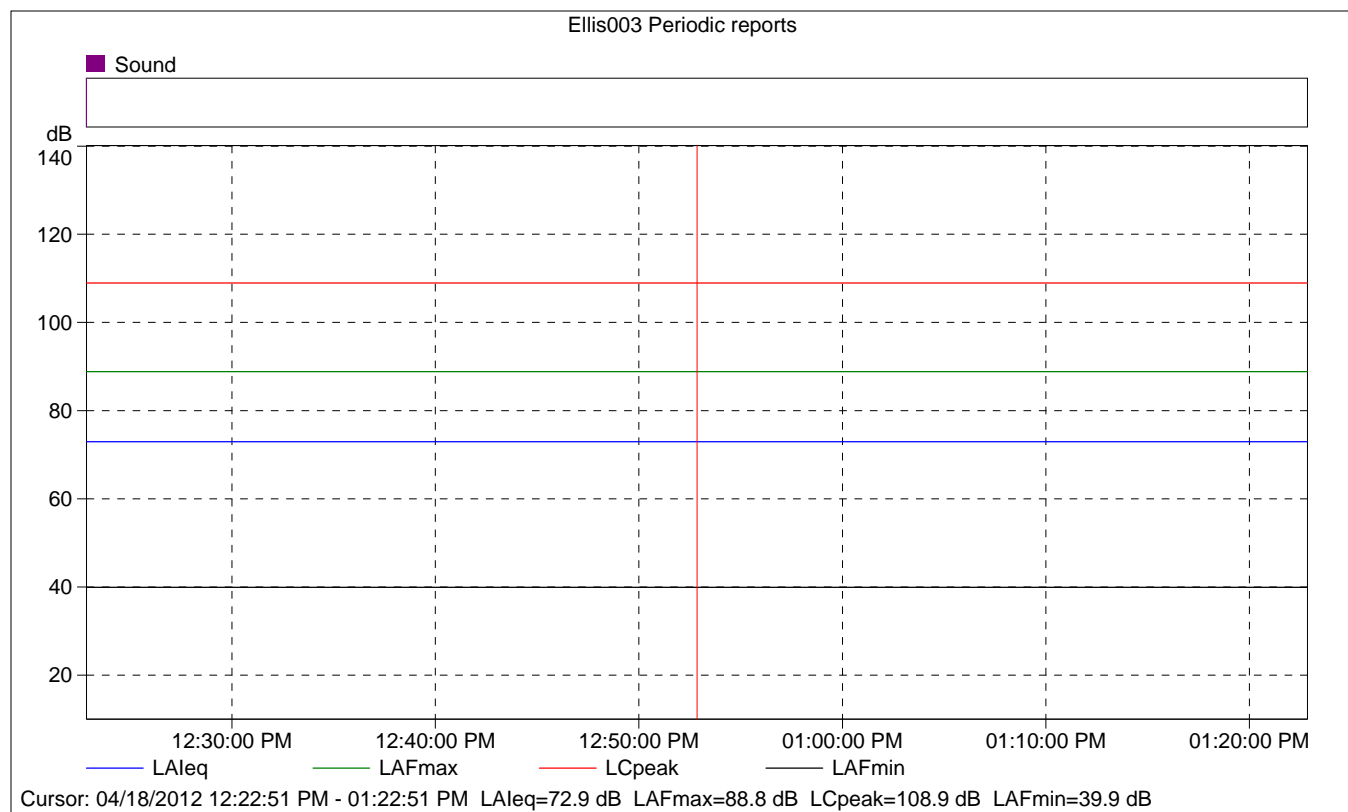




Ellis003

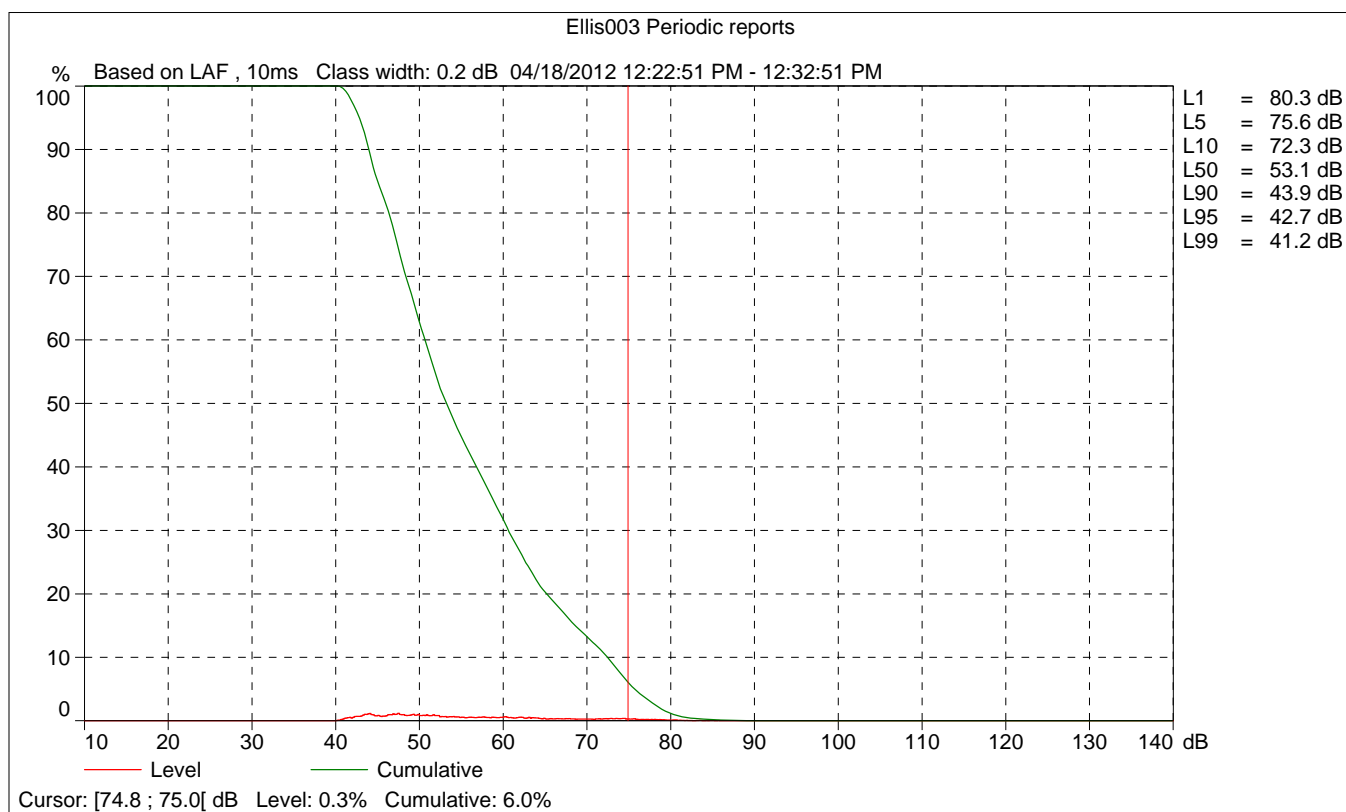
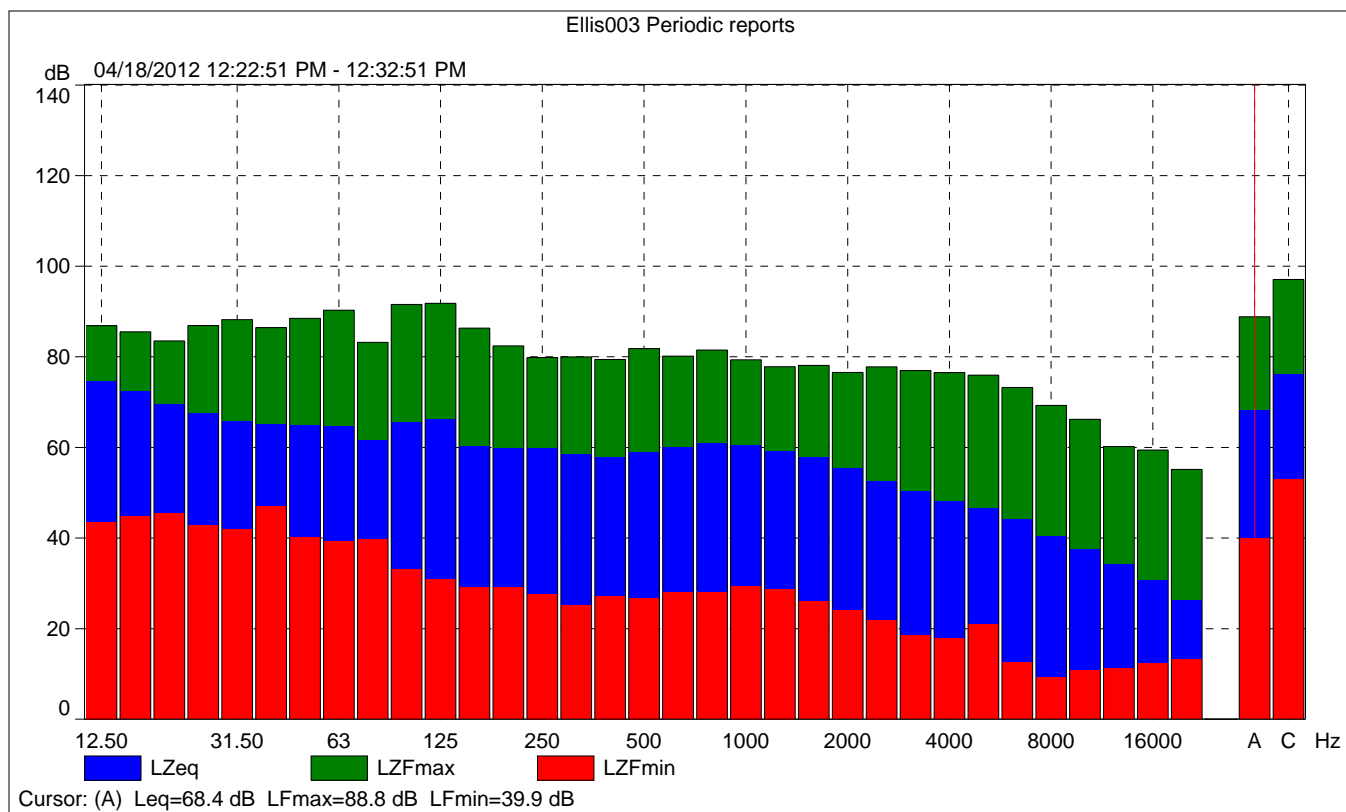
	Start time	Elapsed time	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			53.3	54.7	49.9
Time	12:27:50 PM	0:00:01			
Date	04/18/2012				

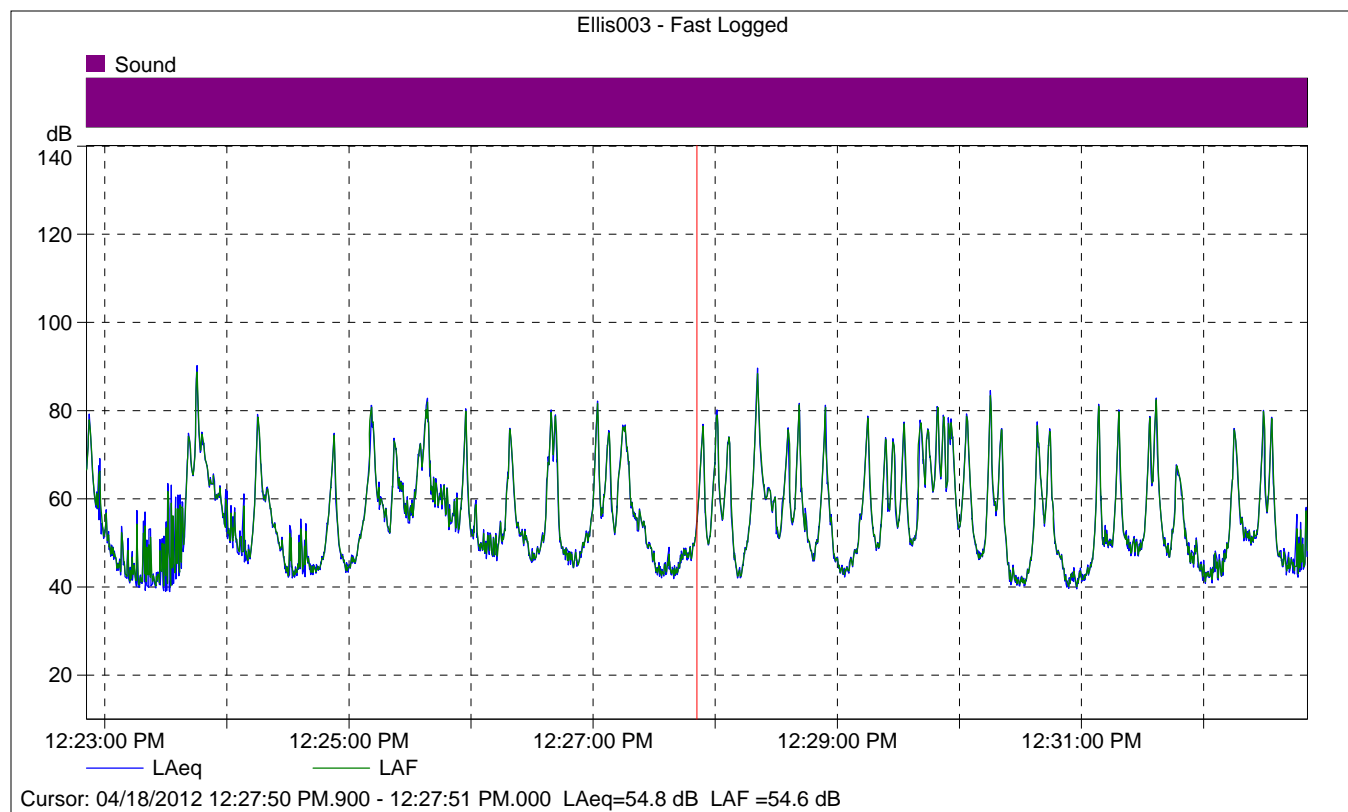




Ellis003 Periodic reports

	Start time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	72.9	88.8	39.9
Time	12:22:51 PM	0:10:00				
Date	04/18/2012					





Ellis003 - Fast Logged

	Start time	Elapsed time	LAeq [dB]
Value			54.8
Time	12:27:50 PM.900	0:00:00.100	
Date	04/18/2012		

**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

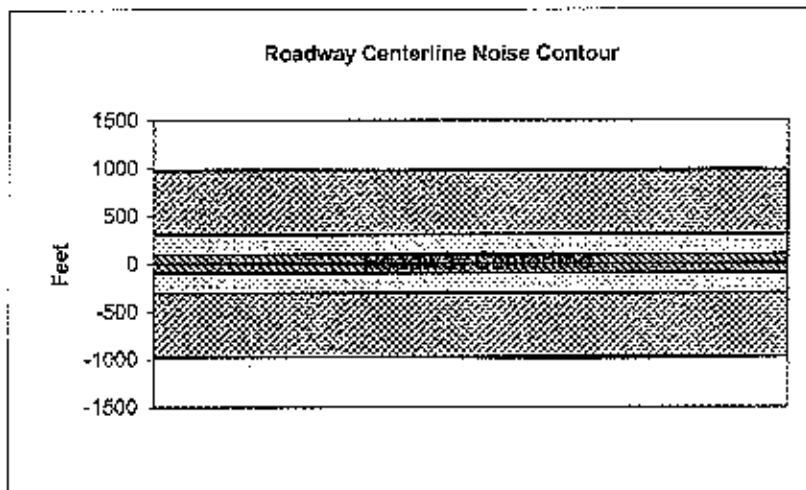
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	West of 580 Ramps		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	7746			
Receiver Barrier Dist:	0	Peak Hour Traffic:	774.6			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.1	60.8	59.0	63.0	69.1	69.2
Medium Trucks:	60.3	52.4	46.0	42.9	52.2	52.5
Heavy Trucks:	64.8	53.0	44.1	43.8	54.0	54.2
Vehicle Noise:	67.2	62.2	59.4	63.1	69.3	69.4

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	977
65 dBA	309
70 dBA	98
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

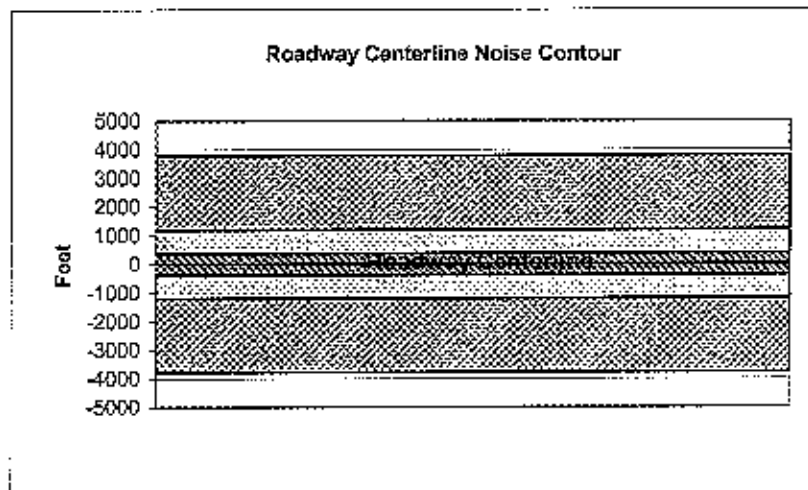
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	South of 11th		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	29986
Receiver Barrier Dist:	0	Peak Hour Traffic:	2998.6
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0505
			0.0752
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	66.6	64.8	68.7	74.9	75.0
Medium Trucks:	66.1	58.2	51.8	48.7	58.0	58.2
Heavy Trucks:	70.6	58.8	49.8	49.6	59.8	60.0
Vehicle Noise:	73.0	68.0	65.1	68.8	75.1	75.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3784
65 dBA	1197
70 dBA	378
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

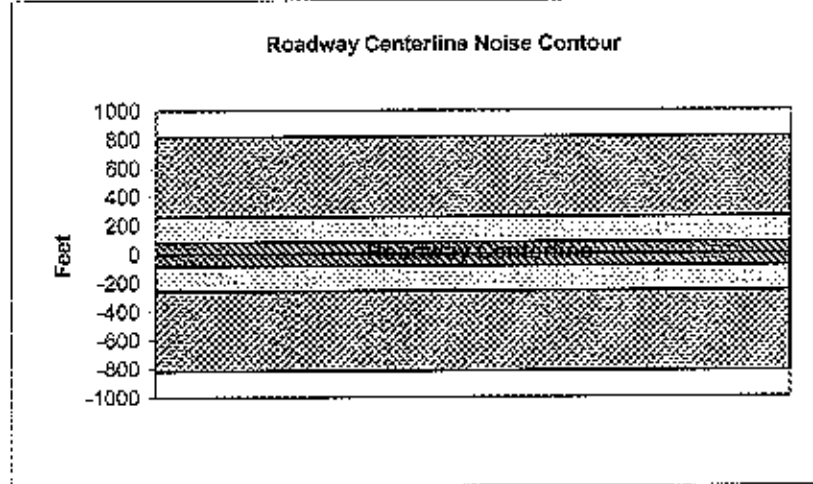
Project Name: Ellis Specific Plan Scenario: Existing
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Corral Hollow Road
Road Segment: East of 580 Ramps

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:	0			
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	6482			
Receiver Barrier Dist:	0		Peak Hour Traffic:	648.2			
Centerline Dist. To Observer:	100		Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0		Centerline Separation:	24			
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.3	60.1	58.2	62.2	68.3	68.4
Medium Trucks:	59.6	51.6	45.2	42.2	51.4	51.7
Heavy Trucks:	64.1	52.3	43.3	43.0	53.3	53.4
Vehicle Noise:	66.4	61.4	58.6	62.3	68.5	68.7

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	818
65 dBA	259
70 dBA	82
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	South of Grant		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	1077.8
Receiver Barrier Dist:	0	Peak Hour Traffic:	1077.8
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5	NOISE INPUTS	
Road Elevation:	0	Site conditions HARD SITE	
Observer Height (above grade):	0	FLEET MIX	
Barrier Height:	0	Type	Day
Rt View: 90	Lft View: -90	Evening	Night
		Daily	
		Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
			0.0284
			0.0806
			0.0074
NOISE SOURCE ELEVATIONS (Feet)			
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	62.2	60.3	64.3	70.4	70.5
Medium Trucks:	61.7	53.7	47.3	44.3	53.5	53.8
Heavy Trucks:	66.2	54.4	45.4	45.1	55.4	55.5
Vehicle Noise:	68.5	63.5	60.7	64.4	70.7	70.8

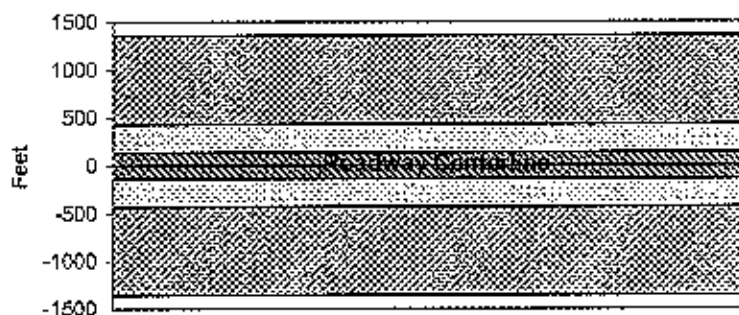
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1358
65 dBA	430
70 dBA	136
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

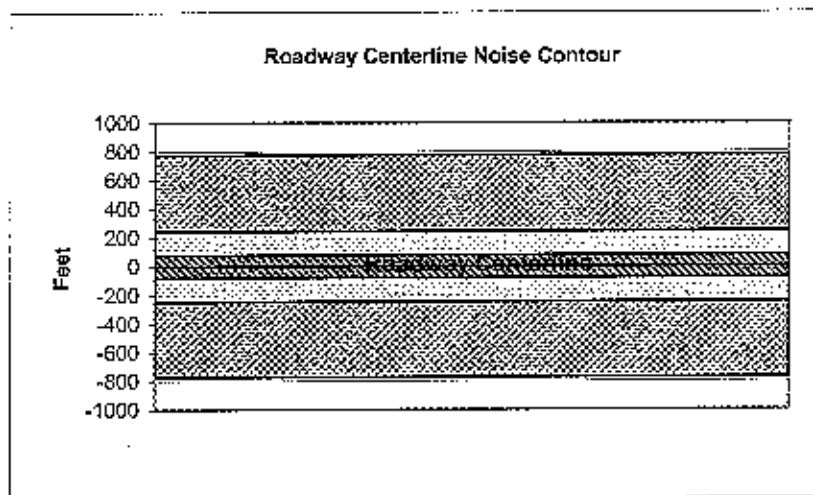
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	North of Linnie		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	6153
Receiver Barrier Dist:	0	Peak Hour Traffic:	615.3
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	24
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
			0.0284
			0.0806
			0.0074
NOISE SOURCE ELEVATIONS (Feet)			
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.1	59.8	58.0	62.0	68.1	68.2
Medium Trucks:	59.3	51.4	45.0	41.9	51.2	51.5
Heavy Trucks:	63.8	52.0	43.1	42.8	53.0	53.2
Vehicle Noise:	66.2	61.2	58.4	62.1	68.3	68.4

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	776
65 dBA	245
70 dBA	78
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name: Ellis Specific Plan Scenario: Existing
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Corral Hollow Road
Road Segment: North of Valpico

PROJECT DATA			SITE DATA					
Centerline Dist to Barrier	0		Road Grade:	0				
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	8785				
Receiver Barrier Dist:	0		Peak Hour Traffic:	878.5				
Centerline Dist. To Observer:	100		Vehicle Speed:	45				
Barrier Near Lane CL Dist:	0		Centerline Separation:	24				
Barrier Far lane CL Dist:	0		NOISE INPUTS					
Pad Elevation:	0.5		Site conditions HARD SITE					
Road Elevation:	0		FLEET MIX					
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily	
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742	
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184	
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074	
Autos:	0							
Medium Trucks:	2.3							
Heavy Trucks:	8							

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.6	61.4	59.5	63.5	69.6	69.8
Medium Trucks:	60.9	52.9	46.6	43.5	52.7	53.0
Heavy Trucks:	65.4	53.6	44.6	44.4	54.6	54.7
Vehicle Noise:	67.7	62.7	59.9	63.6	69.9	70.0

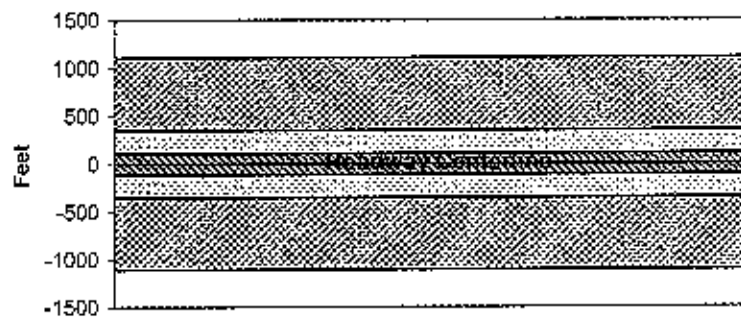
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1109
65 dBA	351
70 dBA	111
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

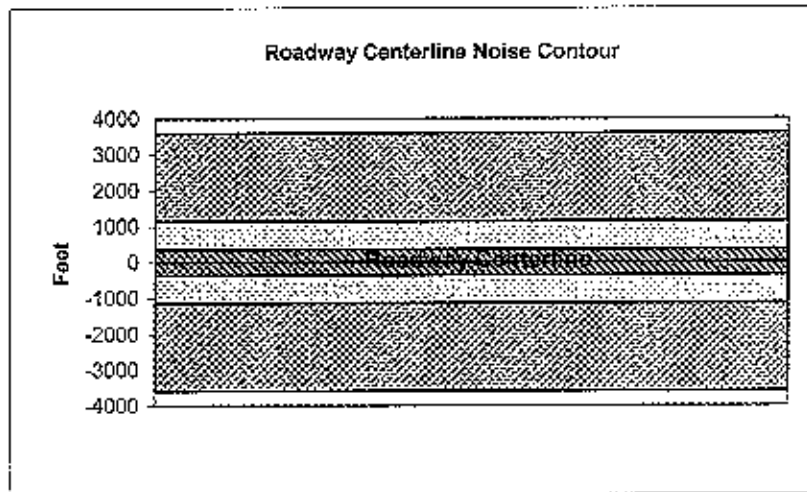
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	South of 11th		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	28503
Receiver Barrier Dist:	0	Peak Hour Traffic:	2850.3
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Daily	
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.6	66.4	64.5	68.5	74.7	74.8
Medium Trucks:	65.9	57.9	51.6	48.5	57.7	58.0
Heavy Trucks:	70.4	58.6	49.6	49.4	59.6	59.8
Vehicle Noise:	72.7	67.7	64.9	68.6	74.9	75.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3597
65 dBA	1138
70 dBA	360
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

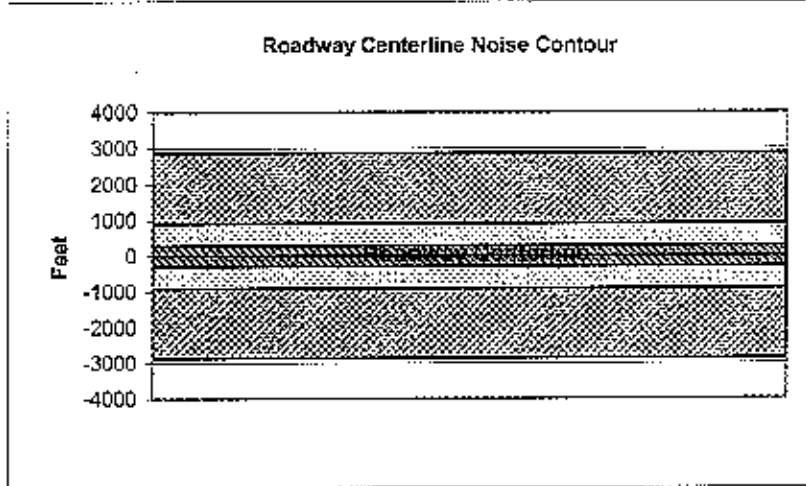
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	South of Grant		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2271.7			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2271.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	30			
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.6	65.4	63.5	67.5	73.7	73.8
Medium Trucks:	64.9	57.0	50.6	47.5	56.8	57.0
Heavy Trucks:	69.4	57.6	48.6	48.4	58.6	58.8
Vehicle Noise:	71.8	66.7	63.9	67.6	73.9	74.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2864
65 dBA	906
70 dBA	286
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

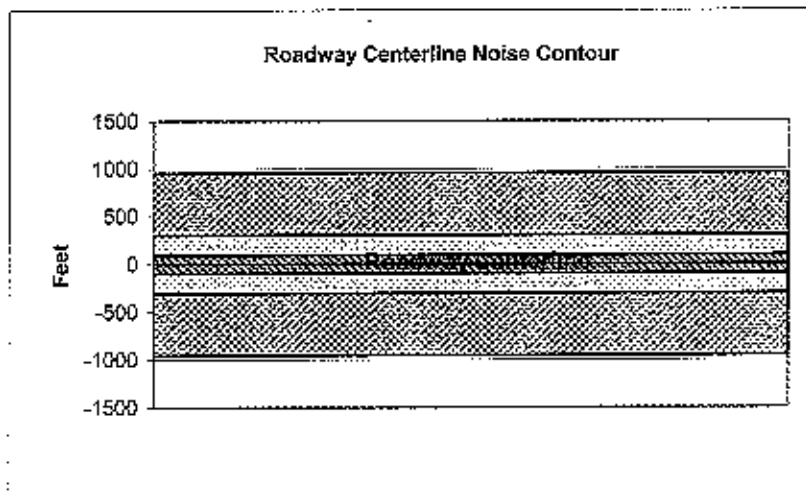
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	West of 580 Ramps		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	7592
Receiver Barrier Dist:	0	Peak Hour Traffic:	759.2
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	24
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos: 0		Auto	0.777
Medium Trucks: 2.3		Med. Truck	0.8743
Heavy Trucks: 8		Heavy Truck	0.891
			0.127
			0.0505
			0.0752
			0.0806
			0.9742
			0.0184
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.0	60.8	58.9	62.9	69.0	69.1
Medium Trucks:	60.2	52.3	45.9	42.9	52.1	52.4
Heavy Trucks:	64.8	53.0	44.0	43.7	54.0	54.1
Vehicle Noise:	67.1	62.1	59.3	63.0	69.2	69.3

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	957
65 dBA	303
70 dBA	96
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

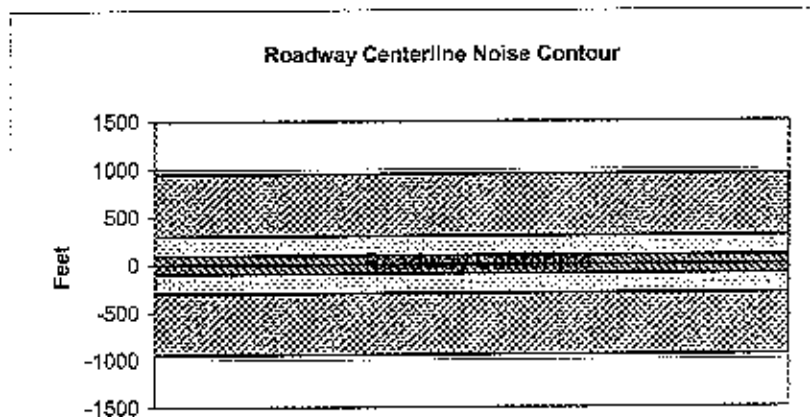
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	South of Valpico		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	7527
Receiver Barrier Dist:	0	Peak Hour Traffic:	752.7
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	24
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.091
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.9	60.7	58.9	62.8	69.0	69.1
Medium Trucks:	60.2	52.3	45.9	42.8	52.1	52.3
Heavy Trucks:	64.7	52.9	43.9	43.7	53.9	54.1
Vehicle Noise:	67.1	62.1	59.2	62.9	69.2	69.3

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	950
65 dBA	300
70 dBA	95
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

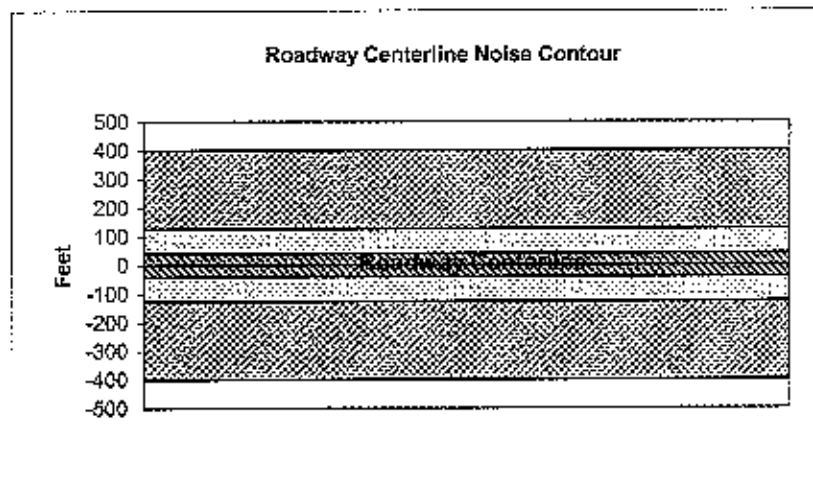
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Valpico		
Road Segment:	West of Corral Hollow		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade: 0				
Barrier (0=wall, 1= berm):	0	Average Daily Traffic: 6353				
Receiver Barrier Dist:	0	Peak Hour Traffic: 635.3				
Centerline Dist. To Observer:	100	Vehicle Speed: 35				
Barrier Near Lane CL Dist:	0	Centerline Separation: 12				
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.3	57.1	55.2	59.2	65.3	65.4
Medium Trucks:	58.0	50.1	43.7	40.6	49.9	50.1
Heavy Trucks:	63.2	51.4	42.4	42.2	52.8	52.9
Vehicle Noise:	65.6	59.1	55.8	59.4	65.7	65.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	401
65 dBA	127
70 dBA	40
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

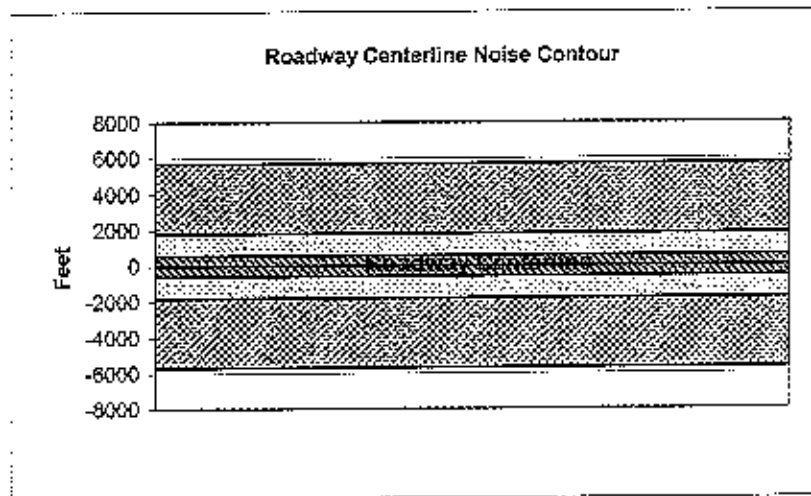
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	11th		
Road Segment:	East of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	25742
Receiver Barrier Dist:	0	Peak Hour Traffic:	2574.2
Centerline Dist. To Observer:	100	Vehicle Speed:	65
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos: 0		Auto	0.777
Medium Trucks: 2.3		Med. Truck	0.8743
Heavy Trucks: 8		Heavy Truck	0.891

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.6	68.4	66.5	70.5	76.6	76.7
Medium Trucks:	66.7	58.8	52.4	49.3	58.6	58.8
Heavy Trucks:	70.7	58.9	49.9	49.6	59.6	59.7
Vehicle Noise:	73.0	69.3	66.8	70.6	76.8	76.9

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	5699
65 dBA	1802
70 dBA	570
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

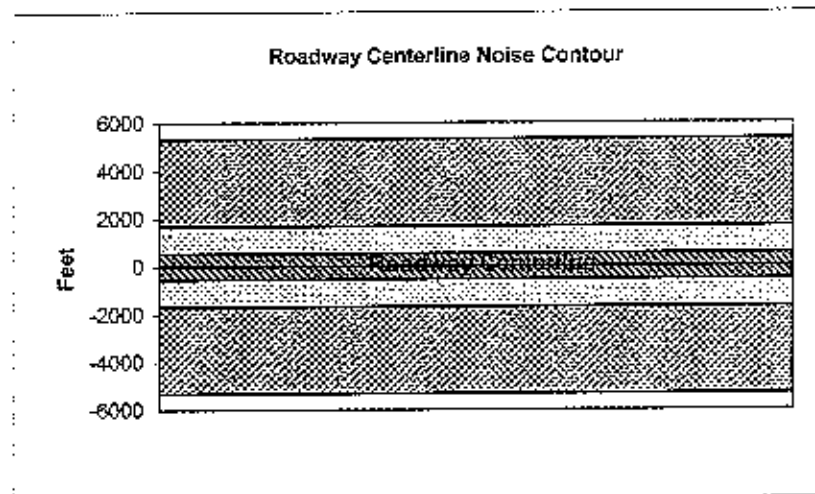
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	11th		
Road Segment:	West of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2409.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	2409.1
Centerline Dist. To Observer:	100	Vehicle Speed:	65
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0752
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	68.1	66.2	70.2	76.3	76.5
Medium Trucks:	66.4	68.5	52.1	49.0	58.3	58.6
Heavy Trucks:	70.4	58.6	49.6	49.3	59.3	59.4
Vehicle Noise:	72.7	69.0	66.5	70.3	76.5	76.6

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	5331
65 dBA	1686
70 dBA	533
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

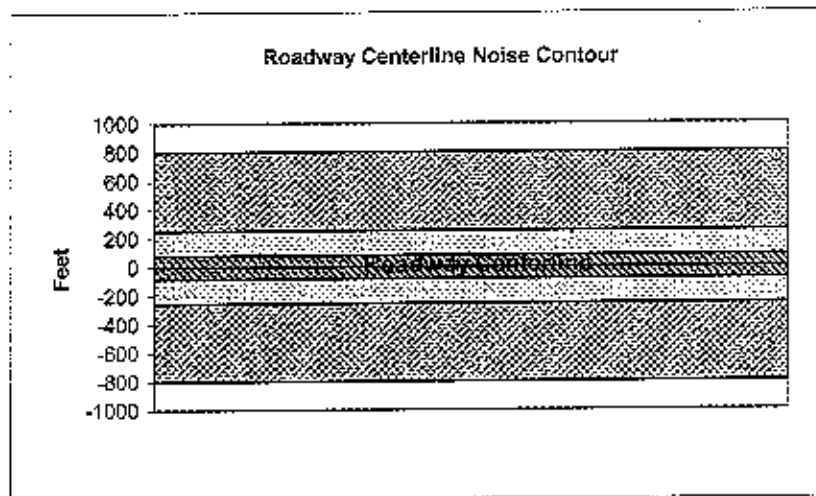
Project Name: Ellis Specific Plan Scenario: Existing
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Byron
Road Segment: North of Grant Line

PROJECT DATA				SITE DATA				
Centerline Dist to Barrier	0			Road Grade:	0			
Barrier (0=wall, 1= berm):	0			Average Daily Traffic:	12739			
Receiver Barrier Dist:	0			Peak Hour Traffic:	1273.9			
Centerline Dist. To Observer:	100			Vehicle Speed:	35			
Barrier Near Lane CL Dist:	0			Centerline Separation:	12			
Barrier Far lane CL Dist:	0			NOISE INPUTS				
Pad Elevation:	0.5			Site conditions HARD SITE				
Road Elevation:	0			FLEET MIX				
Observer Height (above grade):	0			Type	Day	Evening	Night	Daily
Barrier Height:	0			Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View:	-90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)				Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0							
Medium Trucks:	2.3							
Heavy Trucks:	8							

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.3	60.1	58.2	62.2	68.3	68.5
Medium Trucks:	61.0	53.1	46.7	43.6	52.9	53.1
Heavy Trucks:	66.2	54.4	45.5	45.2	55.8	55.9
Vehicle Noise:	68.7	62.1	58.8	62.4	68.7	68.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	803
65 dBA	254
70 dBA	80
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

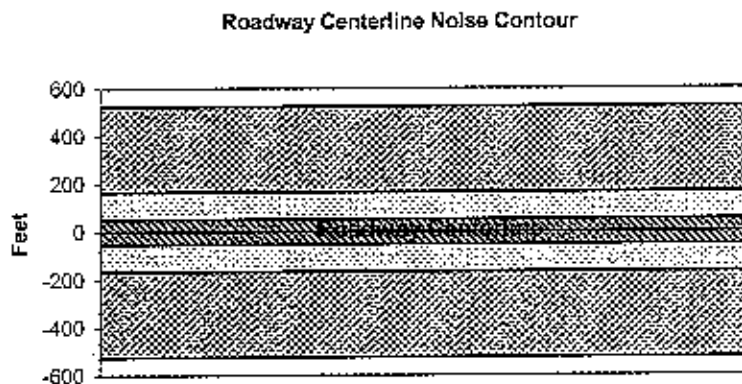
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Byron		
Road Segment:	South of Grant Line		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	8340
Receiver Barrier Dist:	0	Peak Hour Traffic:	834
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
			Daily
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.4	58.2	56.4	60.4	66.5	66.6
Medium Trucks:	59.2	51.2	44.8	41.8	51.0	51.3
Heavy Trucks:	64.4	52.6	43.6	43.3	53.9	54.1
Vehicle Noise:	66.8	60.2	57.0	60.5	66.8	67.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	526
65 dBA	166
70 dBA	53
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

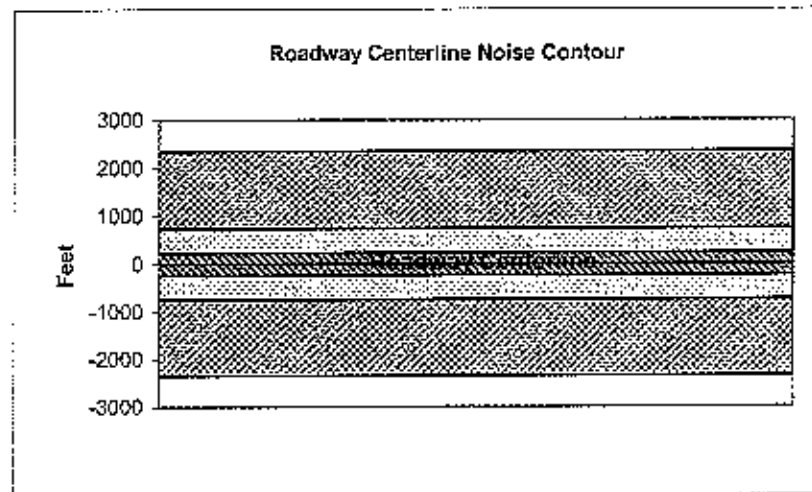
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Corral Hollow		

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade: 0				
Barrier (0=wall, 1= berm):	0		Average Daily Traffic: 1867.9				
Receiver Barrier Dist:	0		Peak Hour Traffic: 1867.9				
Centerline Dist. To Observer:	100		Vehicle Speed: 45				
Barrier Near Lane CL Dist:	0		Centerline Separation: 36				
Barrier Far Lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.7	64.5	62.6	66.6	72.7	72.8
Medium Trucks:	64.0	56.0	49.6	46.6	55.8	56.1
Heavy Trucks:	68.5	56.7	47.7	47.4	57.7	57.8
Vehicle Noise:	70.8	65.8	63.0	66.7	72.9	73.1

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2354
65 dBA	744
70 dBA	235
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

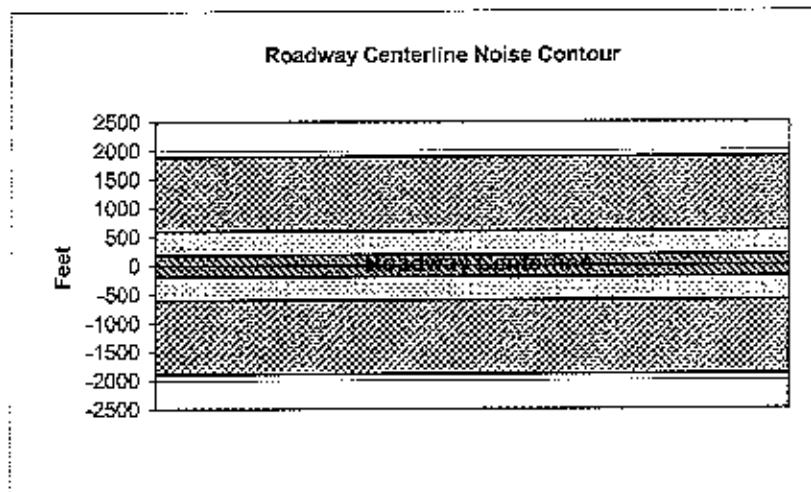
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Byron		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	15029
Receiver Barrier Dist:	0	Peak Hour Traffic:	1502.9
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0505
			0.0284
			0.0806
			0.0074

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	63.5	61.7	65.6	71.8	71.9
Medium Trucks:	63.0	55.1	48.7	45.6	54.9	55.1
Heavy Trucks:	67.5	55.7	46.8	46.5	56.7	56.9
Vehicle Noise:	69.9	64.9	62.0	65.7	72.0	72.1

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

Unmitigated	
60 dBA	1896
65 dBA	600
70 dBA	190
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

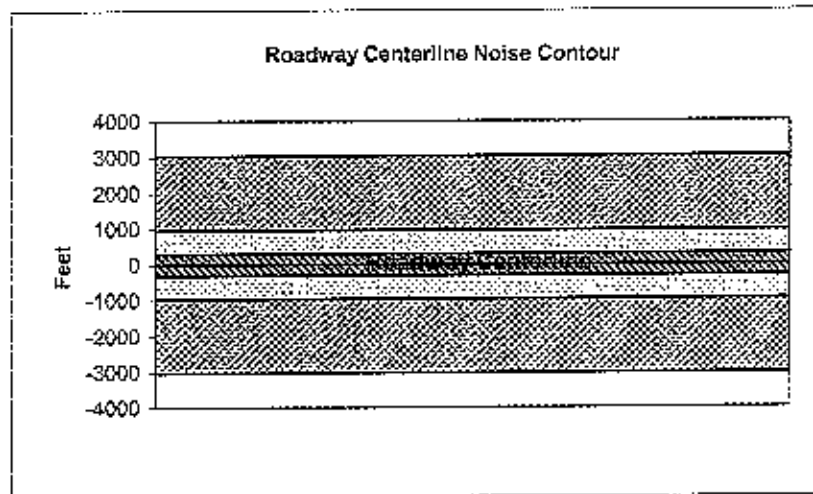
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	West of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2409.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	2409.1
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Daily	0.9742
Autos:	0		0.0505
Medium Trucks:	2.3		0.0752
Heavy Trucks:	8		0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.8	65.6	63.7	67.7	73.8	73.9
Medium Trucks:	65.1	57.1	50.7	47.7	56.9	57.2
Heavy Trucks:	69.6	57.8	48.8	48.5	58.8	58.9
Vehicle Noise:	71.9	66.9	64.1	67.8	74.0	74.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3039
65 dBA	961
70 dBA	304
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Byron		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	0
Receiver Barrier Dist:	0	Peak Hour Traffic:	0
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Medium Trucks:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Heavy Trucks:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Vehicle Noise:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!

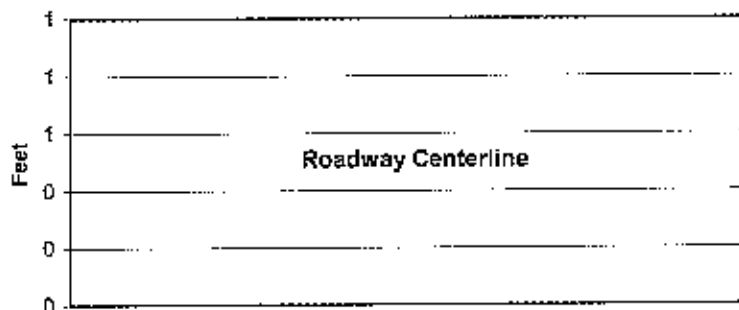
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	#NUM!
65 dBA	#NUM!
70 dBA	#NUM!
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

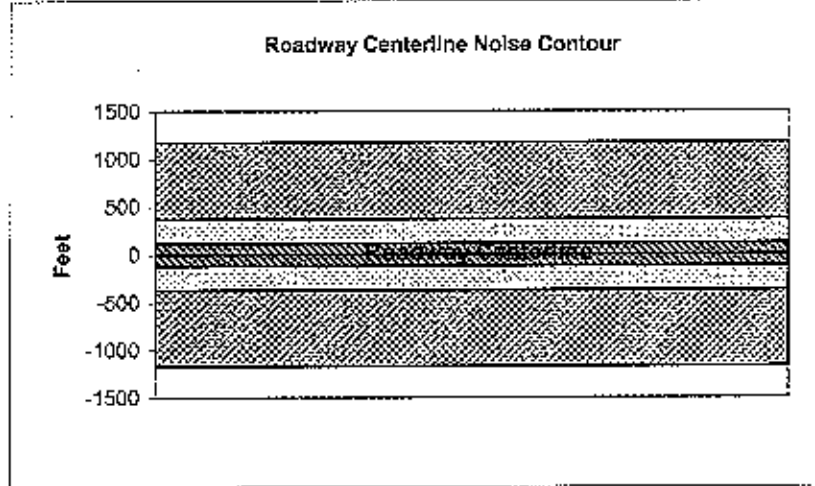
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Lammers		
Road Segment:	South of Schulte		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	930.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	930.1
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.1	61.9	60.0	64.0	70.1	70.2
Medium Trucks:	61.3	53.4	47.0	44.0	53.2	53.5
Heavy Trucks:	65.9	54.1	45.1	44.8	55.1	55.2
Vehicle Noise:	68.2	63.2	60.4	64.1	70.3	70.5

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1174
65 dBA	371
70 dBA	117
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

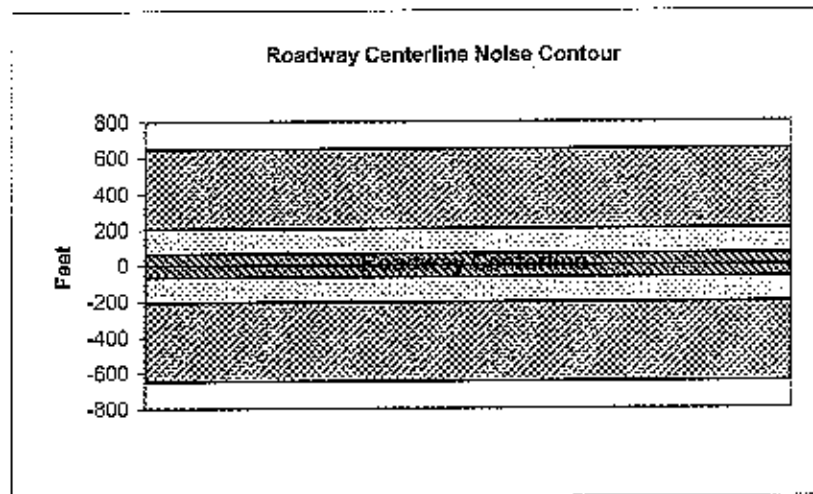
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Lammers		
Road Segment:	South of Schulte		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	5134
Receiver Barrier Dist:	0	Peak Hour Traffic:	513.4
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.5	59.3	57.4	61.4	67.5	67.6
Medium Trucks:	58.8	50.8	44.4	41.4	50.6	50.9
Heavy Trucks:	63.3	51.5	42.5	42.2	52.5	52.6
Vehicle Noise:	65.6	60.6	57.8	61.5	67.8	67.9

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

Unmitigated	
60 dBA	648
65 dBA	205
70 dBA	65
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Linnie		
Road Segment:	East of Corral		

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:		0		
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:		4650		
Receiver Barrier Dist:	0		Peak Hour Traffic:		465		
Centerline Dist. To Observer:	100		Vehicle Speed:		45		
Barrier Near Lane CL Dist:	0		Centerline Separation:		12		
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.1	58.8	57.0	61.0	67.1	67.2
Medium Trucks:	58.3	50.4	44.0	40.9	50.2	50.5
Heavy Trucks:	62.9	51.0	42.1	41.8	52.0	52.2
Vehicle Noise:	65.2	60.2	57.4	61.1	67.3	67.4

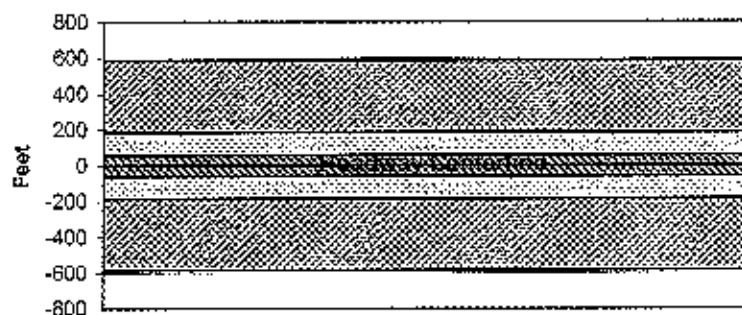
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	587
65 dBA	186
70 dBA	59
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

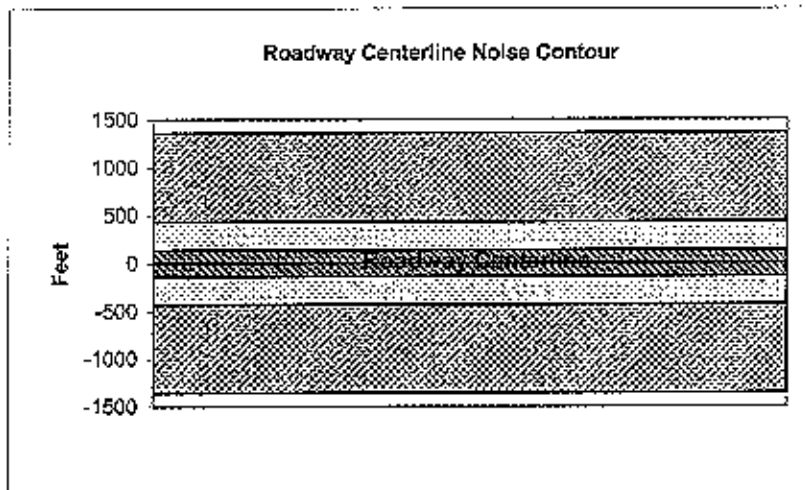
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Schulte		
Road Segment:	East of Lammers		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	10778
Receiver Barrier Dist:	0	Peak Hour Traffic:	1077.8
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Daily	
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.0505
Medium Trucks:	2.3	Heavy Truck	0.0284
Heavy Trucks:	8		0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.4	62.2	60.3	64.3	70.4	70.5
Medium Trucks:	61.7	53.7	47.3	44.3	53.5	53.8
Heavy Trucks:	66.2	54.4	45.4	45.1	55.4	55.5
Vehicle Noise:	68.5	63.5	60.7	64.4	70.7	70.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1358
65 dBA	430
70 dBA	136
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

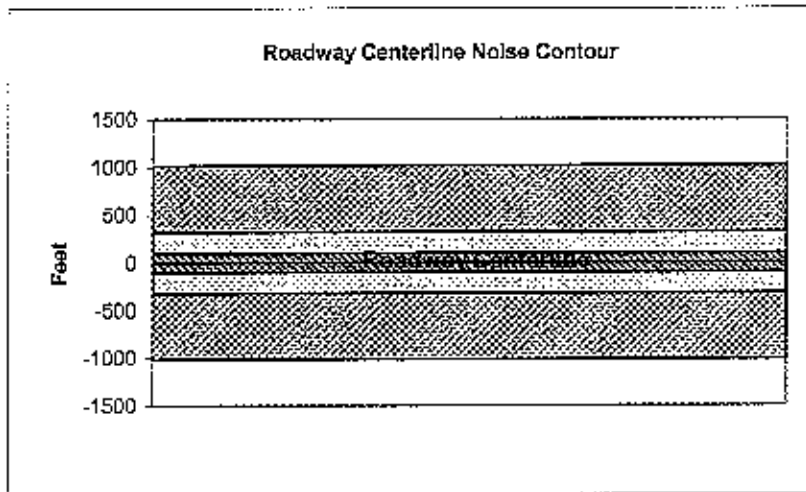
Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Schulte		
Road Segment:	East of Lammers		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	8050
Receiver Barrier Dist:	0	Peak Hour Traffic:	805
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
			0.0284
			0.0806
			0.0074
NOISE SOURCE ELEVATIONS (Feet)			
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.4	61.2	59.4	63.3	69.5	69.6
Medium Trucks:	60.7	52.8	46.4	43.3	52.6	52.9
Heavy Trucks:	65.2	53.4	44.5	44.2	54.4	54.6
Vehicle Noise:	67.6	62.6	59.7	63.5	69.7	69.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1015
65 dBA	321
70 dBA	102
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Existing
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Valpico		
Road Segment:	East of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	8669
Receiver Barrier Dist:	0	Peak Hour Traffic:	866.9
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Daily	0.9742
Autos:	0		0.0505
Medium Trucks:	2.3		0.0752
Heavy Trucks:	8		0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.6	58.4	56.5	60.5	66.7	66.8
Medium Trucks:	59.3	51.4	45.0	41.9	51.2	51.5
Heavy Trucks:	64.6	52.7	43.8	43.5	54.1	54.3
Vehicle Noise:	67.0	60.4	57.1	60.7	67.0	67.1

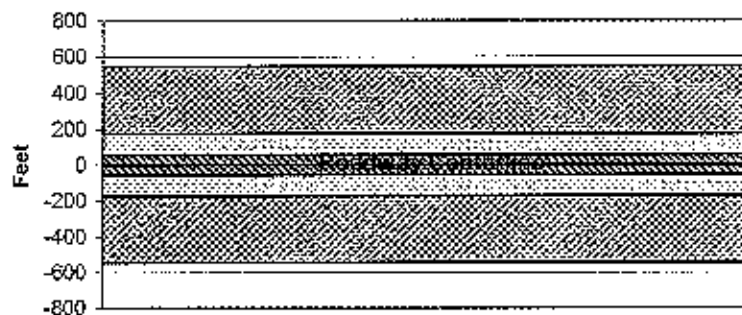
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	547
65 dBA	173
70 dBA	55
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

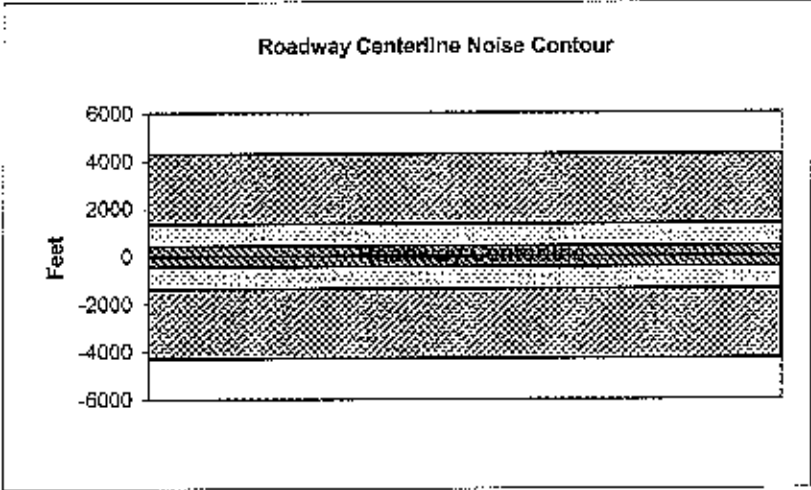
Project Name: Ellis Specific Plan	Scenario: Existing Plus Project
Analyst: Maria Cadiz	Job #: 40-100187
Roadway: Corral Hollow Road	
Road Segment: South of 11th	

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	34062
Receiver Barrier Dist:	0	Peak Hour Traffic:	3406.2
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
			Daily
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.4	67.2	65.3	69.3	75.4	75.5
Medium Trucks:	66.7	58.7	52.3	49.3	58.5	58.8
Heavy Trucks:	71.2	59.4	50.4	50.1	60.4	60.5
Vehicle Noise:	73.5	68.5	65.7	69.4	75.6	75.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	4295
65 dBA	1358
70 dBA	430
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

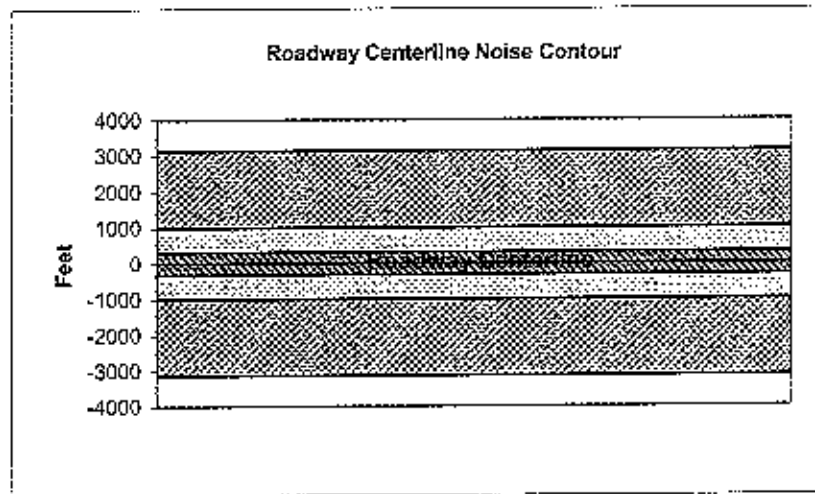
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	South of Grant		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2494.2
Receiver Barrier Dist:	0	Peak Hour Traffic:	2494.2
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
NOISE SOURCE ELEVATIONS (Feet)		Med. Truck	0.8743
Autos:	0	Heavy Truck	0.891
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.0	65.8	64.0	67.9	74.1	74.2
Medium Trucks:	65.3	57.4	51.0	47.9	57.2	57.4
Heavy Trucks:	69.8	58.0	49.0	48.8	59.0	59.2
Vehicle Noise:	72.2	67.2	64.3	68.0	74.3	74.4

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3148
65 dBA	995
70 dBA	315
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

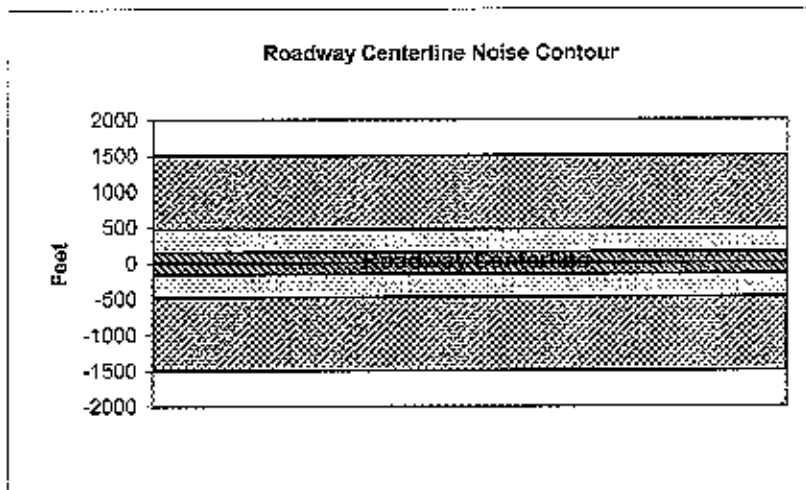
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	South of Grant		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	1188.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	1188.1
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Daily	0.9742
Autos:	0		0.0752
Medium Trucks:	2.3		0.0184
Heavy Trucks:	8		0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.8	62.6	60.7	64.7	70.9	71.0
Medium Trucks:	62.1	54.1	47.8	44.7	53.9	54.2
Heavy Trucks:	66.6	54.8	45.8	45.6	55.8	56.0
Vehicle Noise:	68.9	63.9	61.1	64.8	71.1	71.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1500
65 dBA	474
70 dBA	150
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

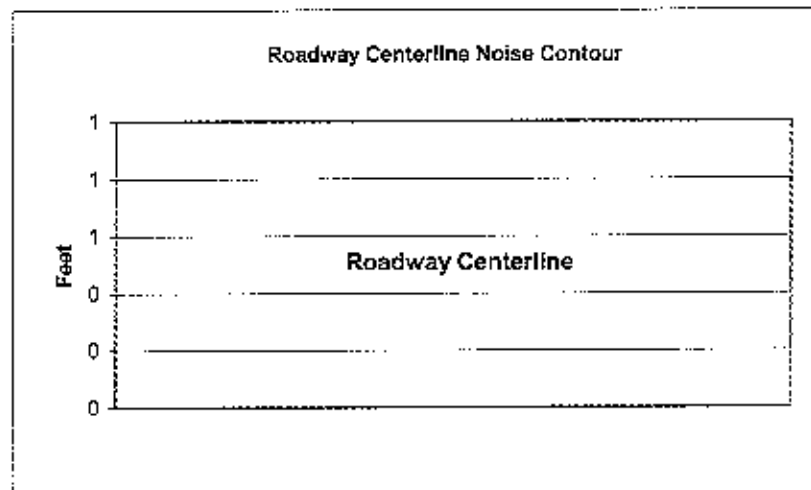
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Schulte		
Road Segment:	East of Lammers		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	0
Receiver Barrier Dist:	0	Peak Hour Traffic:	0
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Medium Trucks:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Heavy Trucks:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Vehicle Noise:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	#NUM!
65 dBA	#NUM!
70 dBA	#NUM!
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

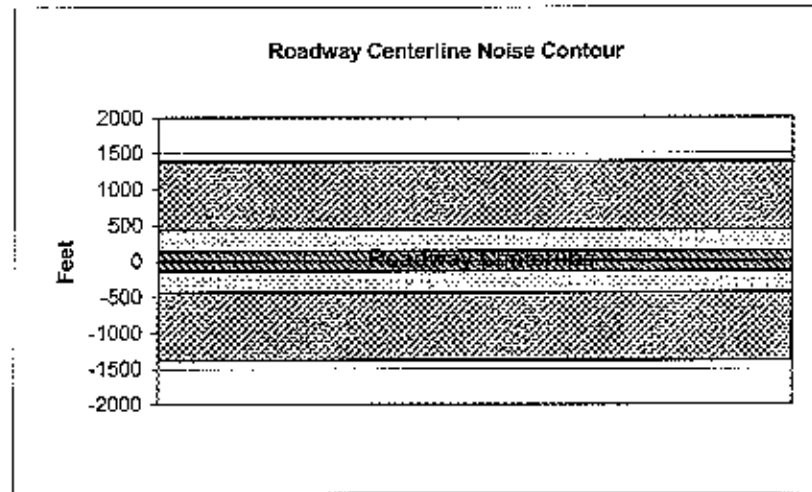
Project Name: Ellis Specific Plan	Scenario: Existing Plus Project
Analyst: Maria Cadiz	Job #: 40-100187
Roadway: Schulte	
Road Segment: East of Lammers	

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	1099.7
Receiver Barrier Dist:	0	Peak Hour Traffic:	1099.7
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day Evening Night Daily
Barrier Height:	0	Auto	0.777 0.127 0.96 0.9742
Rt View: 90 Lft View: -90		Med. Truck	0.8743 0.0505 0.0752 0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891 0.0284 0.0806 0.0074
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.8	62.6	60.7	64.7	70.8	71.0
Medium Trucks:	62.1	54.1	47.8	44.7	53.9	54.2
Heavy Trucks:	66.6	54.8	45.8	45.5	55.8	55.9
Vehicle Noise:	68.9	63.9	61.1	64.8	71.1	71.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1386
65 dBA	438
70 dBA	139
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

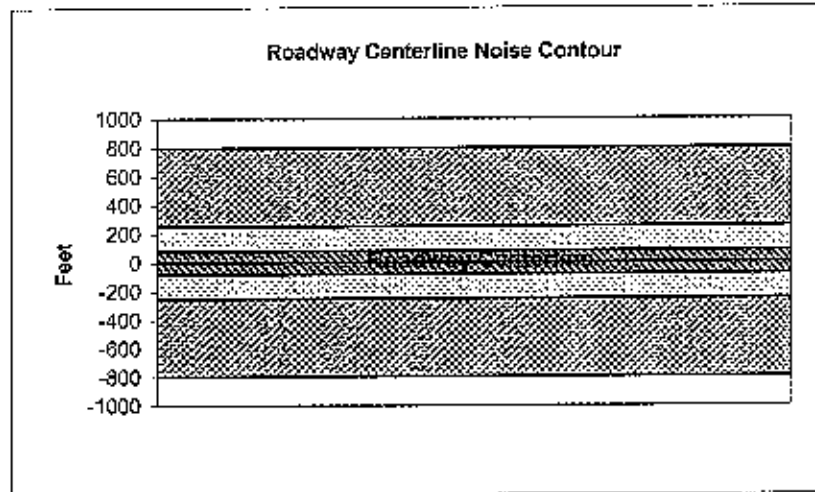
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Lammers		
Road Segment:	South of Schulte		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	6315
Receiver Barrier Dist:	0	Peak Hour Traffic:	631.5
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
			Daily
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.4	60.2	58.3	62.3	68.4	68.5
Medium Trucks:	59.7	51.7	45.3	42.3	51.5	51.8
Heavy Trucks:	64.2	52.4	43.4	43.1	53.4	53.5
Vehicle Noise:	66.5	61.5	58.7	62.4	68.7	68.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	797
65 dBA	252
70 dBA	80
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

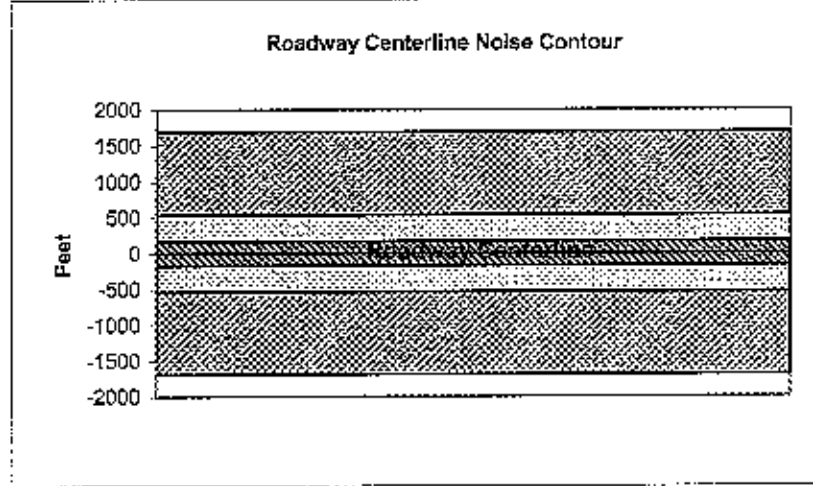
Project Name: Ellis Specific Plan Scenario: Existing Plus Project
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Lammers
Road Segment: South of Schulte

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade: 0				
Barrier (0=wall, 1= berm):	0	Average Daily Traffic: 13429				
Receiver Barrier Dist:	0	Peak Hour Traffic: 1342.9				
Centerline Dist. To Observer:	100	Vehicle Speed: 45				
Barrier Near Lane CL Dist:	0	Centerline Separation: 12				
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	63.5	61.6	65.6	71.7	71.8
Medium Trucks:	62.9	55.0	48.6	45.6	54.8	55.1
Heavy Trucks:	67.5	55.7	46.7	46.4	56.7	56.8
Vehicle Noise:	69.8	64.8	62.0	65.7	71.9	72.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1693
65 dBA	535
70 dBA	169
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

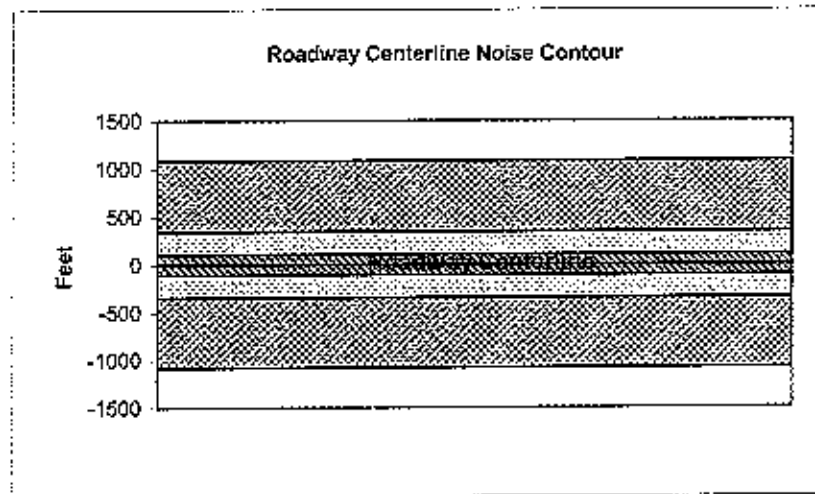
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Linnie		
Road Segment:	East of Corral		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	859.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	859.1
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	52.7	61.5	59.6	63.6	69.8	69.9
Medium Trucks:	61.0	53.1	46.7	43.6	52.9	53.1
Heavy Trucks:	65.5	53.7	44.7	44.5	54.7	54.9
Vehicle Noise:	67.9	62.8	60.0	63.7	70.0	70.1

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1083
65 dBA	342
70 dBA	108
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

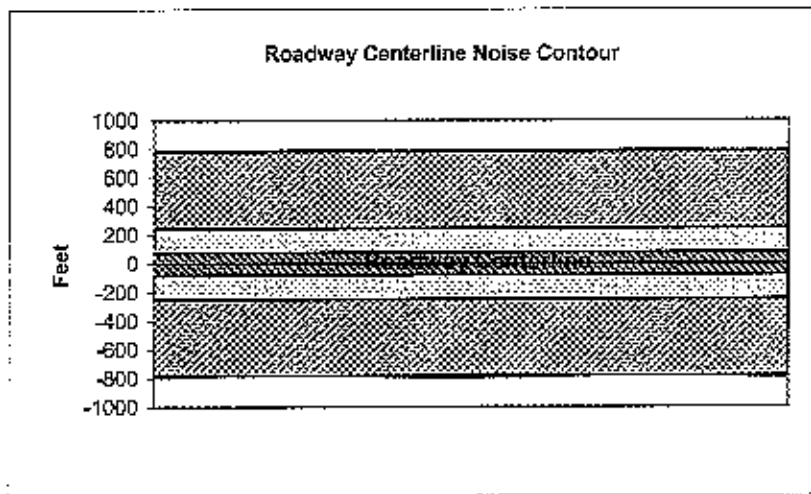
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Valpico		
Road Segment:	East of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	12436
Receiver Barrier Dist:	0	Peak Hour Traffic:	1243.6
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.2	60.0	58.1	62.1	68.2	68.3
Medium Trucks:	60.9	53.0	46.6	43.5	52.8	53.0
Heavy Trucks:	66.1	54.3	45.3	45.1	55.7	55.8
Vehicle Noise:	68.6	62.0	58.7	62.3	68.6	68.7

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	785
65 dBA	248
70 dBA	78
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

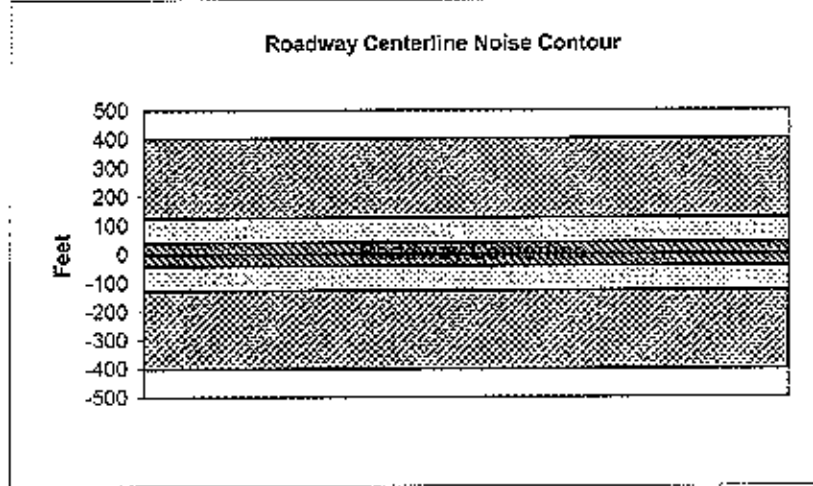
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Valpico		
Road Segment:	West of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	6366
Receiver Barrier Dist:	0	Peak Hour Traffic:	636.6
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Daily	0.9742
Autos: 0			0.0184
Medium Trucks: 2.3			0.0074
Heavy Trucks: 8			

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.3	57.1	55.2	59.2	65.3	65.4
Medium Trucks:	58.0	50.1	43.7	40.6	49.9	50.1
Heavy Trucks:	63.2	51.4	42.4	42.2	52.8	52.9
Vehicle Noise:	65.7	59.1	55.8	59.4	65.7	65.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	401
65 dBA	127
70 dBA	40
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

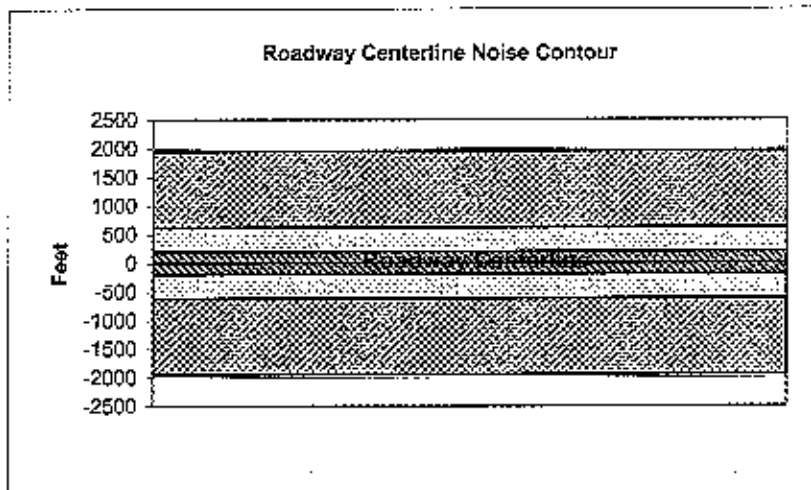
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Byron		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade: 0				
Barrier (0=wall, 1= berm):	0	Average Daily Traffic: 1546.1				
Receiver Barrier Dist:	0	Peak Hour Traffic: 1546.1				
Centerline Dist. To Observer:	100	Vehicle Speed: 45				
Barrier Near Lane CL Dist:	0	Centerline Separation: 36				
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0506	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.9	63.6	61.8	65.8	71.9	72.0
Medium Trucks:	63.1	55.2	48.8	45.7	55.0	55.3
Heavy Trucks:	67.6	55.8	46.9	46.6	56.8	57.0
Vehicle Noise:	70.0	65.0	62.2	65.9	72.1	72.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1949
65 dBA	616
70 dBA	195
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

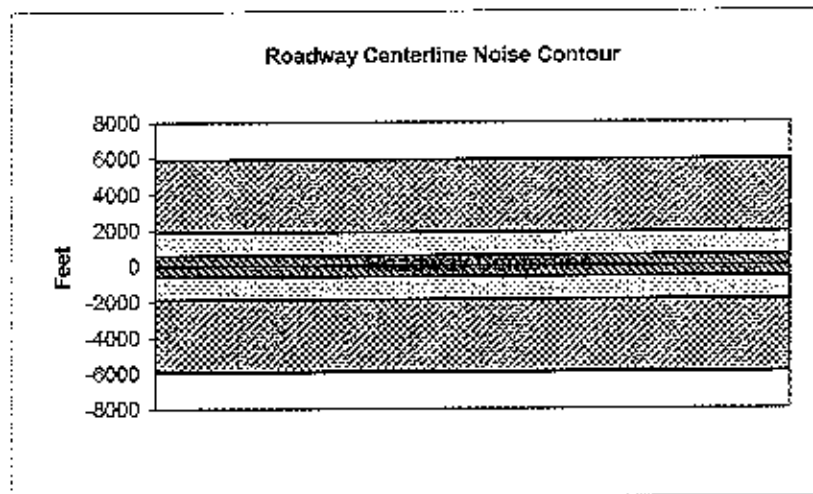
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	11th		
Road Segment:	West of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	26742
Receiver Barrier Dist:	0	Peak Hour Traffic:	2674.2
Centerline Dist. To Observer:	100	Vehicle Speed:	55
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.7	68.5	66.7	70.7	76.8	76.9
Medium Trucks:	66.9	58.9	52.8	49.5	58.7	59.0
Heavy Trucks:	70.8	59.0	50.1	49.8	59.7	59.9
Vehicle Noise:	73.1	69.5	66.9	70.7	76.9	77.1

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	5913
65 dBA	1870
70 dBA	591
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

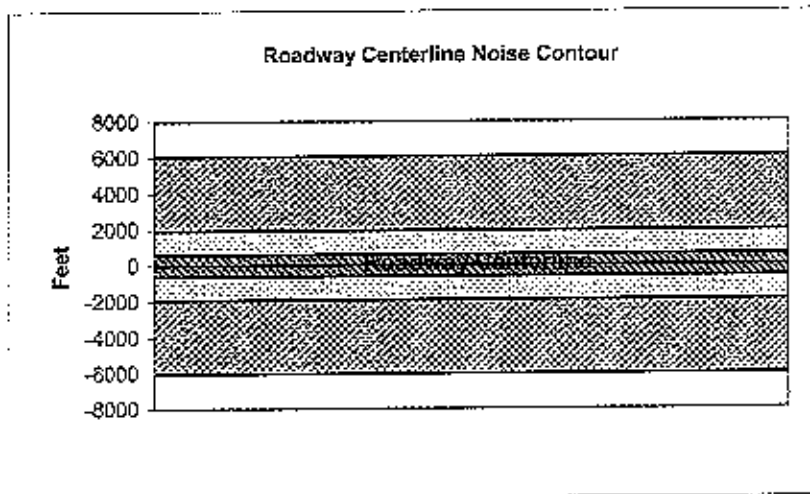
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	11th		
Road Segment:	East of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2741.9
Receiver Barrier Dist:	0	Peak Hour Traffic:	2741.9
Centerline Dist. To Observer:	100	Vehicle Speed:	55
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.9	68.6	66.8	70.8	76.9	77.0
Medium Trucks:	67.0	59.0	52.7	49.6	58.8	59.1
Heavy Trucks:	70.9	59.1	50.2	49.9	59.8	60.0
Vehicle Noise:	73.3	69.6	67.1	70.8	77.1	77.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	6065
65 dBA	1918
70 dBA	606
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name: Ellis Specific Plan Scenario: Existing Plus Project
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Grant Line
Road Segment: East of Corral Hollow

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:		0		
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:		19389		
Receiver Barrier Dist:	0		Peak Hour Traffic:		1938.9		
Centerline Dist. To Observer:	100		Vehicle Speed:		45		
Barrier Near Lane CL Dist:	0		Centerline Separation:		36		
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.8	64.6	62.8	66.7	72.9	73.0
Medium Trucks:	64.1	56.2	49.8	46.7	56.0	56.3
Heavy Trucks:	68.6	56.8	47.9	47.6	57.8	58.0
Vehicle Noise:	71.0	66.0	63.1	66.9	73.1	73.2

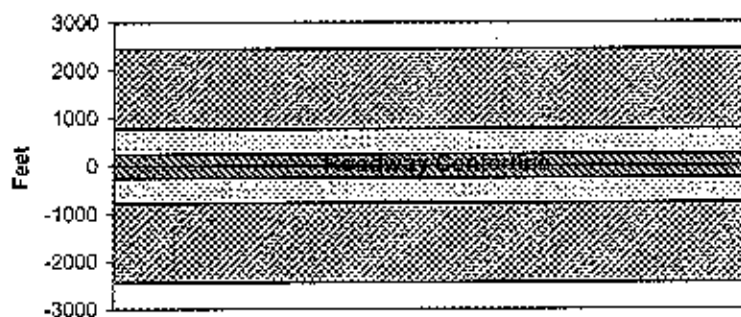
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	2448
65 dBA	774
70 dBA	245
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	West of Corral Hollow		

PROJECT DATA				SITE DATA				
Centerline Dist to Barrier	0			Road Grade:	0			
Barrier (0=wall, 1= berm):	0			Average Daily Traffic:	2450.4			
Receiver Barrier Dist:	0			Peak Hour Traffic:	2450.4			
Centerline Dist. To Observer:	100			Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0			Centerline Separation:	36			
Barrier Far lane CL Dist:	0			NOISE INPUTS				
Pad Elevation:	0.5			Site conditions HARD SITE				
Road Elevation:	0			FLEET MIX				
Observer Height (above grade):	0			Type	Day	Evening	Night	Daily
Barrier Height:	0			Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90			Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)				Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0							
Medium Trucks:	2.3							
Heavy Trucks:	8							

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.9	65.6	63.8	67.8	73.9	74.0
Medium Trucks:	65.1	57.2	50.8	47.7	57.0	57.3
Heavy Trucks:	69.6	57.8	48.9	48.6	58.8	59.0
Vehicle Noise:	72.0	67.0	64.2	67.9	74.1	74.2

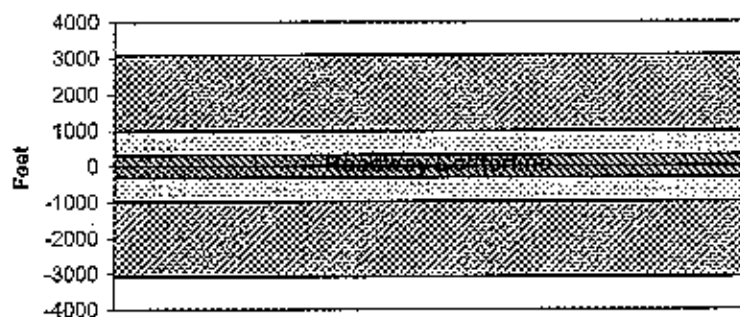
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	3089
65 dBA	977
70 dBA	309
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

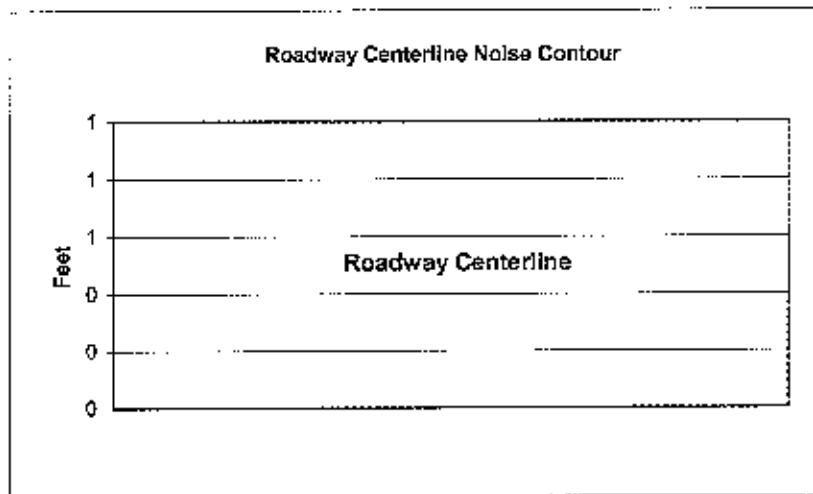
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Byron		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	0
Receiver Barrier Dist:	0	Peak Hour Traffic:	0
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5	NOISE INPUTS	
Road Elevation:	0	Site conditions HARD SITE	
Observer Height (above grade):	0	FLEET MIX	
Barrier Height:	0	Type	Day
Rt View: 90	Lft View: -90	Evening	Night
		Daily	
		Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
			0.0284
			0.0806
			0.0074
NOISE SOURCE ELEVATIONS (Feet)			
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Medium Trucks:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Heavy Trucks:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!
Vehicle Noise:	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!	#NUM!

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	#NUM!
65 dBA	#NUM!
70 dBA	#NUM!
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-103
Traffic Noise Prediction Model (CALVENO)**

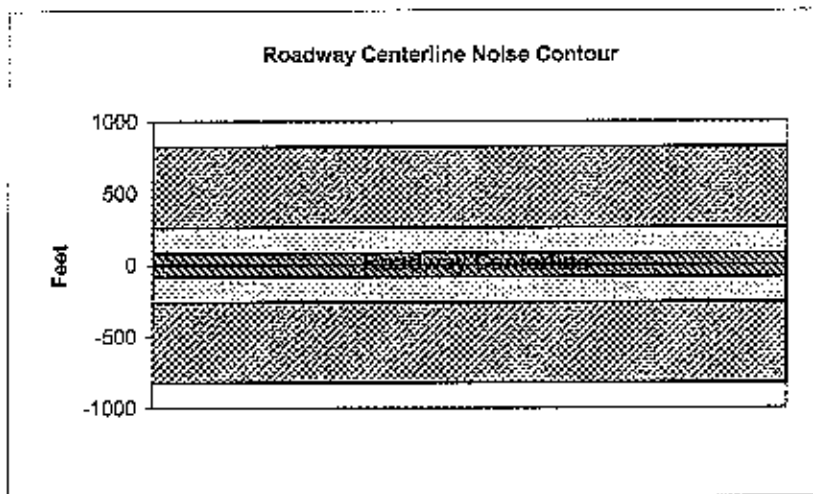
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Byron		
Road Segment:	North of Grant Line		

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade: 0				
Barrier (0=wall, 1= berm):	0		Average Daily Traffic: 13055				
Receiver Barrier Dist:	0		Peak Hour Traffic: 1305.5				
Centerline Dist. To Observer:	100		Vehicle Speed: 35				
Barrier Near Lane CL Dist:	0		Centerline Separation: 12				
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	51.4	60.2	58.3	62.3	68.4	68.6
Medium Trucks:	61.1	63.2	48.8	43.7	53.0	53.3
Heavy Trucks:	66.3	54.5	45.6	45.3	55.9	56.0
Vehicle Noise:	68.8	62.2	58.9	62.5	68.8	68.9

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	823
65 dBA	260
70 dBA	82
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

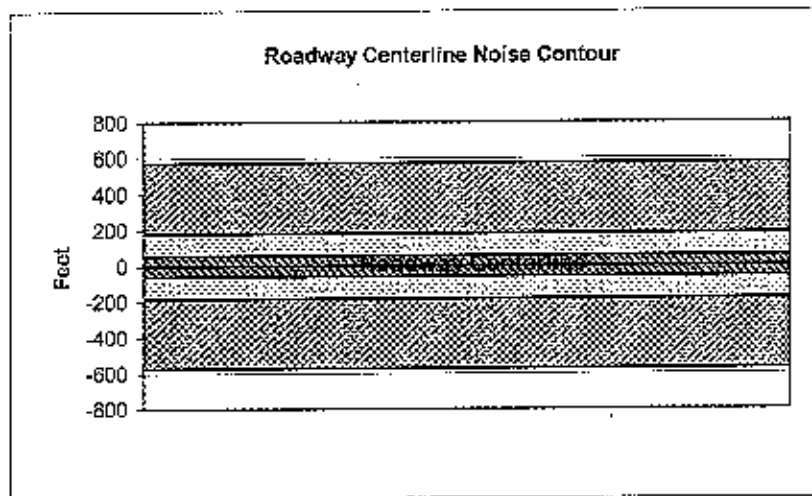
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Byron		
Road Segment:	South of Grant Line		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	9088
Receiver Barrier Dist:	0	Peak Hour Traffic:	908.8
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.8	58.6	56.7	60.7	66.9	67.0
Medium Trucks:	59.5	51.6	45.2	42.2	51.4	51.7
Heavy Trucks:	64.8	53.0	44.0	43.7	54.3	54.5
Vehicle Noise:	67.2	60.6	57.3	60.9	67.2	67.3

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	574
65 dBA	181
70 dBA	57
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

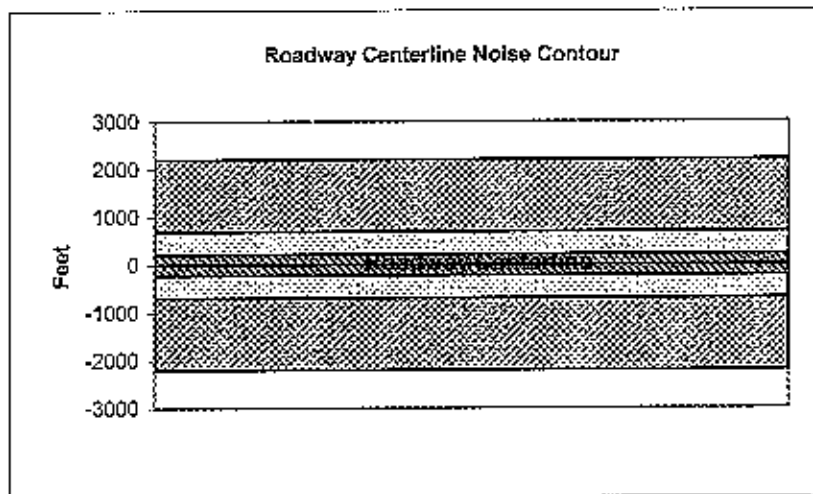
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	South of Valpico		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	17480			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1748			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.6	64.4	62.5	66.5	72.6	72.7
Medium Trucks:	63.9	55.9	49.5	46.5	55.7	56.0
Heavy Trucks:	68.4	56.6	47.6	47.3	57.6	57.7
Vehicle Noise:	70.7	65.7	62.9	66.6	72.9	73.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2207
65 dBA	698
70 dBA	221
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

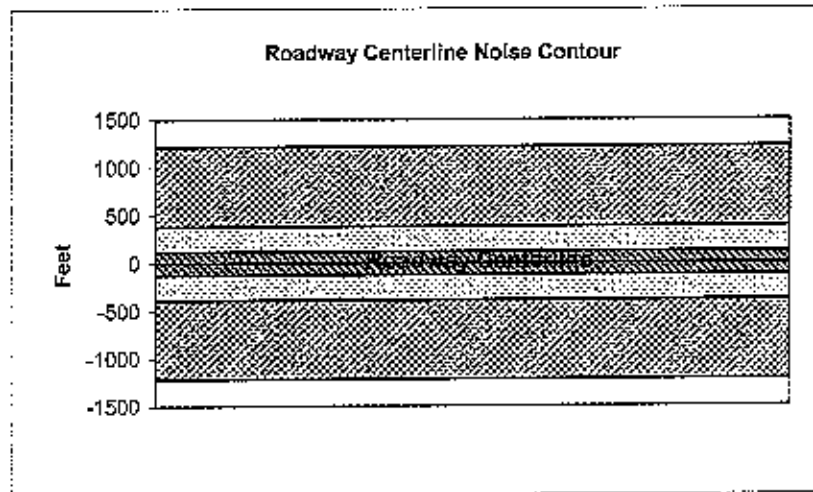
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	East of 580 Ramps		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	9649
Receiver Barrier Dist:	0	Peak Hour Traffic:	964.9
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	24
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
			Daily
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos: 0		Med. Truck	0.8743
Medium Trucks: 2.3		Heavy Truck	0.891
Heavy Trucks: 8			

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.0	61.8	59.9	63.9	70.1	70.2
Medium Trucks:	61.3	53.3	47.0	43.9	53.1	53.4
Heavy Trucks:	65.8	54.0	45.0	44.8	55.0	55.1
Vehicle Noise:	68.1	63.1	60.3	64.0	70.3	70.4

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

Unmitigated	
60 dBA	1218
65 dBA	385
70 dBA	122
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

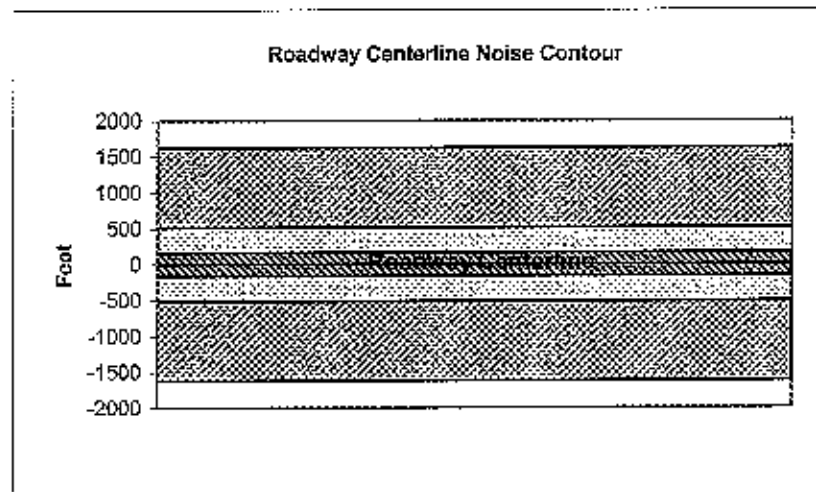
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	West of 580 Ramps		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	12887			
Receiver Barrier Dist:	0	Peak Hour Traffic:	1288.7			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	24			
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.3	63.1	61.2	65.2	71.3	71.4
Medium Trucks:	62.5	54.6	48.2	45.2	54.4	54.7
Heavy Trucks:	67.1	55.3	46.3	46.0	56.3	56.4
Vehicle Noise:	69.4	64.4	61.6	65.3	71.5	71.6

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
50 dBA	1625
65 dBA	514
70 dBA	162
Mitigated	
50 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

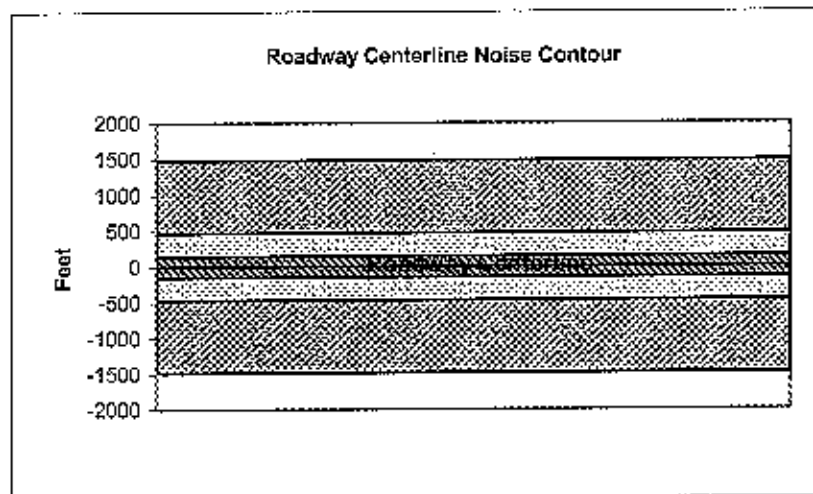
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	West of 580 Ramps		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	1177.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	1177.1
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	24
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	53.9	62.7	60.8	64.8	70.9	71.0
Medium Trucks:	62.1	54.2	47.8	44.8	54.0	54.3
Heavy Trucks:	66.7	54.9	45.9	45.6	55.9	56.0
Vehicle Noise:	69.0	64.0	61.2	64.9	71.1	71.3

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1485
65 dBA	470
70 dBA	148
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

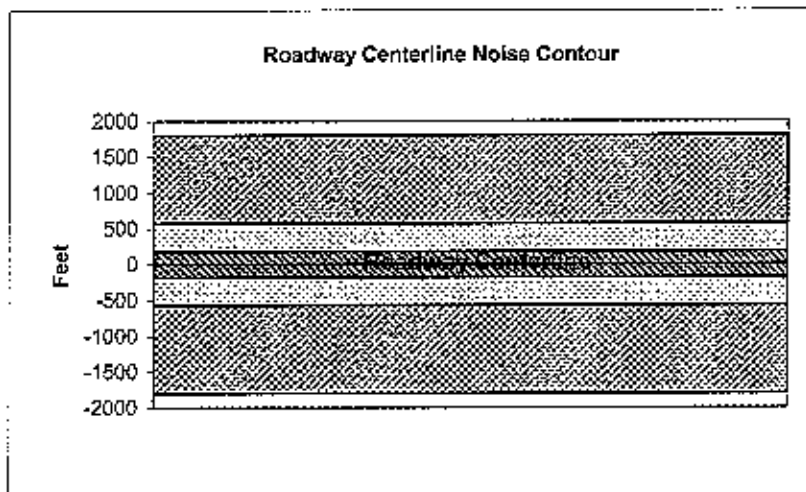
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	North of Linnie		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	1427.4
Receiver Barrier Dist:	0	Peak Hour Traffic:	1427.4
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	24
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Daily	0.9742
Autos:	0		0.0505
Medium Trucks:	2.3		0.0752
Heavy Trucks:	8		0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.7	63.5	61.6	65.6	71.8	71.9
Medium Trucks:	63.0	55.0	48.7	45.6	54.8	55.1
Heavy Trucks:	67.5	55.7	46.7	46.5	56.7	56.9
Vehicle Noise:	69.8	64.8	62.0	65.7	72.0	72.1

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1802
65 dBA	570
70 dBA	180
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	North of Valpico		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	1560.3
Receiver Barrier Dist:	0	Peak Hour Traffic:	1560.3
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	24
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
			Daily
		Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
			0.0505
			0.0752
			0.0806
			0.0074
NOISE SOURCE ELEVATIONS (Feet)			
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.1	63.9	62.0	66.0	72.1	72.3
Medium Trucks:	63.4	55.4	49.1	46.0	55.2	55.5
Heavy Trucks:	67.9	56.1	47.1	46.8	57.1	57.2
Vehicle Noise:	70.2	65.2	62.4	66.1	72.4	72.5

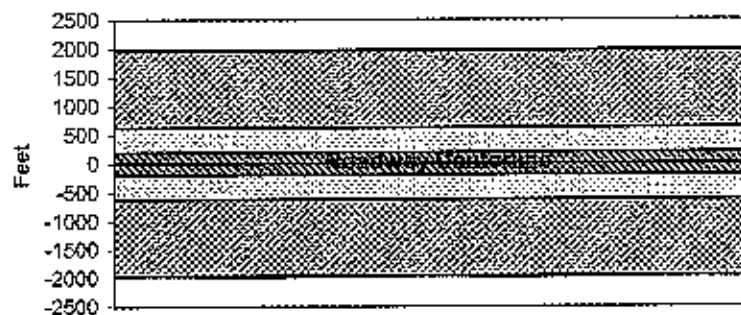
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	1967
65 dBA	622
70 dBA	197
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

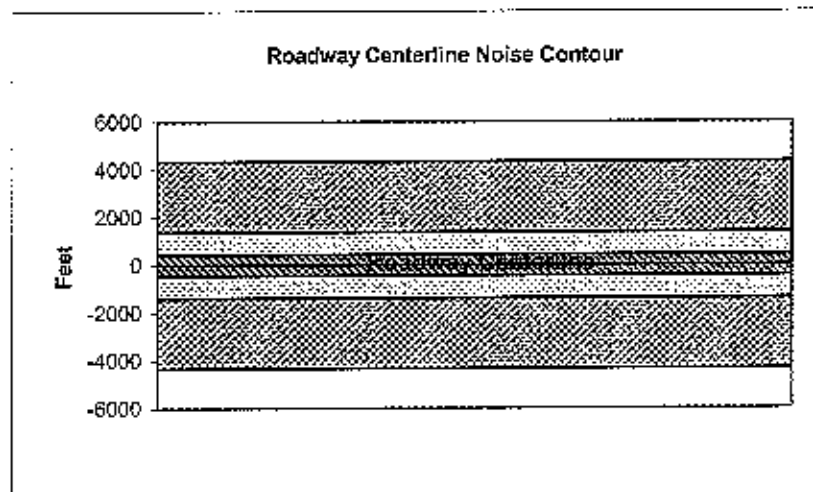
Project Name:	Ellis Specific Plan	Scenario:	Existing Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	South of 11th		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	3441.7
Receiver Barrier Dist:	0	Peak Hour Traffic:	3441.7
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0		
Pad Elevation:	0.5	NOISE INPUTS	
Road Elevation:	0	Site conditions HARD SITE	
Observer Height (above grade):	0	FLEET MIX	
Barrier Height:	0	Type	Day
Rt View: 90	Lft View: -90	Evening	Night
		Daily	
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.4	67.2	65.4	69.3	75.5	75.6
Medium Trucks:	66.7	58.8	52.4	49.3	58.6	58.8
Heavy Trucks:	71.2	59.4	50.4	50.2	60.4	60.6
Vehicle Noise:	73.6	68.6	65.7	69.4	75.7	75.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	4345
65 dBA	1374
70 dBA	435
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

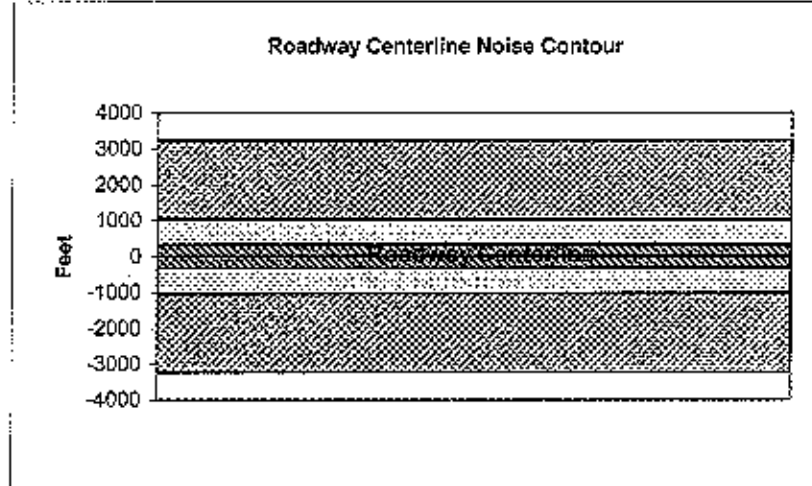
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	North of Linnie		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade: 0				
Barrier (0=wall, 1= berm):	0	Average Daily Traffic: 2567.1				
Receiver Barrier Dist:	0	Peak Hour Traffic: 2567.1				
Centerline Dist. To Observer:	100	Vehicle Speed: 45				
Barrier Near Lane CL Dist:	0	Centerline Separation: 30				
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	65.9	64.1	68.1	74.2	74.3
Medium Trucks:	65.4	57.5	51.1	48.0	57.3	57.6
Heavy Trucks:	69.9	58.1	49.2	48.9	59.1	59.3
Vehicle Noise:	72.3	67.3	64.5	68.2	74.4	74.5

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3236
65 dBA	1023
70 dBA	324
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

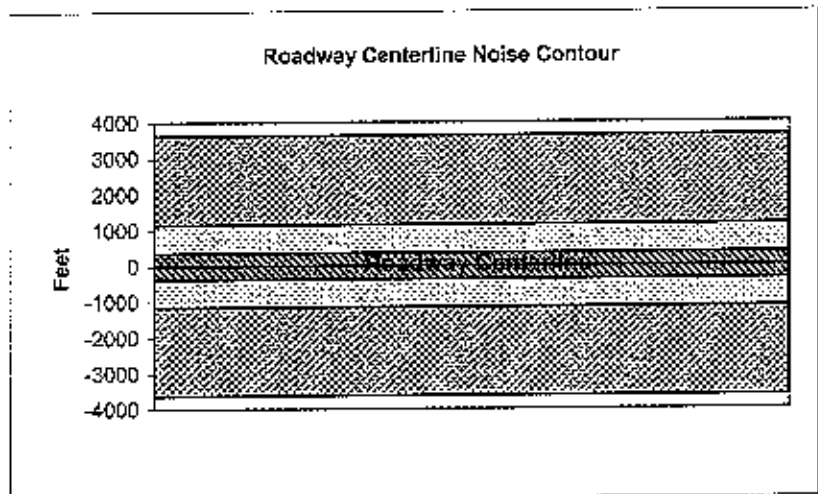
Project Name: Ellis Specific Plan Scenario: Future
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Corral Hollow Road
Road Segment: North of Valpico

PROJECT DATA			SITE DATA		
Centerline Dist to Barrier	0		Road Grade:	0	
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	28767	
Receiver Barrier Dist:	0		Peak Hour Traffic:	2876.7	
Centerline Dist. To Observer:	100		Vehicle Speed:	45	
Barrier Near Lane CL Dist:	0		Centerline Separation:	30	
Barrier Far lane CL Dist:	0		NOISE INPUTS		
Pad Elevation:	0.5		Site conditions HARD SITE		
Road Elevation:	0		FLEET MIX		
Observer Height (above grade):	0		Type	Day	Evening
Barrier Height:	0		Auto	0.777	0.127
Rt View: 90 Lft View: -90			Med. Truck	0.8743	0.0505
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284
Autos:	0				
Medium Trucks:	2.3				
Heavy Trucks:	8				

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.6	66.4	64.6	68.6	74.7	74.8
Medium Trucks:	65.9	58.0	51.6	48.5	57.8	58.1
Heavy Trucks:	70.4	58.6	49.7	49.4	59.6	59.8
Vehicle Noise:	72.8	67.8	65.0	68.7	74.9	75.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3631
65 dBA	1148
70 dBA	363
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

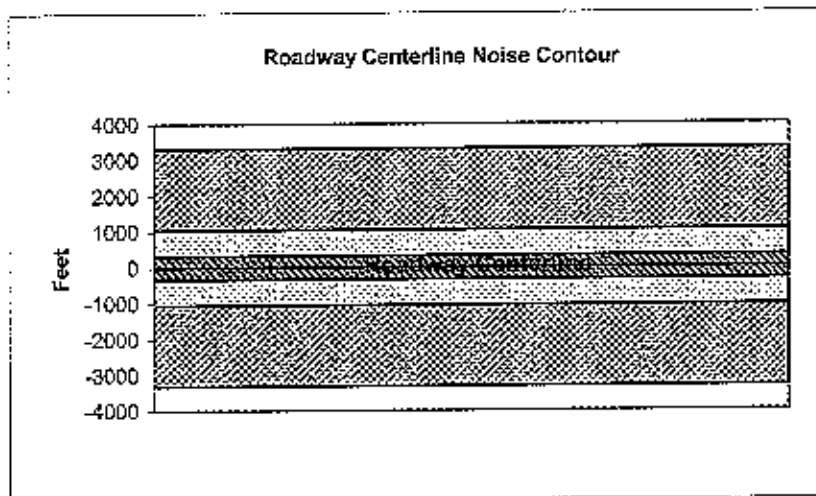
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	South of Valpico		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	26316
Receiver Barrier Dist:	0	Peak Hour Traffic:	2631.6
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.3	66.1	64.2	68.2	74.3	74.4
Medium Trucks:	65.5	57.6	51.2	48.1	57.4	57.7
Heavy Trucks:	70.1	58.2	49.3	49.0	59.3	59.4
Vehicle Noise:	72.4	67.4	64.6	68.3	74.5	74.6

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3319
65 dBA	1050
70 dBA	332
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

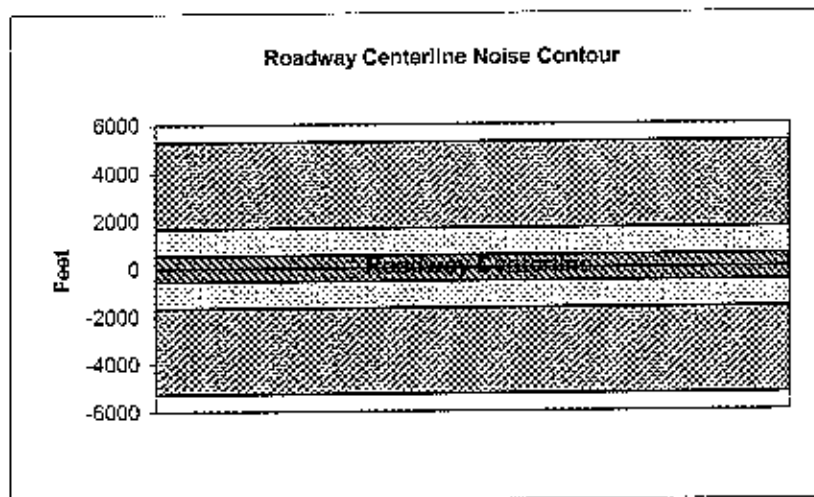
Project Name: Ellis Specific Plan Scenario: Future
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Corral Hallow Road
Road Segment: South of 11th

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:	0			
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	41925			
Receiver Barrier Dist:	0		Peak Hour Traffic:	4192.5			
Centerline Dist. To Observer:	100		Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0		Centerline Separation:	30			
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.3	68.1	66.2	70.2	76.3	76.4
Medium Trucks:	67.6	59.6	53.2	50.2	59.4	59.7
Heavy Trucks:	72.1	60.3	51.3	51.0	61.3	61.4
Vehicle Noise:	74.4	69.4	66.6	70.3	76.6	76.7

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	5284
65 dBA	1671
70 dBA	528
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

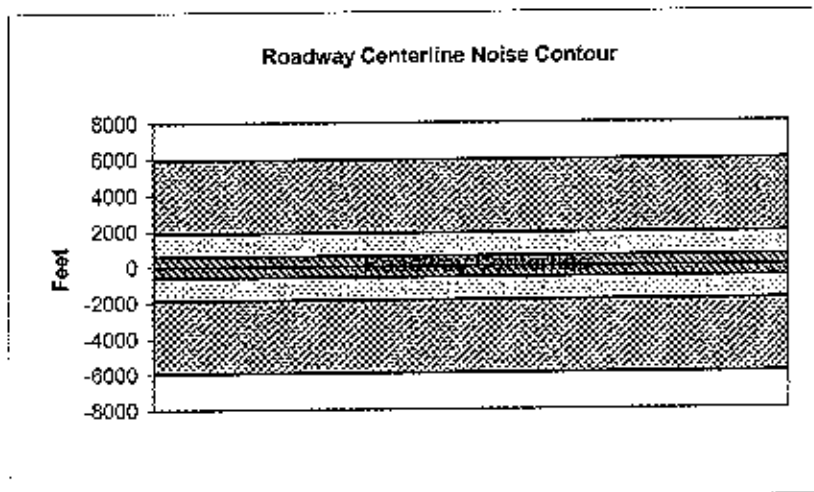
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	South of 11th		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	47150			
Receiver Barrier Dist:	0	Peak Hour Traffic:	4715			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	30			
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0506	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.8	68.6	66.7	70.7	76.8	77.0
Medium Trucks:	68.1	60.1	53.8	50.7	59.9	60.2
Heavy Trucks:	72.6	60.8	51.8	51.5	61.8	61.9
Vehicle Noise:	74.9	69.9	67.1	70.8	77.1	77.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	5943
65 dBA	1879
	594
Mitigated	
60 dBA	
65 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

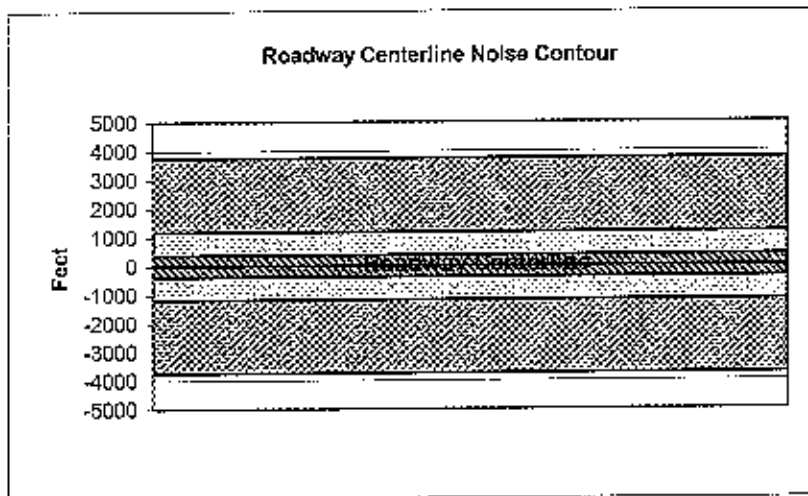
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	South of Grant		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	29735
Receiver Barrier Dist:	0	Peak Hour Traffic:	2973.5
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	66.6	64.7	68.7	74.8	75.0
Medium Trucks:	66.1	58.1	51.7	48.7	57.9	58.2
Heavy Trucks:	70.6	58.8	49.8	49.5	59.8	59.9
Vehicle Noise:	72.9	67.9	65.1	68.8	75.1	75.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3750
65 dBA	1186
70 dBA	375
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

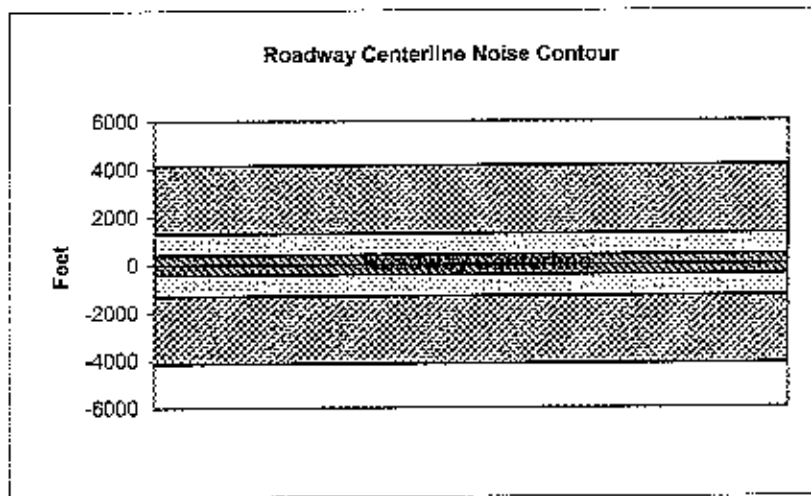
Project Name: Ellis Specific Plan Scenario: Future
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Corral Hallow Road
Road Segment: South of Grant

PROJECT DATA			SITE DATA					
Centerline Dist to Barrier	0		Road Grade:	0				
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	32895				
Receiver Barrier Dist:	0		Peak Hour Traffic:	3289.5				
Centerline Dist. To Observer:	100		Vehicle Speed:	45				
Barrier Near Lane CL Dist:	0		Centerline Separation:	30				
Barrier Far lane CL Dist:	0		NOISE INPUTS					
Pad Elevation:	0.5		Site conditions HARD SITE					
Road Elevation:	0		FLEET MIX					
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily	
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742	
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184	
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074	
Autos:	0							
Medium Trucks:	2.3							
Heavy Trucks:	8							

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.2	67.0	65.2	69.1	75.3	75.4
Medium Trucks:	66.5	58.6	52.2	49.1	58.4	58.6
Heavy Trucks:	71.0	59.2	50.3	50.0	60.2	60.4
Vehicle Noise:	73.4	68.4	65.5	69.2	75.5	75.6

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	4150
65 dBA	1312
70 dBA	415
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name: Ellis Specific Plan Scenario: Future
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Schulte
Road Segment: East of Lammers

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:	0			
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	4257			
Receiver Barrier Dist:	0		Peak Hour Traffic:	425.7			
Centerline Dist. To Observer:	100		Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0		Centerline Separation:	30			
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90 Lft View: -90			Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.3	58.1	56.3	60.3	66.4	66.5
Medium Trucks:	57.6	49.7	43.3	40.2	49.5	49.8
Heavy Trucks:	62.1	50.3	41.4	41.1	51.3	51.5
Vehicle Noise:	64.5	59.5	56.7	60.4	66.6	66.7

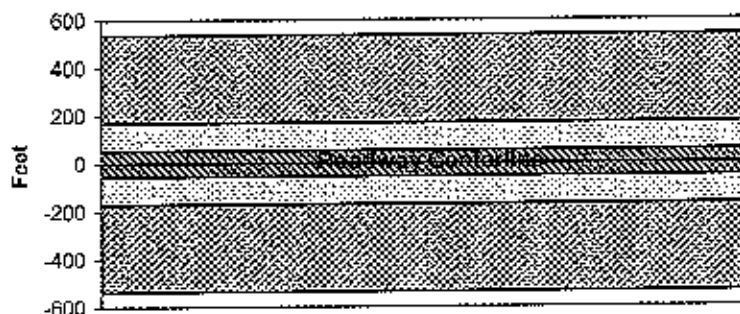
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	537
65 dBA	170
70 dBA	54
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

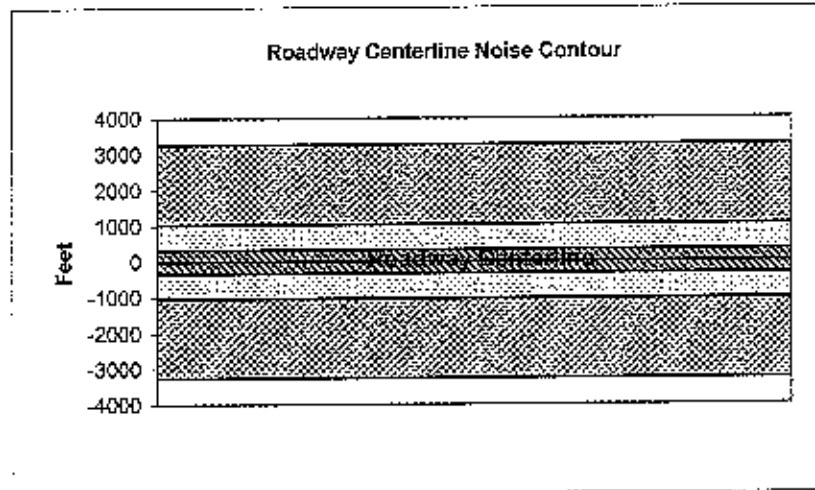
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Lammers		
Road Segment:	South of Schulte		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2592.9
Receiver Barrier Dist:	0	Peak Hour Traffic:	2592.9
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0505
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.5	66.3	64.4	68.4	74.6	74.7
Medium Trucks:	65.8	57.9	51.5	48.4	57.7	57.9
Heavy Trucks:	70.3	58.5	49.5	49.3	59.5	59.7
Vehicle Noise:	72.7	67.6	64.8	68.5	74.8	74.9

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3271
65 dBA	1034
70 dBA	327
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

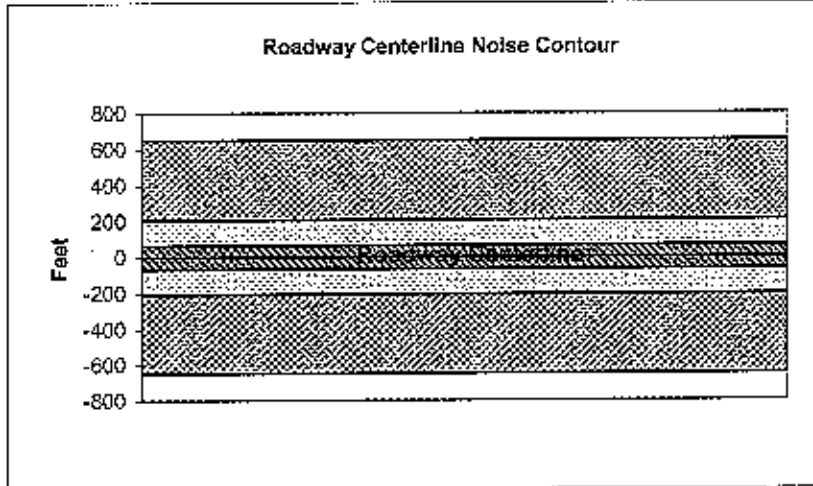
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Schulte		
Road Segment:	East of Lammers		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	5160
Receiver Barrier Dist:	0	Peak Hour Traffic:	516
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
			Daily
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.5	59.3	57.4	61.4	67.6	67.7
Medium Trucks:	58.8	50.9	44.5	41.4	50.7	50.9
Heavy Trucks:	63.3	51.5	42.5	42.3	52.5	52.7
Vehicle Noise:	65.6	60.6	57.8	61.5	67.8	67.9

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	651
65 dBA	206
70 dBA	65
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

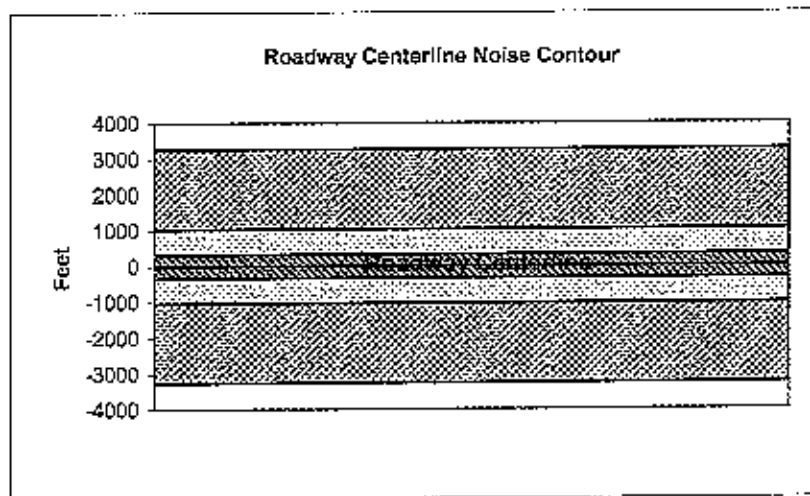
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Lammers		
Road Segment:	South of Schulte		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	25929
Receiver Barrier Dist:	0	Peak Hour Traffic:	2592.9
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.5	66.3	64.4	68.4	74.6	74.7
Medium Trucks:	65.8	57.9	51.5	48.4	57.7	57.9
Heavy Trucks:	70.3	58.5	49.5	49.3	59.5	59.7
Vehicle Noise:	72.7	67.6	64.8	68.5	74.8	74.9

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60.dBA	3271
65.dBA	1034
70.dBA	327
Mitigated	
50.dBA	
65.dBA	
70.dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

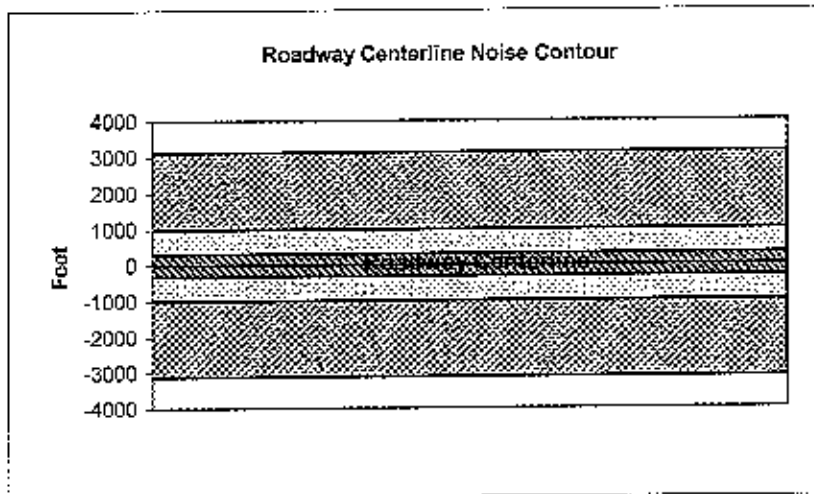
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Linnie		
Road Segment:	East of Corral		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2476.8
Receiver Barrier Dist:	0	Peak Hour Traffic:	2476.8
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.3	66.1	64.2	68.2	74.4	74.5
Medium Trucks:	65.6	57.7	51.3	48.2	57.5	57.7
Heavy Trucks:	70.1	58.3	49.3	49.1	59.3	59.5
Vehicle Noise:	72.5	67.4	64.6	68.3	74.6	74.7

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3123
65 dBA	988
70 dBA	312
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

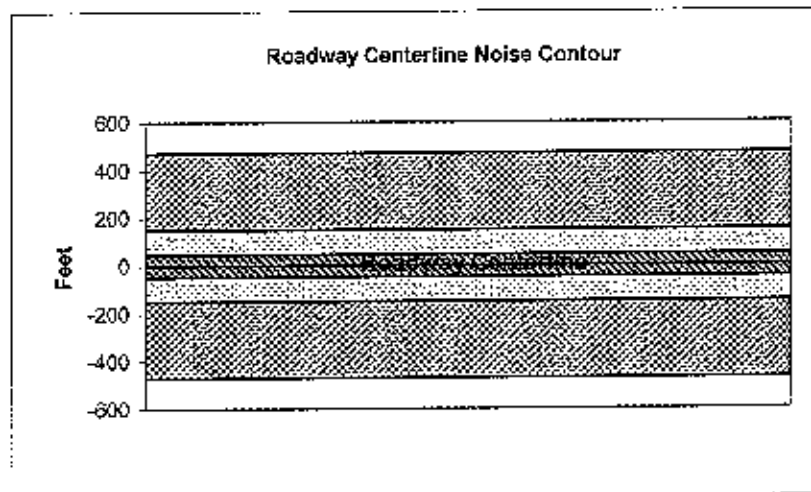
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Valpico		
Road Segment:	East of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	7482
Receiver Barrier Dist:	0	Peak Hour Traffic:	748.2
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0505
			0.0284
			0.0752
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.0	57.8	55.9	59.9	66.0	66.1
Medium Trucks:	58.7	50.8	44.4	41.3	50.8	50.8
Heavy Trucks:	63.9	52.1	43.1	42.9	53.5	53.6
Vehicle Noise:	66.4	59.8	56.5	60.1	66.4	66.5

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	472
65 dBA	149
70 dBA	47
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name: Ellis Specific Plan		Scenario: Future	
Analyst: Maria Cadiz		Job #: 40-100187	
Roadway: Valpico			
Road Segment: West of Corral Hollow			
PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	1290
Receiver Barrier Dist:	0	Peak Hour Traffic:	129
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
			Daily
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	41.3	50.1	48.3	52.3	58.4	58.5
Medium Trucks:	51.1	43.1	36.7	33.7	42.9	43.2
Heavy Trucks:	56.3	44.5	35.5	35.2	45.8	46.0
Vehicle Noise:	58.7	52.1	48.9	52.4	58.7	58.9

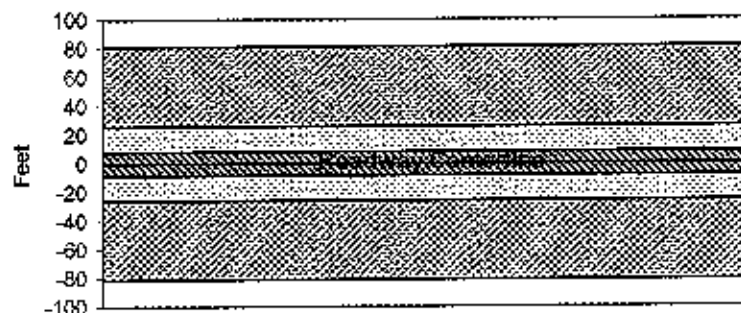
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	81
65 dBA	26
70 dBA	8
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

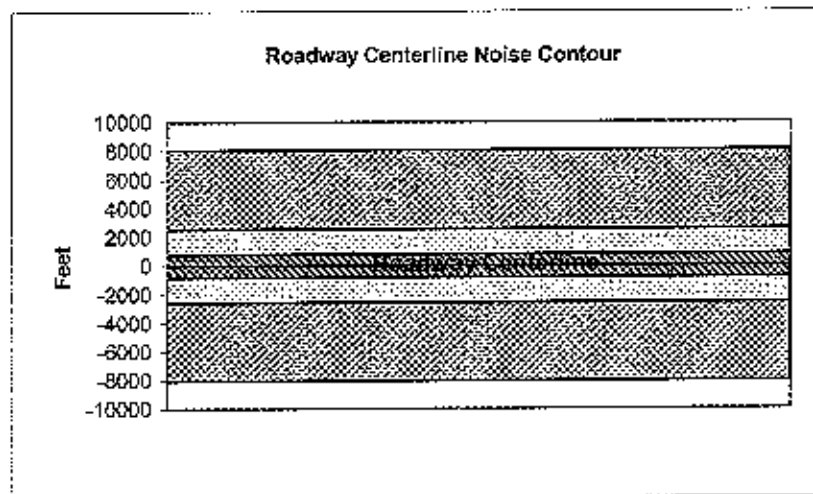
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	11th		
Road Segment:	East of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	3650.7
Receiver Barrier Dist:	0	Peak Hour Traffic:	3650.7
Centerline Dist. To Observer:	100	Vehicle Speed:	55
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.1	69.9	68.0	72.0	78.1	78.3
Medium Trucks:	68.2	60.3	53.9	50.8	60.1	60.4
Heavy Trucks:	72.2	60.4	51.4	51.1	61.1	61.2
Vehicle Noise:	74.5	70.8	68.3	72.1	78.3	78.4

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	8069
65 dBA	2552
70 dBA	807
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

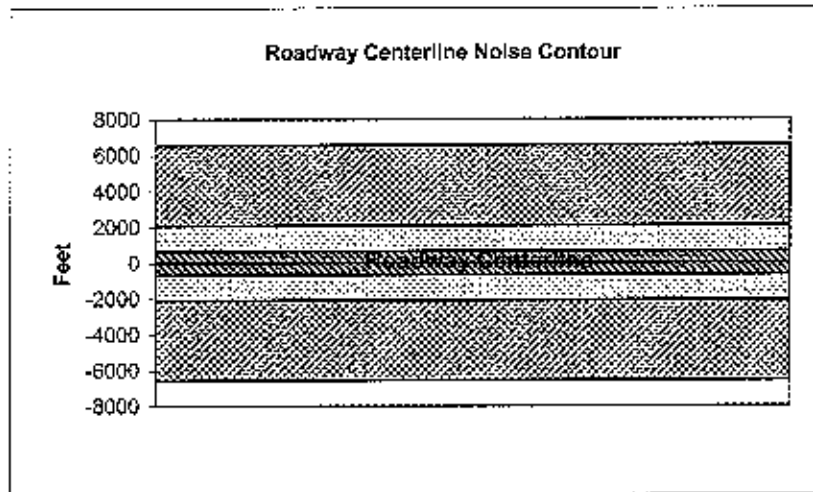
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	11th		
Road Segment:	West of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	29735
Receiver Barrier Dist:	0	Peak Hour Traffic:	2973.5
Centerline Dist. To Observer:	100	Vehicle Speed:	55
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day Evening Night Daily
Barrier Height:	0	Auto	0.777 0.127 0.96 0.9742
Rt View: 90 Lt View: -90		Med. Truck	0.8743 0.0505 0.0752 0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891 0.0284 0.0806 0.0074
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	69.0	67.1	71.1	77.3	77.4
Medium Trucks:	67.3	59.4	53.0	49.9	59.2	59.5
Heavy Trucks:	71.3	59.5	50.5	50.2	60.2	60.4
Vehicle Noise:	73.6	70.0	67.4	71.2	77.4	77.5

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
50 dBA	6573
65 dBA	2079
70 dBA	657
Mitigated	
50 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

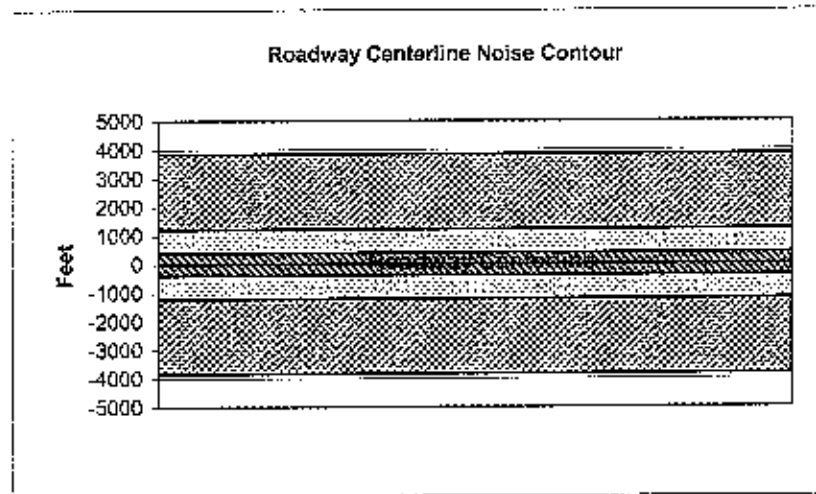
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Corral Hollow		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	3044.4			
Receiver Barrier Dist:	0	Peak Hour Traffic:	3044.4			
Centerline Dist. To Observer:	100	Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0	Centerline Separation:	36			
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	66.6	64.7	68.7	74.8	75.0
Medium Trucks:	66.1	58.1	51.8	48.7	57.9	58.2
Heavy Trucks:	70.6	58.8	49.8	49.5	59.8	59.9
Vehicle Noise:	72.9	67.9	65.1	68.8	75.1	75.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3844
65 dBA	1216
70 dBA	384
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

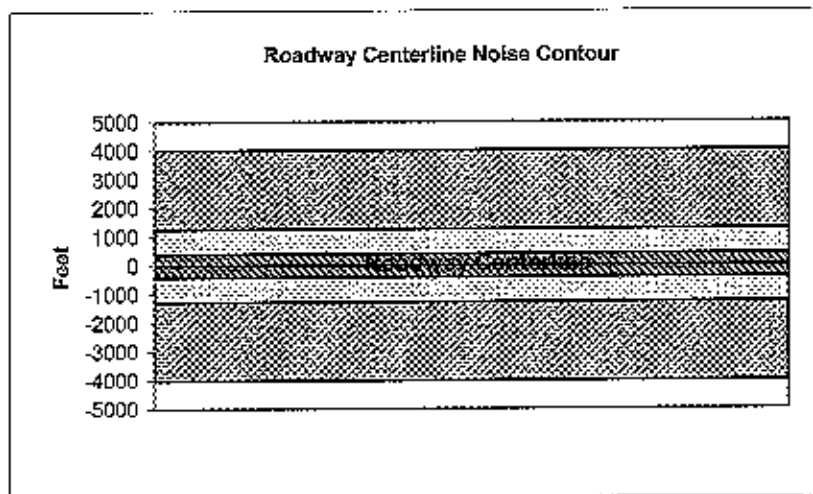
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	West of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	31928
Receiver Barrier Dist:	0	Peak Hour Traffic:	3192.8
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)			
Autos:			
Medium Trucks:			
Heavy Trucks:			

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	66.8	64.9	68.9	75.1	75.2
Medium Trucks:	66.3	58.3	52.0	48.9	58.1	58.4
Heavy Trucks:	70.8	59.0	50.0	49.8	60.0	60.1
Vehicle Noise:	73.1	68.1	65.3	69.0	75.3	75.4

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	4025
65 dBA	1273
70 dBA	403
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

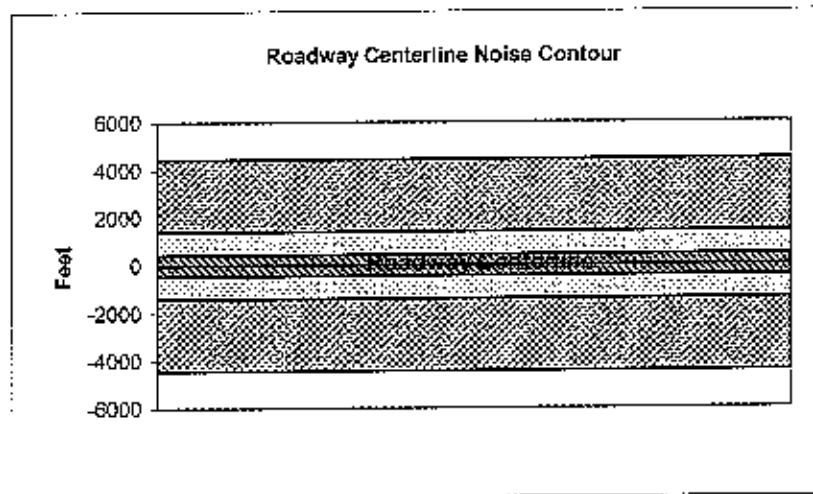
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Byron		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	35282
Receiver Barrier Dist:	0	Peak Hour Traffic:	3528.2
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos: 0		Auto	0.777
Medium Trucks: 2.3		Med. Truck	0.8743
Heavy Trucks: 8		Heavy Truck	0.891

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.4	67.2	65.4	69.3	75.5	75.6
Medium Trucks:	66.7	58.8	52.4	49.3	58.6	58.9
Heavy Trucks:	71.2	59.4	50.5	50.2	60.4	60.6
Vehicle Noise:	73.6	68.6	65.7	69.5	75.7	75.8

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	4454
65 dBA	1409
70 dBA	445
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

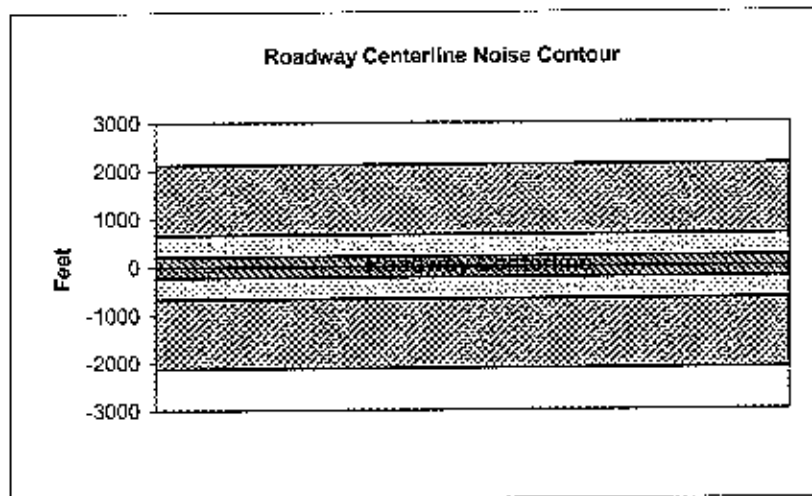
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Byron		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	16835
Receiver Barrier Dist:	0	Peak Hour Traffic:	1683.5
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.2	64.0	62.1	66.1	72.3	72.4
Medium Trucks:	63.5	55.6	49.2	46.1	55.4	55.6
Heavy Trucks:	68.0	56.2	47.2	47.0	57.2	57.4
Vehicle Noise:	70.4	65.3	62.5	66.2	72.5	72.6

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2122
65 dBA	671
70 dBA	212
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

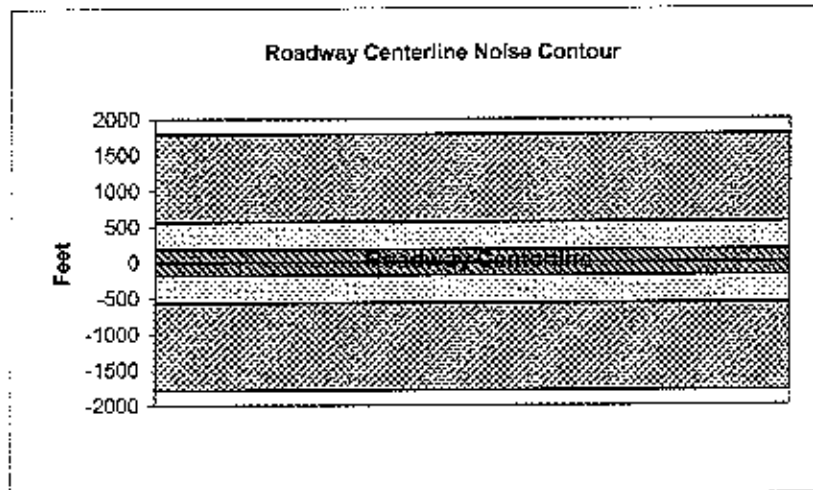
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Byron		
Road Segment:	South of Grant Line		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade:	0			
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	28380			
Receiver Barrier Dist:	0	Peak Hour Traffic:	2838			
Centerline Dist. To Observer:	100	Vehicle Speed:	35			
Barrier Near Lane CL Dist:	0	Centerline Separation:	12			
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.8	63.6	61.7	65.7	71.8	71.9
Medium Trucks:	64.5	56.6	50.2	47.1	56.4	56.6
Heavy Trucks:	69.7	57.9	48.9	48.7	59.3	59.4
Vehicle Noise:	72.1	65.6	62.3	65.9	72.2	72.3

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1789
65 dBA	566
70 dBA	179
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Byron		
Road Segment:	North of Grant Line		

PROJECT DATA				SITE DATA				
Centerline Dist to Barrier	0			Road Grade:	0			
Barrier (0=wall, 1= berm):	0			Average Daily Traffic:	5410			
Receiver Barrier Dist:	0			Peak Hour Traffic:	541			
Centerline Dist. To Observer:	100			Vehicle Speed:	35			
Barrier Near Lane CL Dist:	0			Centerline Separation:	12			
Barrier Far lane CL Dist:	0			NOISE INPUTS				
Pad Elevation:	0.5			Site conditions HARD SITE				
Road Elevation:	0			FLEET MIX				
Observer Height (above grade):	0			Type	Day	Evening	Night	Daily
Barrier Height:	0			Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90			Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)				Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0							
Medium Trucks:	2.3							
Heavy Trucks:	8							

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	47.6	56.4	54.5	58.5	64.6	64.7
Medium Trucks:	57.3	49.4	43.0	39.9	49.2	49.4
Heavy Trucks:	62.5	50.7	41.7	41.5	52.1	52.2
Vehicle Noise:	64.9	58.4	55.1	58.7	65.0	65.1

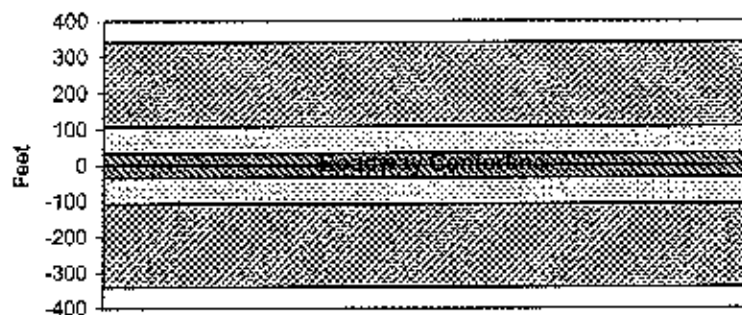
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	341
65 dBA	108
70 dBA	34
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

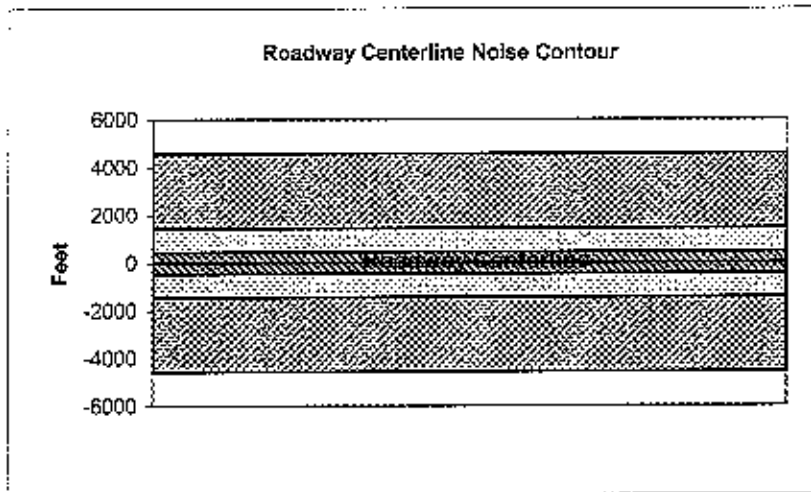
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	East of 580 Ramps		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	3626.3
Receiver Barrier Dist:	0	Peak Hour Traffic:	3626.3
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.091
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.7	67.4	65.6	69.6	75.7	75.8
Medium Trucks:	66.9	59.0	52.6	49.5	58.8	59.1
Heavy Trucks:	71.4	59.6	50.7	50.4	60.6	60.8
Vehicle Noise:	73.8	68.8	66.0	69.7	75.9	76.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	4571
65 dBA	1445
70 dBA	457
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

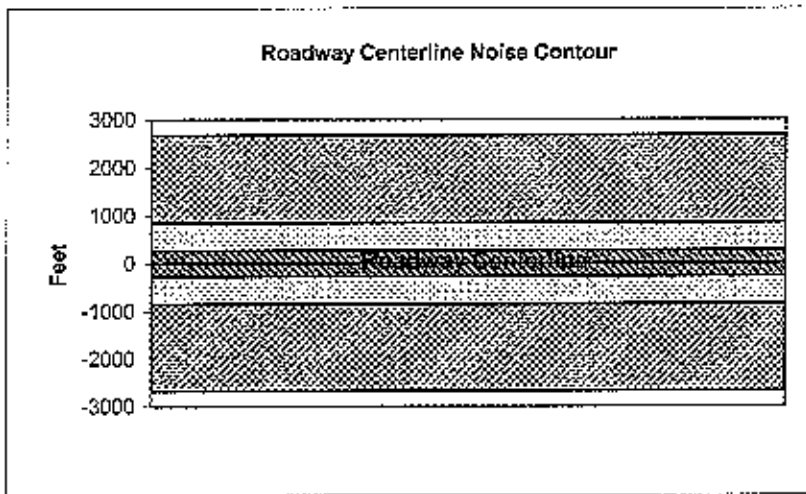
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	West of 580 Ramps		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2122.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	2122.1
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.0505
		Heavy Truck	0.0284
			0.0806
			0.0074
NOISE SOURCE ELEVATIONS (Feet)			
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.3	65.1	63.3	67.2	73.4	73.5
Medium Trucks:	64.6	56.7	50.3	47.2	56.5	56.7
Heavy Trucks:	69.1	57.3	48.3	48.1	58.3	58.5
Vehicle Noise:	71.5	66.5	63.6	67.3	73.6	73.7

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2679
65 dBA	847
70 dBA	268
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

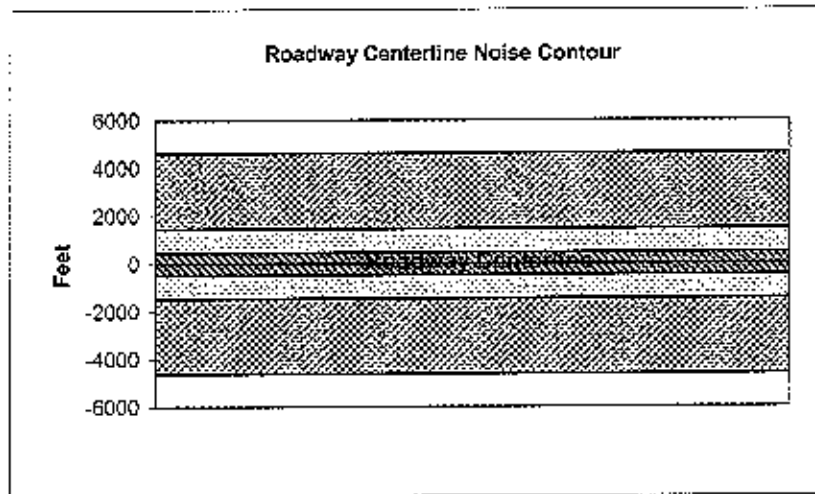
Project Name: Ellis Specific Plan Scenario: Future
Analyst: Maria Cadiz Job #: 40-100187
Roadway: Corral Hallow Road
Road Segment: West of 580 Ramps

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:		0		
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:		3663.6		
Receiver Barrier Dist:	0		Peak Hour Traffic:		3663.6		
Centerline Dist. To Observer:	100		Vehicle Speed:		45		
Barrier Near Lane CL Dist:	0		Centerline Separation:		30		
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos: 0							
Medium Trucks: 2.3							
Heavy Trucks: 8							

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.7	67.5	65.6	69.6	75.7	75.9
Medium Trucks:	67.0	59.0	52.7	49.6	58.8	59.1
Heavy Trucks:	71.5	59.7	50.7	50.4	60.7	60.8
Vehicle Noise:	73.8	68.8	66.0	69.7	76.0	76.1

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	4624
65 dBA	1462
70 dBA	462
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

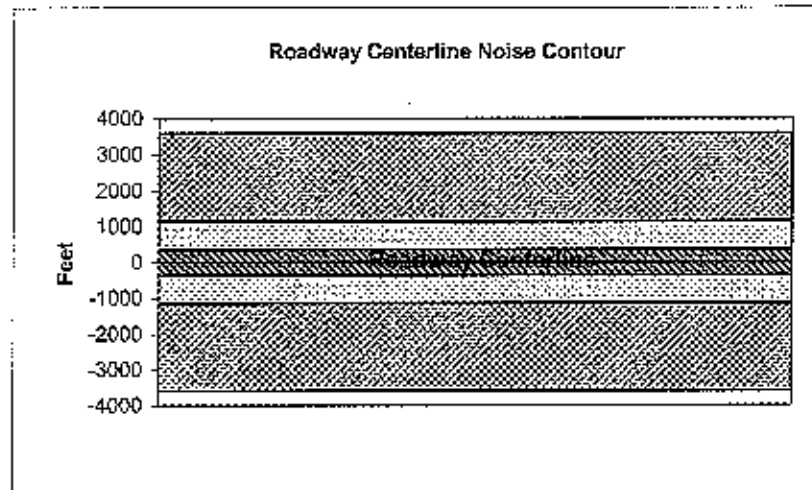
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	South of Grant		

PROJECT DATA			SITE DATA					
Centerline Dist to Barrier	0		Road Grade:	0				
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	28509				
Receiver Barrier Dist:	0		Peak Hour Traffic:	2850.9				
Centerline Dist. To Observer:	100		Vehicle Speed:	45				
Barrier Near Lane CL Dist:	0		Centerline Separation:	30				
Barrier Far lane CL Dist:	0		NOISE INPUTS					
Pad Elevation:	0.5		Site conditions HARD SITE					
Road Elevation:	0		FLEET MIX					
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily	
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742	
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184	
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck:	0.891	0.0284	0.0806	0.0074	
Autos:	0							
Medium Trucks:	2.3							
Heavy Trucks:	8							

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.6	66.4	64.5	68.5	74.7	74.8
Medium Trucks:	65.9	58.0	51.6	48.5	57.8	58.0
Heavy Trucks:	70.4	58.6	49.6	49.4	59.6	59.8
Vehicle Noise:	72.7	67.7	64.9	68.6	74.9	75.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3597
65 dBA	1138
70 dBA	360
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-103
Traffic Noise Prediction Model (CALVENO)**

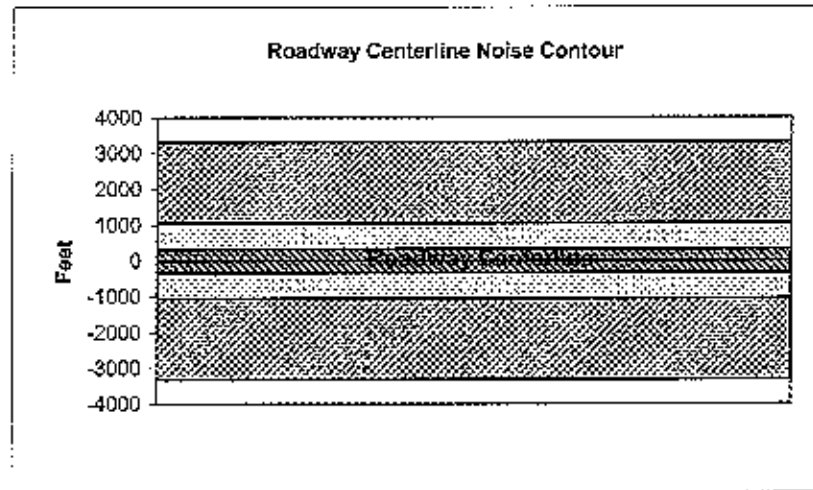
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	North of Valpico		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2638.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	2638.1
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day Evening Night Daily
Barrier Height:	0	Auto	0.777 0.127 0.96 0.9742
Rt View: 90 Lft View: -90		Med. Truck	0.8743 0.0505 0.0752 0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891 0.0284 0.0806 0.0074
Autos:	0		
Medium Trucks:	2.3		
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.3	66.1	64.2	68.2	74.3	74.4
Medium Trucks:	65.5	57.6	51.2	48.2	57.4	57.7
Heavy Trucks:	70.1	58.3	49.3	49.0	59.3	59.4
Vehicle Noise:	72.4	67.4	64.6	68.3	74.5	74.7

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3327
65 dBA	1052
70 dBA	333
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

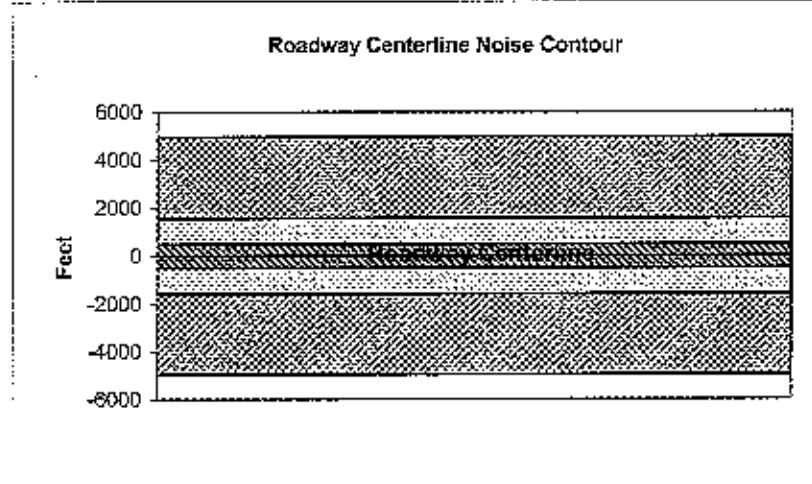
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	South of 11th		

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade: 0				
Barrier (0=wall, 1= berm):	0		Average Daily Traffic: 39410				
Receiver Barrier Dist:	0		Peak Hour Traffic: 3941				
Centerline Dist. To Observer:	100		Vehicle Speed: 45				
Barrier Near Lane CL Dist:	0		Centerline Separation: 30				
Barrier Far Lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.0	67.8	65.9	69.9	76.1	76.2
Medium Trucks:	67.3	59.4	53.0	49.9	59.2	59.4
Heavy Trucks:	71.8	60.0	51.0	50.8	61.0	61.2
Vehicle Noise:	74.1	69.1	66.3	70.0	76.3	76.4

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	4966
65 dBA	1570
70 dBA	497
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

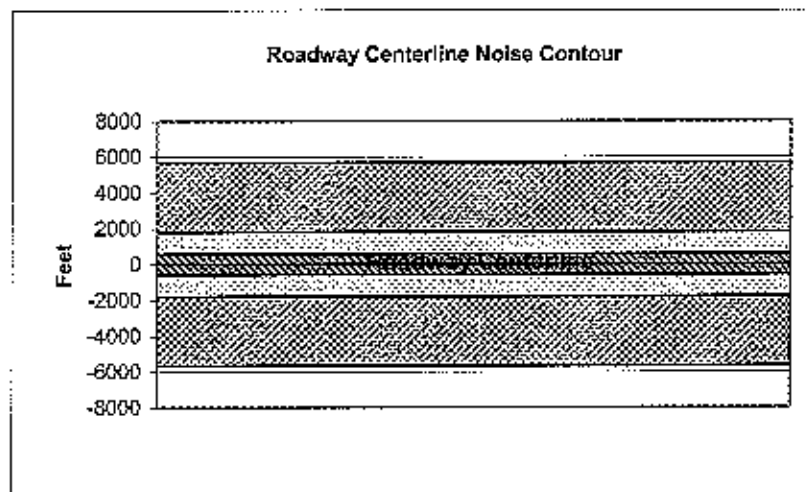
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	South of 11th		

PROJECT DATA		SITE DATA				
Centerline Dist to Barrier	0	Road Grade: 0				
Barrier (0=wall, 1= berm):	0	Average Daily Traffic: 4502.1				
Receiver Barrier Dist:	0	Peak Hour Traffic: 4502.1				
Centerline Dist. To Observer:	100	Vehicle Speed: 45				
Barrier Near Lane CL Dist:	0	Centerline Separation: 30				
Barrier Far lane CL Dist:	0	NOISE INPUTS				
Pad Elevation:	0.5	Site conditions HARD SITE				
Road Elevation:	0	FLEET MIX				
Observer Height (above grade):	0	Type	Day	Evening	Night	Daily
Barrier Height:	0	Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90	Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0					
Medium Trucks:	2.3					
Heavy Trucks:	8					

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	59.6	68.4	66.5	70.5	76.6	76.8
Medium Trucks:	67.9	59.9	53.6	50.5	59.7	60.0
Heavy Trucks:	72.4	60.6	51.6	51.3	61.6	61.7
Vehicle Noise:	74.7	69.7	66.9	70.6	76.9	77.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
80 dBA	5675
65 dBA	1795
50 dBA	568
Mitigated	
80 dBA	
65 dBA	
50 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

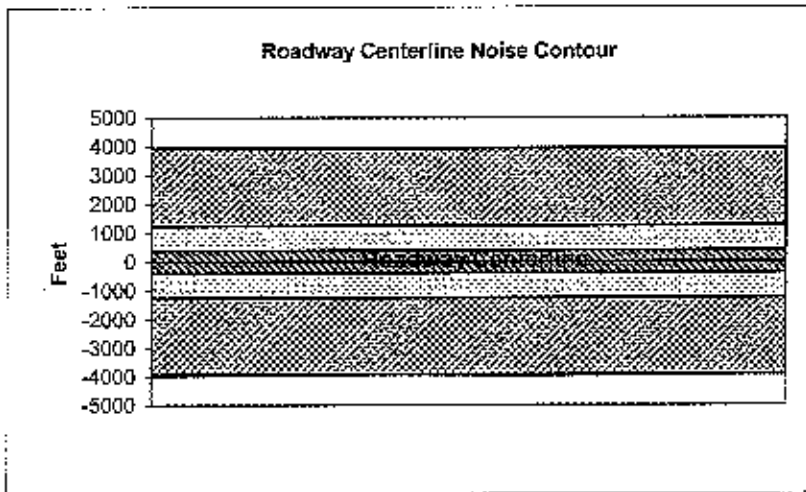
Project Name:	Ellis Specific Plan	Scenario:	Future
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	South of Grant		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	31218
Receiver Barrier Dist:	0	Peak Hour Traffic:	3121.8
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.0	66.8	64.9	68.9	75.1	75.2
Medium Trucks:	66.3	58.3	52.0	48.9	58.1	58.4
Heavy Trucks:	70.8	59.0	50.0	49.8	60.0	60.1
Vehicle Noise:	73.1	68.1	65.3	69.0	75.3	75.4

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
50 dBA	3935
65 dBA	1245
75 dBA	394
Mitigated	
50 dBA	
65 dBA	
75 dBA	



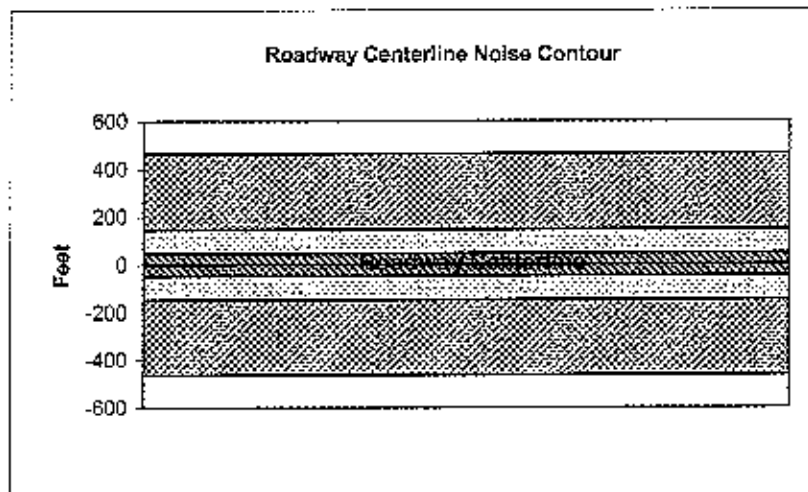
**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name: Ellis Specific Plan		Scenario: Future Plus Project	
Analyst: Maria Cadiz		Job #: 40-100187	
Roadway: Schulte			
Road Segment: East of Lammers			
PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	3677
Receiver Barrier Dist:	0	Peak Hour Traffic:	367.7
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	48.7	57.5	55.6	59.6	65.8	65.9
Medium Trucks:	57.0	49.1	42.7	39.6	48.9	49.1
Heavy Trucks:	61.5	49.7	40.7	40.5	50.7	50.9
Vehicle Noise:	63.8	58.8	56.0	59.7	66.0	66.1

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	463
65 dBA	147
70 dBA	46
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

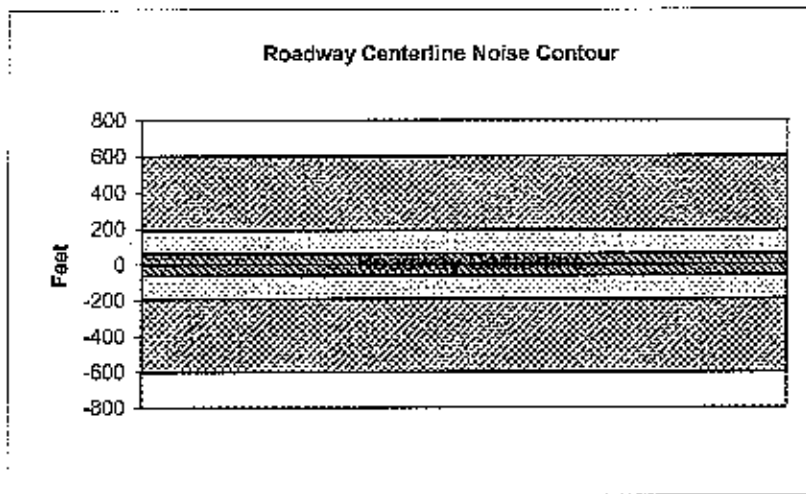
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Schulte		
Road Segment:	East of Lammers		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	4773
Receiver Barrier Dist:	0	Peak Hour Traffic:	477.3
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lt View: -90		Night
			Daily
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	50.2	59.0	57.1	61.1	67.2	67.3
Medium Trucks:	58.4	50.5	44.1	41.1	50.3	50.6
Heavy Trucks:	63.0	51.2	42.2	41.9	52.2	52.3
Vehicle Noise:	65.3	60.3	57.5	61.2	67.4	67.6

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	602
65 dBA	190
70 dBA	60
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

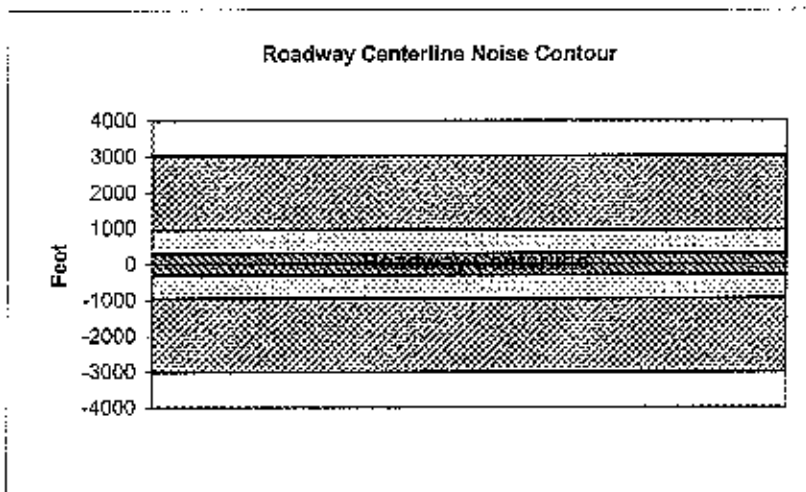
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Lammers		
Road Segment:	South of Schulte		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	23994
Receiver Barrier Dist:	0	Peak Hour Traffic:	2399.4
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Daily	
NOISE SOURCE ELEVATIONS (Feet)		Auto	0.777
Autos:	0	Med. Truck	0.8743
Medium Trucks:	2.3	Heavy Truck	0.891
Heavy Trucks:	8		

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.2	66.0	64.1	68.1	74.2	74.3
Medium Trucks:	65.5	57.5	51.1	48.1	57.3	57.6
Heavy Trucks:	70.0	58.2	49.2	48.9	59.2	59.3
Vehicle Noise:	72.3	67.3	64.5	68.2	74.5	74.6

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3024
65 dBA	956
70 dBA	302
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

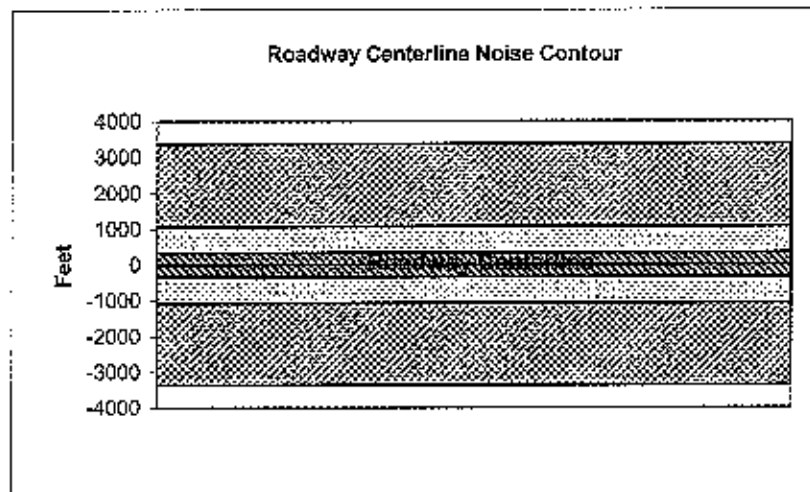
Project Name: Ellis Specific Plan	Scenario: Future Plus Project
Analyst: Maria Cadiz	Job #: 40-100187
Roadway: Lammers	
Road Segment: South of Schulte	

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	26768
Receiver Barrier Dist:	0	Peak Hour Traffic:	2676.8
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
NOISE SOURCE ELEVATIONS (Feet)			Daily
Autos:	0	Auto	0.777
Medium Trucks:	2.3	Med. Truck	0.8743
Heavy Trucks:	8	Heavy Truck	0.891
			0.0284
			0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.7	66.4	64.6	68.6	74.7	74.8
Medium Trucks:	65.9	58.0	51.6	48.5	57.8	58.1
Heavy Trucks:	70.5	58.6	49.7	49.4	59.6	59.8
Vehicle Noise:	72.8	67.8	65.0	68.7	74.9	75.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3378
65 dBA	1068
70 dBA	338
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

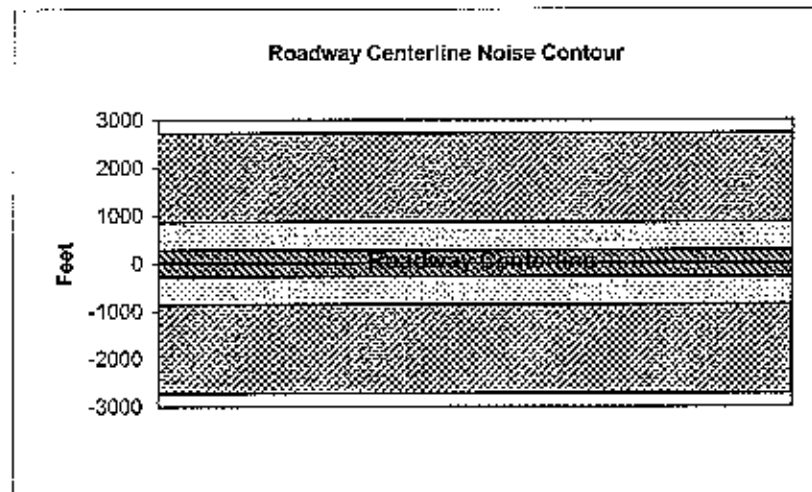
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Linnie		
Road Segment:	East of Corral		

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:	0			
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	21608			
Receiver Barrier Dist:	0		Peak Hour Traffic:	2160.8			
Centerline Dist. To Observer:	100		Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0		Centerline Separation:	12			
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.7	65.5	63.7	67.6	73.8	73.9
Medium Trucks:	65.0	67.1	50.7	47.6	56.9	57.1
Heavy Trucks:	69.5	57.7	48.8	48.5	58.7	58.9
Vehicle Noise:	71.9	66.9	64.0	67.7	74.0	74.1

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2727
65 dBA	862
70 dBA	273
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

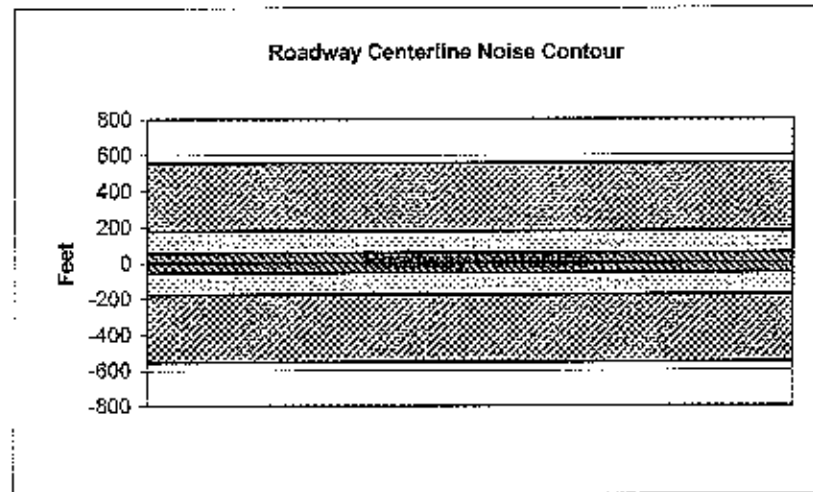
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Valpico		
Road Segment:	East of Corral Hollow		

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade: 0				
Barrier (0=wall, 1= berm):	0		Average Daily Traffic: 883.7				
Receiver Barrier Dist:	0		Peak Hour Traffic: 883.7				
Centerline Dist. To Observer:	100		Vehicle Speed: 35				
Barrier Near Lane CL Dist:	0		Centerline Separation: 12				
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	49.7	58.5	56.6	60.6	66.8	66.9
Medium Trucks:	59.4	51.5	45.1	42.0	51.3	51.6
Heavy Trucks:	64.6	52.8	43.9	43.6	54.2	54.3
Vehicle Noise:	67.1	60.5	57.2	60.8	67.1	67.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	557
65 dBA	176
70 dBA	56
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

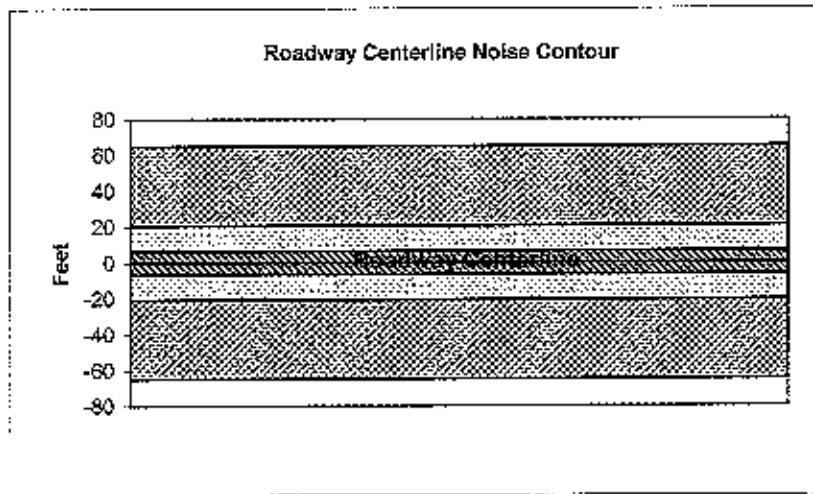
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Valpico		
Road Segment:	West of Corral Hollow		

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:		0		
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:		1032		
Receiver Barrier Dist:	0		Peak Hour Traffic:		103.2		
Centerline Dist. To Observer:	100		Vehicle Speed:		35		
Barrier Near Lane CL Dist:	0		Centerline Separation:		12		
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	40.4	49.2	47.3	51.3	57.4	57.5
Medium Trucks:	50.1	42.2	35.8	32.7	42.0	42.2
Heavy Trucks:	55.3	43.5	34.5	34.3	44.9	45.0
Vehicle Noise:	57.7	51.2	47.9	51.5	57.8	57.9

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	65
65 dBA	21
70 dBA	6
Mitigated	
60 dBA	
65 dBA	
70 dBA	



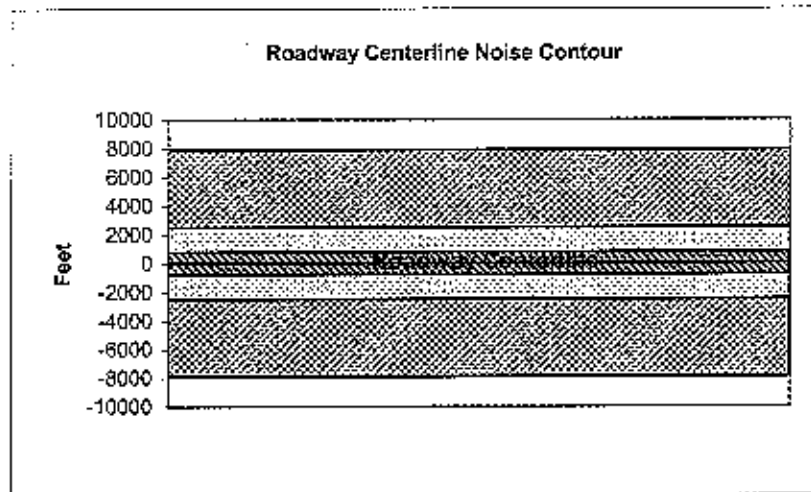
**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name: Ellis Specific Plan		Scenario: Future Plus Project	
Analyst: Maria Cadiz		Job #: 40-100187	
Roadway: 11th			
Road Segment: East of Corral Hollow			
PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	3560.4
Receiver Barrier Dist:	0	Peak Hour Traffic:	3560.4
Centerline Dist. To Observer:	100	Vehicle Speed:	55
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	61.0	69.8	67.9	71.9	78.0	78.1
Medium Trucks:	68.1	60.2	53.8	50.7	60.0	60.3
Heavy Trucks:	72.1	60.3	51.3	51.0	61.0	61.1
Vehicle Noise:	74.4	70.7	68.2	72.0	78.2	78.3

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	7885
65 dBA	2493
70 dBA	788
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

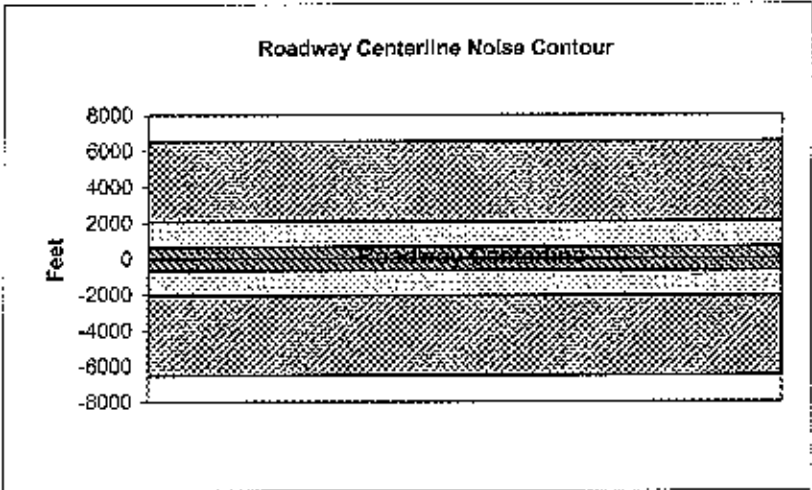
Project Name: Ellis Specific Plan	Scenario: Future Plus Project
Analyst: Maria Cadiz	Job #: 40-100187
Roadway: 11th	
Road Segment: West of Corral Hollow	

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	29606
Receiver Barrier Dist:	0	Peak Hour Traffic:	2960.6
Centerline Dist. To Observer:	100	Vehicle Speed:	55
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Evening	Night
Autos:			Daily
Medium Trucks:			
Heavy Trucks:			

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	60.2	69.0	67.1	71.1	77.2	77.3
Medium Trucks:	67.3	59.4	53.0	49.9	59.2	59.5
Heavy Trucks:	71.3	59.5	50.5	50.2	60.2	60.3
Vehicle Noise:	73.6	69.9	67.4	71.2	77.4	77.5

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	6543
65 dBA	2069
70 dBA	654
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	West of 580 Ramps		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	3031.5
Receiver Barrier Dist:	0	Peak Hour Traffic:	3031.5
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Daily	0.9742
Autos:	0		0.0505
Medium Trucks:	2.3		0.0752
Heavy Trucks:	8		0.0806
			0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.9	66.7	64.8	68.8	74.9	75.0
Medium Trucks:	66.2	58.2	51.8	48.8	58.0	58.3
Heavy Trucks:	70.7	58.9	49.9	49.6	59.9	60.0
Vehicle Noise:	73.0	68.0	65.2	68.9	75.1	75.3

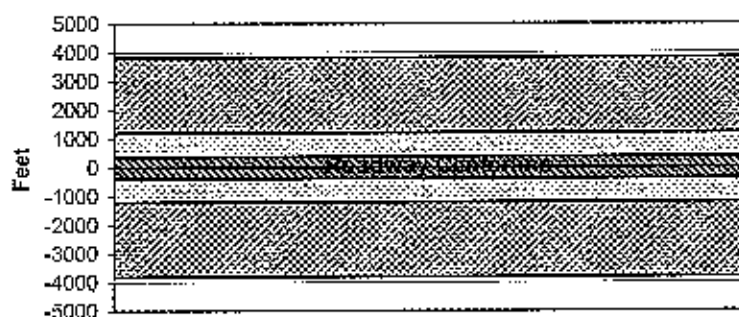
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	3819
65 dBA	1208
70 dBA	382
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

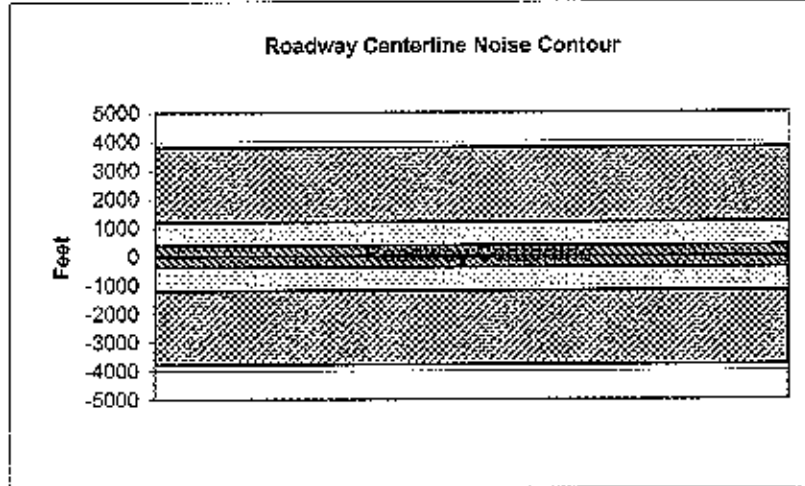
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Corral Hollow		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	29993
Receiver Barrier Dist:	0	Peak Hour Traffic:	2999.3
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Evening	Night
Rt View: 90	Lft View: -90	Auto	0.777
		Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Daily	0.96
Autos:	0		0.9742
Medium Trucks:	2.3		0.0184
Heavy Trucks:	8		0.0074

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.7	66.5	64.7	68.6	74.8	74.9
Medium Trucks:	66.0	58.1	51.7	48.6	57.9	58.1
Heavy Trucks:	70.5	58.7	49.8	49.5	59.7	59.9
Vehicle Noise:	72.9	67.9	65.0	68.8	75.0	75.1

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3783
65 dBA	1196
70 dBA	378
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-103
Traffic Noise Prediction Model (CALVENO)**

Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	West of Corral Hollow		

PROJECT DATA				SITE DATA				
Centerline Dist to Barrier	0			Road Grade:	0			
Barrier (0=wall, 1= berm):	0			Average Daily Traffic:	3076.7			
Receiver Barrier Dist:	0			Peak Hour Traffic:	3076.7			
Centerline Dist. To Observer:	100			Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0			Centerline Separation:	36			
Barrier Far Lane CL Dist:	0			NOISE INPUTS				
Pad Elevation:	0.5			Site conditions HARD SITE				
Road Elevation:	0			FLEET MIX				
Observer Height (above grade):	0			Type	Day	Evening	Night	Daily
Barrier Height:	0			Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90			Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)				Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0							
Medium Trucks:	2.3							
Heavy Trucks:	8							

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.8	66.6	64.8	68.8	74.9	75.0
Medium Trucks:	66.1	58.2	51.8	48.7	58.0	58.3
Heavy Trucks:	70.6	58.8	49.9	49.6	59.8	60.0
Vehicle Noise:	73.0	68.0	65.2	68.9	75.1	75.2

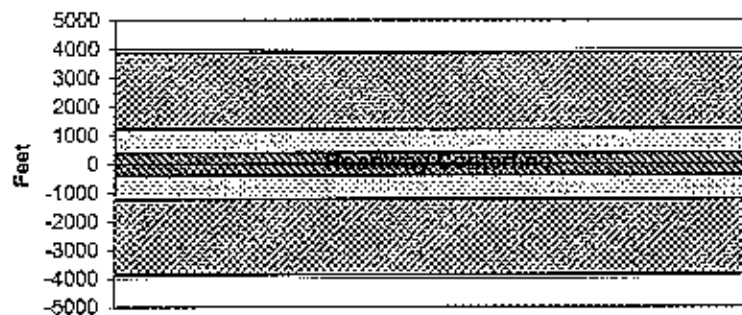
MITIGATED NOISE LEVELS (With topographic or barrier attenuation)

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR

Unmitigated	
60 dBA	3880
65 dBA	1227
70 dBA	388
Mitigated	
60 dBA	
65 dBA	
70 dBA	

Roadway Centerline Noise Contour



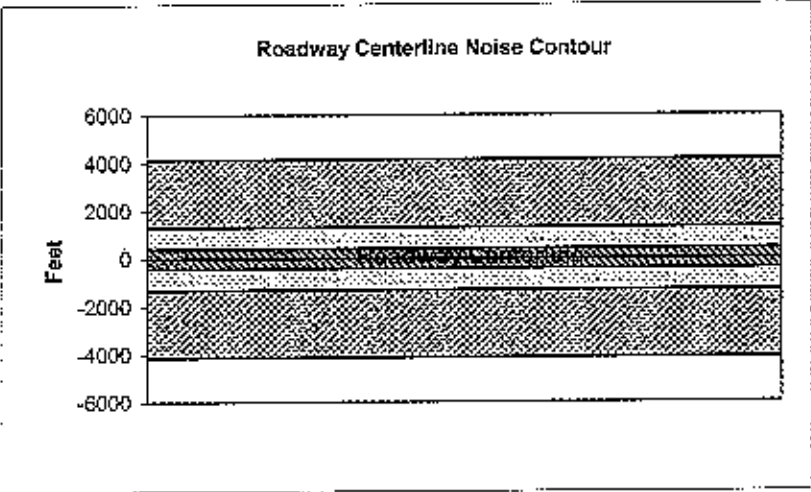
**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name: Ellis Specific Plan		Scenario: Future Plus Project	
Analyst: Maria Cadiz		Job #: 40-100187	
Roadway: Grant Line			
Road Segment: East of Byron			
PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	32895
Receiver Barrier Dist:	0	Peak Hour Traffic:	3289.5
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.1	66.9	65.1	69.0	75.2	75.3
Medium Trucks:	66.4	58.5	52.1	49.0	58.3	58.6
Heavy Trucks:	70.9	59.1	50.2	49.9	60.1	60.3
Vehicle Noise:	73.3	68.3	65.4	69.2	75.4	75.5

Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

Unmitigated	
60 dBA	4148
65 dBA	1312
70 dBA	415
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

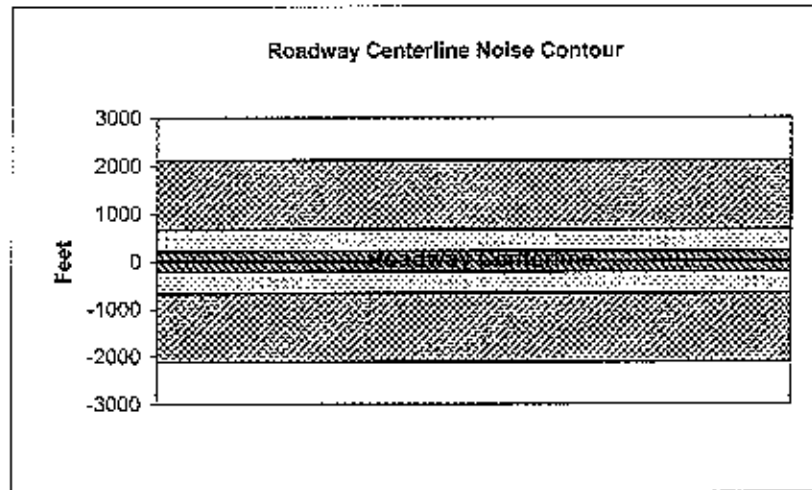
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Grant Line		
Road Segment:	East of Byron		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	16770
Receiver Barrier Dist:	0	Peak Hour Traffic:	1677
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	36
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.2	64.0	62.1	66.1	72.3	72.4
Medium Trucks:	63.5	55.5	49.2	46.1	55.3	55.6
Heavy Trucks:	68.0	56.2	47.2	47.0	57.2	57.3
Vehicle Noise:	70.3	65.3	62.5	66.2	72.5	72.6

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2117
65 dBA	670
70 dBA	212
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

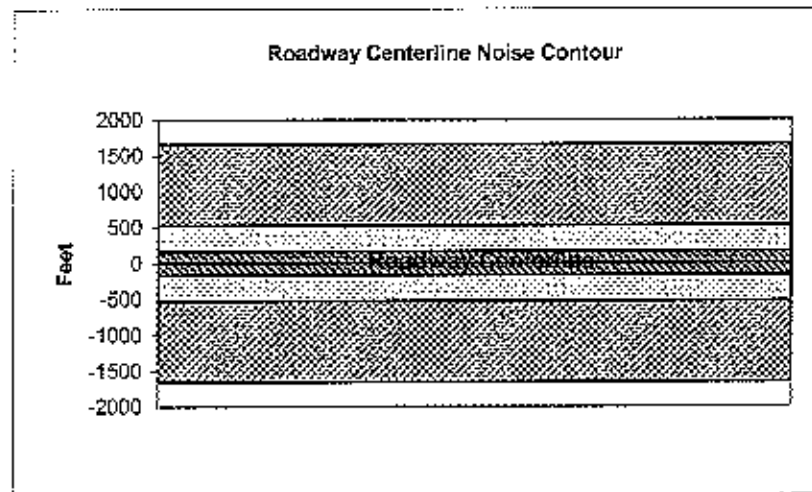
Project Name: Ellis Specific Plan	Scenario: Future Plus Project
Analyst: Maria Cadiz	Job #: 40-100187
Roadway: Byron	
Road Segment: South of Grant Line	

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2638.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	2638.1
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	54.5	63.2	61.4	65.4	71.5	71.6
Medium Trucks:	64.2	56.2	49.9	46.8	56.0	56.3
Heavy Trucks:	69.4	57.6	48.6	48.3	58.9	59.1
Vehicle Noise:	71.8	65.2	62.0	65.5	71.9	72.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	1662
65 dBA	526
70 dBA	166
Mitigated	
60 dBA	
65 dBA	
70 dBA	



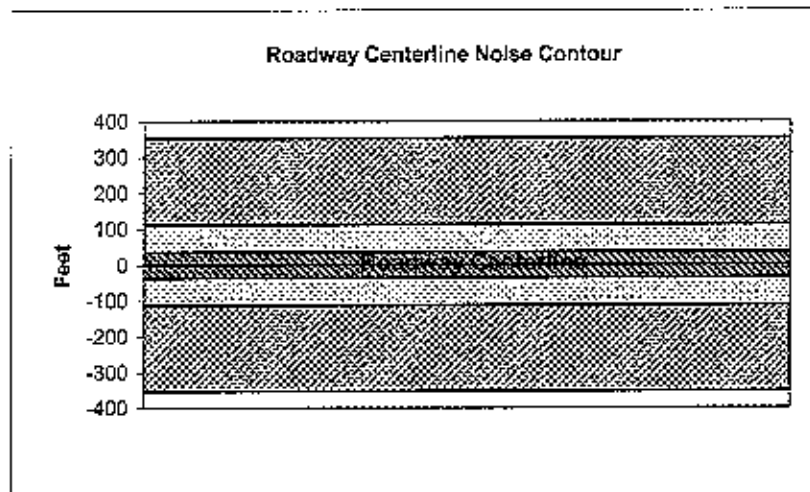
**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

Project Name: Ellis Specific Plan		Scenario: Future Plus Project	
Analyst: Maria Cadiz		Job #: 40-100187	
Roadway: Byron			
Road Segment: North of Grant Line			
PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	561.2
Receiver Barrier Dist:	0	Peak Hour Traffic:	561.2
Centerline Dist. To Observer:	100	Vehicle Speed:	35
Barrier Near Lane CL Dist:	0	Centerline Separation:	12
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0		Evening
Rt View: 90	Lft View: -90		Night
			Daily
NOISE SOURCE ELEVATIONS (Feet)			
Autos: 0			
Medium Trucks: 2.3			
Heavy Trucks: 8			

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	47.7	56.5	54.7	58.6	64.8	64.9
Medium Trucks:	57.4	49.5	43.1	40.1	49.3	49.6
Heavy Trucks:	62.7	50.9	41.9	41.6	52.2	52.4
Vehicle Noise:	65.1	58.5	55.2	58.8	65.1	65.2

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	354
65 dBA	112
70 dBA	35
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

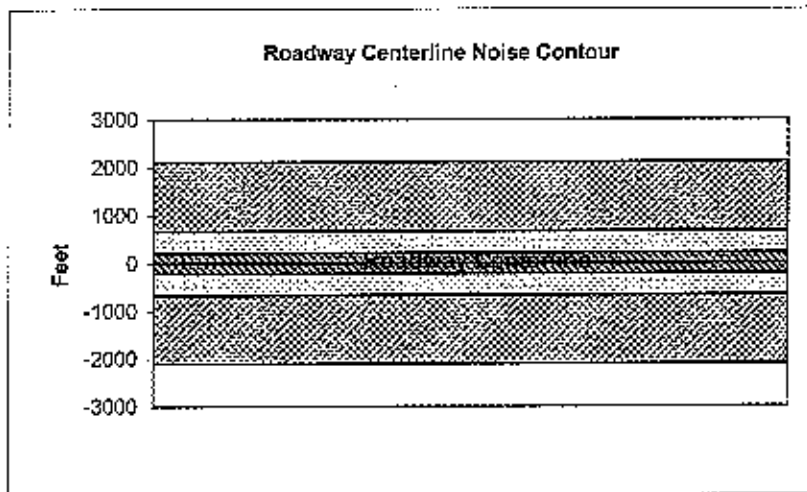
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hollow Road		
Road Segment:	East of 580 Ramps		

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	16770
Receiver Barrier Dist:	0	Peak Hour Traffic:	1677
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far Lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	55.3	64.1	62.2	66.2	72.4	72.5
Medium Trucks:	63.6	55.6	49.3	46.2	55.4	55.7
Heavy Trucks:	68.1	56.3	47.3	47.1	57.3	57.4
Vehicle Noise:	70.4	65.4	62.6	66.3	72.6	72.7

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2113
65 dBA	668
70 dBA	211
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

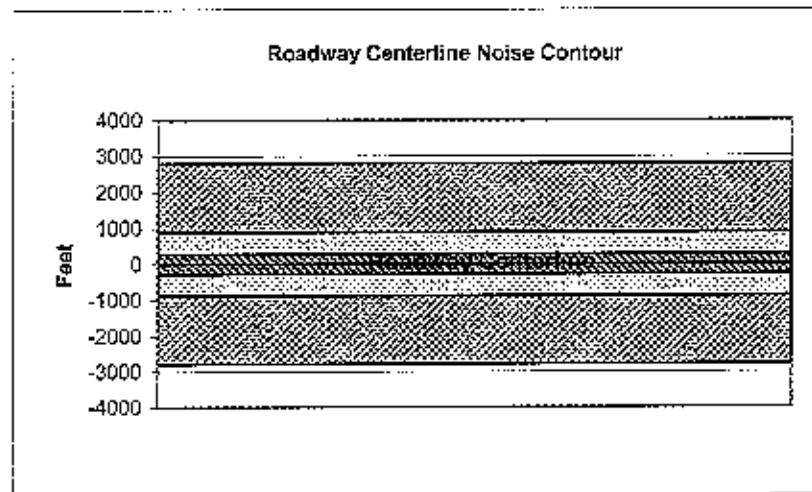
Project Name:	Ellis Specific Plan	Scenario:	Future Plus Project
Analyst:	Maria Cadiz	Job #:	40-100187
Roadway:	Corral Hallow Road		
Road Segment:	West of 580 Ramps		

PROJECT DATA			SITE DATA				
Centerline Dist to Barrier	0		Road Grade:	0			
Barrier (0=wall, 1= berm):	0		Average Daily Traffic:	22188			
Receiver Barrier Dist:	0		Peak Hour Traffic:	2218.8			
Centerline Dist. To Observer:	100		Vehicle Speed:	45			
Barrier Near Lane CL Dist:	0		Centerline Separation:	30			
Barrier Far lane CL Dist:	0		NOISE INPUTS				
Pad Elevation:	0.5		Site conditions HARD SITE				
Road Elevation:	0		FLEET MIX				
Observer Height (above grade):	0		Type	Day	Evening	Night	Daily
Barrier Height:	0		Auto	0.777	0.127	0.96	0.9742
Rt View: 90	Lft View: -90		Med. Truck	0.8743	0.0505	0.0752	0.0184
NOISE SOURCE ELEVATIONS (Feet)			Heavy Truck	0.891	0.0284	0.0806	0.0074
Autos:	0						
Medium Trucks:	2.3						
Heavy Trucks:	8						

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	58.5	65.3	63.4	67.4	73.6	73.7
Medium Trucks:	64.8	56.9	50.5	47.4	56.7	56.9
Heavy Trucks:	69.3	57.5	48.5	48.3	58.5	58.7
Vehicle Noise:	71.7	66.6	63.8	67.5	73.8	73.9

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2799
65 dBA	885
70 dBA	280
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

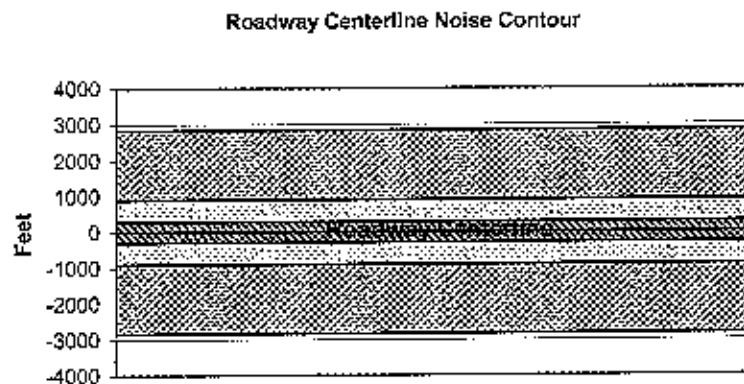
Project Name: Ellis Specific Plan	Scenario: Future Plus Project
Analyst: Maria Cadiz	Job #: 40-100187
Roadway: Corral Hollow Road	
Road Segment: North of Linnie	

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2251.1
Receiver Barrier Dist:	0	Peak Hour Traffic:	2251.1
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
NOISE SOURCE ELEVATIONS (Feet)		Heavy Truck	0.891
Autos:	0	Evening	0.127
Medium Trucks:	2.3	Night	0.96
Heavy Trucks:	8	Daily	0.9742

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	56.6	65.4	63.5	67.6	73.6	73.7
Medium Trucks:	64.9	58.9	50.5	47.5	56.7	57.0
Heavy Trucks:	69.4	57.6	48.6	48.3	58.6	58.7
Vehicle Noise:	71.7	66.7	63.9	67.6	73.8	74.0

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	2838
65 dBA	897
70 dBA	284
Mitigated	
60 dBA	
65 dBA	
70 dBA	



**Federal Highway Administration RD-77-108
Traffic Noise Prediction Model (CALVENO)**

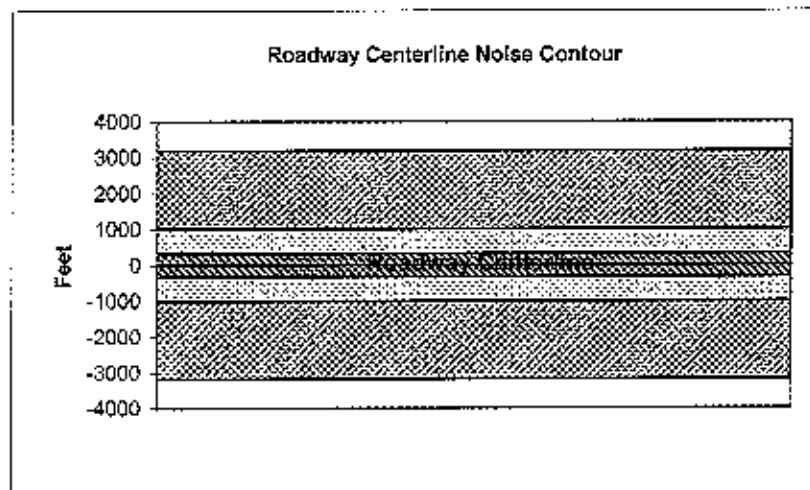
Project Name: Ellis Specific Plan	Scenario: Future Plus Project
Analyst: Maria Cadiz	Job #: 40-100187
Roadway: Corral Hollow Road	
Road Segment: South of Valpico	

PROJECT DATA		SITE DATA	
Centerline Dist to Barrier	0	Road Grade:	0
Barrier (0=wall, 1= berm):	0	Average Daily Traffic:	2528.4
Receiver Barrier Dist:	0	Peak Hour Traffic:	2528.4
Centerline Dist. To Observer:	100	Vehicle Speed:	45
Barrier Near Lane CL Dist:	0	Centerline Separation:	30
Barrier Far lane CL Dist:	0	NOISE INPUTS	
Pad Elevation:	0.5	Site conditions HARD SITE	
Road Elevation:	0	FLEET MIX	
Observer Height (above grade):	0	Type	Day
Barrier Height:	0	Auto	0.777
Rt View: 90	Lft View: -90	Med. Truck	0.8743
		Heavy Truck	0.891
NOISE SOURCE ELEVATIONS (Feet)		Evening	Night
Autos: 0			Daily
Medium Trucks: 2.3			
Heavy Trucks: 8			

UNMITIGATED NOISE LEVELS (No topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:	57.1	65.9	64.0	68.0	74.1	74.2
Medium Trucks:	65.4	57.4	51.0	48.0	57.2	57.5
Heavy Trucks:	69.9	58.1	49.1	48.8	59.1	59.2
Vehicle Noise:	72.2	67.2	64.4	68.1	74.4	74.5

MITIGATED NOISE LEVELS (With topographic or barrier attenuation)						
Vehicle Type	Peak Leq	Leq Day	Leq Evening	Leq Night	Ldn	CNEL
Autos:						
Medium Trucks:						
Heavy Trucks:						
Vehicle Noise:						

CENTERLINE NOISE CONTOUR	
Unmitigated	
60 dBA	3192
65 dBA	1009
70 dBA	319
Mitigated	
60 dBA	
65 dBA	
70 dBA	





E Traffic Data

Final Report

Transportation Impact Analysis for the Ellis Specific Plan in the City of Tracy



FEHR & PEERS
TRANSPORTATION CONSULTANTS

*100 Pringle Ave, Suite 600
Walnut Creek, CA*

*Prepared for:
City of Tracy, CA
RBF Consulting*

*December 2007
WC06-2318*

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1. INTRODUCTION

This report presents the findings, conclusions, and recommendations of the transportation impact analysis conducted by Fehr & Peers Transportation Consultants for the proposed Ellis Specific Plan in the City of Tracy. This chapter provides an overview of the project, describes the analysis scenarios, and discusses the analysis methods and significance standards used.

PROJECT DESCRIPTION

The proposed Ellis Specific Plan (ESP) comprises approximately 320 acres of land defined as Urban Reserve 10 in the City of Tracy General Plan. The ESP includes residential, commercial, office/professional, and recreational uses. The plan proposes to accommodate up to 2,250 residential units; 180,000 square feet of commercial use; and approximately 40 acres of improved parks, including a 20-acre aquatic park.

As shown in Figure 1, the project site is located north of the Union Pacific Rail line outside of the current City boundary between Corral Hollow Road and Lammers Road.

ANALYSIS SCENARIOS

This transportation analysis evaluated the following four scenarios:

Scenario 1: Existing Conditions – Existing volumes obtained from counts.

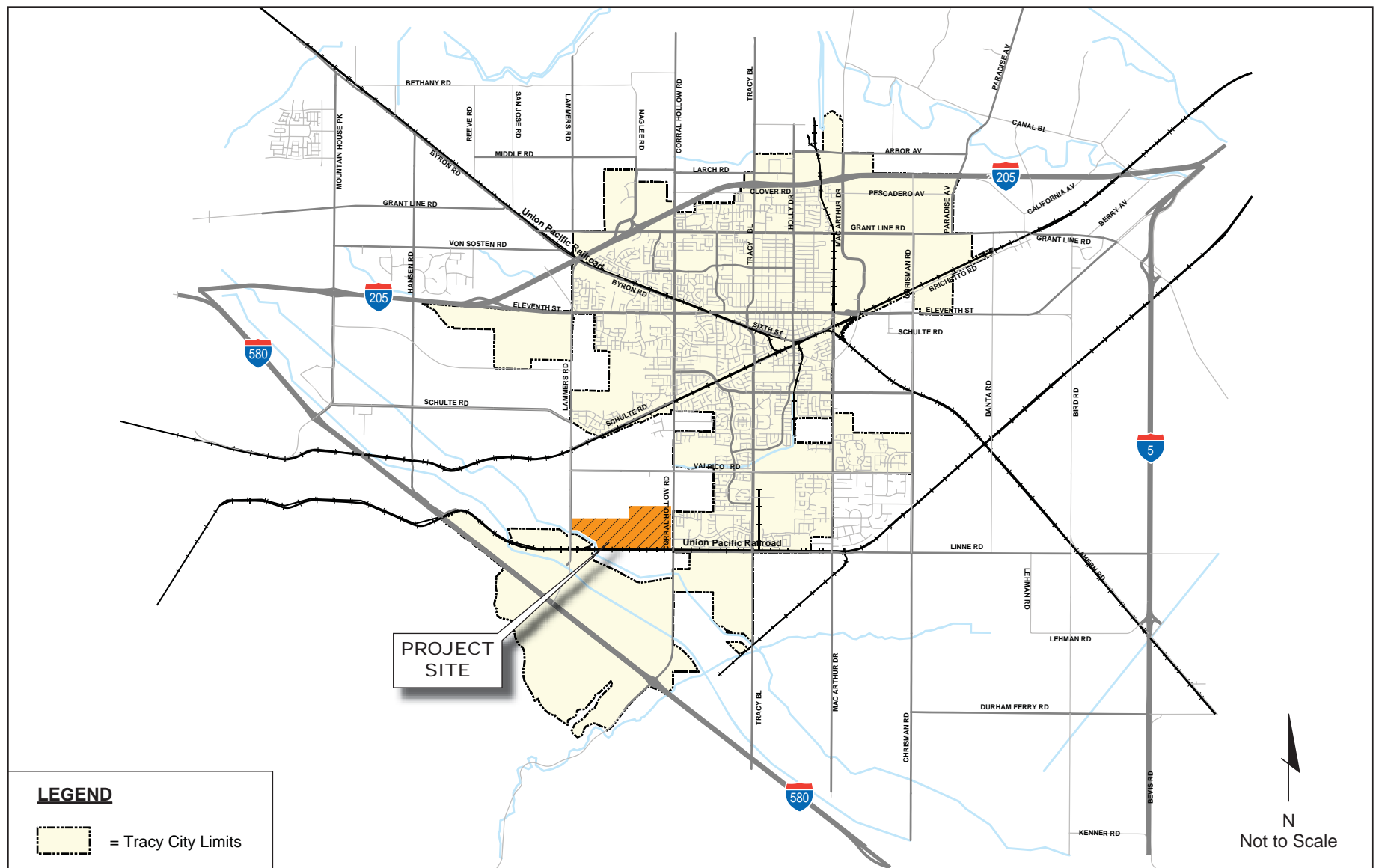
Scenario 2: Existing Plus Project Conditions – This scenario uses the same traffic volumes as Scenario 1 with addition of the estimated traffic generated by the ESP.

Scenario 3: Cumulative No Project Conditions – This scenario looks at future forecast conditions, using the Tracy General Plan Traffic Model as the basis for generating regional cumulative traffic forecasts. For this analysis, growth to year 2030 in the City of Tracy was assumed to occur consistent with General Plan policies and residential growth limits. The No Project scenario assumes no development on the ESP site, but rather, development elsewhere in the City per General Plan policies on residential growth limits.

Scenario 4: Cumulative With Project Conditions – The With Project scenario assumes full buildout of the proposed ESP, with 2,250 residential dwelling units and 180,000 square feet of commercial space. The same number of units are not assumed to be developed elsewhere in the City, maintaining the same citywide level of growth to year 2030 as Scenario 3.

ANALYSIS METHODS AND MEASURES OF EFFECTIVENESS

Transportation engineers and planners commonly use a grading system called level of service (LOS) to measure and describe the operational status of the local roadway network. LOS is a description on the quality of a roadway facility's operation, ranging from LOS A (indicating free flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions in which traffic flows exceed design capacity, resulting in long queues and delays).



Freeway Segments

The level of service for a freeway section is based on measures of density (passenger cars/ lane/ mile) and travel speed (miles per hour [MPH]). Freeway LOS is a qualitative description of traffic flow based on speed, travel time, delay, and freedom to maneuver. Table 1 presents a summary of the relationship between LOS, density, and travel speed for freeway sections. The measures in Table 1 apply to segments along I-580.

TABLE 1 LEVEL OF SERVICE CRITERIA FOR FREEWAY SEGMENTS		
Level of Service	Maximum Density (Passenger cars / mile / lane)	Minimum Speed (MPH)
A	11	70
B	18	70
C	26	68.2
D	35	61.5
E	45	53.3
F	> 45	< 53.3

Notes:
Freeway mainline LOS based on a 70 MPH free-flow speed.
Source: *Highway Capacity Manual*, Chapter 23 (*Basic Freeway Sections*), Transportation Research Board, 2000.

Two-Lane Highways

On two-lane highways, LOS is measured as a function of percent time-spent-following and average travel speed. Percent time-spent-following is the percentage of time that a vehicle will spend following another vehicle. Percent time-spent-following represents the freedom to maneuver and the comfort and convenience of travel. The freedom to maneuver and the comfort and convenience of travel is compromised when a vehicle is forced to slow down and follow a slower moving vehicle. This typically occurs on two-lane highways where there are few opportunities to pass slower moving vehicles. In addition, curves, steep grades, and slow truck traffic can further compromise the freedom to maneuver and the comfort and convenience of travel. Average travel speed reflects vehicle mobility on a two-lane highway. Both measures impact the operational performance of two-lane highways that are primarily used for long-distance commute travel.

The Florida Department of Transportation (FDOT) has developed a number of level of service computational applications resulting from extensive research into roadway capacities, which no other state has undertaken. As a result, FDOT's conclusions are used throughout the country, and in California. Generalized LOS tables indicating service volume thresholds based on area type, roadway facility type, and analysis time period have been produced based on extensive data collection. Table 2 summarizes the LOS criteria for two-lane uninterrupted flow highways. The criteria presented are based on a combination of research and generalized assumptions on percent time following. They apply to Patterson Pass Road and Tesla Road.

**TABLE 2
LEVEL OF SERVICE CRITERIA FOR TWO-LANE HIGHWAYS**

LOS	Directional Capacity (vph)
A	120
B	250
C	410
D	650
E	1,060

Note: LOS F applies whenever the flow rate exceeds the segment capacity.

Source: Table 4-9, Generalized Peak Hour Peak Directional Volumes (Quality/Level of Service Handbook, FDOT).

Unsignalized Intersections

For unsignalized (all-way stop-controlled and side-street stop-controlled) intersections, the 2000 HCM (Transportation Research Board, National Research Council) methodology for unsignalized intersections is utilized. For unsignalized intersections, operations are defined by the average control delay for the entire intersection (measured in seconds per vehicle). The delay at an unsignalized intersection incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. Table 3 summarizes the relationship between delay time and LOS for unsignalized intersections.

**TABLE 3
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS**

LOS	Description	Average Control Delay (Seconds Per Vehicle)
A	Little or no delays	< 10.0
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays with intersection capacity exceeded	> 50.0

Source: 2000 Highway Capacity Manual (Transportation Research Board).

Signalized Intersections

The 2000 HCM methodology is also utilized for signalized intersections. With this methodology, operations are defined by the average control delay per vehicle (measured in seconds). For a signalized intersection, control delay is the portion of the total delay attributed to traffic signal operation. This includes delay associated with deceleration, acceleration, stopping, and moving up in the queue. Table 4 summarizes the relationship between delay time and LOS for signalized intersections.

TABLE 4 LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS		
LOS	Description	Average Control Delay (Seconds Per Vehicle)
A	Operations with very low delay occurring with favorable progression and/or short cycle length.	< 10.0
B	Operations with low delay occurring with good progression and/or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. This is considered to be the limit of acceptable delay.	55.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0
Source: <i>Highway Capacity Manual</i> , Transportation Research Board, 2000.		

ASSUMPTIONS

Traffic Conditions and Operations

Morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) weekday peak periods were analyzed as the worst-case scenario for both freeway segments and local intersections, as general area traffic levels are highest during these weekday periods. A Saturday analysis was considered to address potentially higher Aquatic Center trip generation on Saturdays compared to weekdays. However, traffic volumes on the surrounding roadways during the Saturday peak hour are generally about half of weekday PM peak hour volumes. This, coupled with generally lower traffic generation from residential units on a Saturday, offsets the potential for higher trip generation and impacts related to Saturday traffic. Therefore, the highest one-hour weekday morning and evening volumes were used for this traffic analysis.

Study Locations

Rational screening criteria were applied to determine which intersections and freeway elements to include in the traffic analysis. PM peak hour trips generated by the ESP were used to screen potential study locations since the ESP would generate the most trips during the PM peak hour. A two-step screening process was

applied. Step one screened potential study locations based on General Plan allowable densities on the project site using the following criteria:

- Intersections operating near unacceptable conditions, and with project trips adding more than 5% of total trips
- Freeway and regional roadway segments that have project trips adding more than 1% of total volume

The first screening step resulted in the following regional segments along I-580 and across the Altamont Pass:

- | | |
|--|---|
| A. I-580 – Pleasanton Area | E. I-580 – Patterson Pass to Corral Hollow Road |
| B. I-580 – Livermore Area | F. I-580 – Corral Hollow Road to Chrisman Road |
| C. I-580 – Altamont Pass to I-205/I-580 Diverge | G. Tesla Road |
| D. I-580 – I-205/I-580 Diverge to Patterson Pass | H. Patterson Pass Road |

The first screening step also resulted in the following intersections in Tracy and San Joaquin County:

- | | |
|---|---|
| 1. Patterson Pass/ I-580 EB Ramps | 13. Tracy Boulevard/ Valpico Road |
| 2. Patterson Pass/ I-580 WB Ramps | 14. MacArthur Drive/ Linne Road |
| 3. Corral Hollow Road/ I-580 EB Ramps | 15. MacArthur Drive/ Valpico Road |
| 4. Corral Hollow Road/ I-580 WB Ramps | 16. Chrisman Road/ Linne Road |
| 5. Lammers Road/ Valpico Road | 17. Chrisman Road/ Valpico Road |
| 6. Lammers Road/ Schulte Road | 18. Chrisman Road/ Schulte Road |
| 7. Corral Hollow Road/ Linne Road | 19. Chrisman Road/ Eleventh Street |
| 8. Corral Hollow Road/ Valpico Road | 20. Lammers Road/ Eleventh Street |
| 9. Corral Hollow Road/ Schulte Road | 21. Byron Road/ Grant Line Road |
| 10. Corral Hollow Road/ Eleventh Street | 22. Lammers Road/ I-580 EB Ramps (Future) |
| 11. Corral Hollow Road/ Grant Line Road | 23. Lammers Road/ I-580 WB Ramps (Future) |
| 12. Tracy Boulevard/ Linne Road | |

The following intersections and roadway segments were also screened and found not to meet the criteria for further analysis:

- Mountain House Parkway/ I-205 interchange
- Lammers Road/ I-205 interchange
- Mountain House Parkway/ Schulte Road
- Schulte Road/ Hansen Road
- Schulte Road from Mountain House Parkway to Lammers Road

- Mountain House Parkway from I-580 to I-205
- Hansen Road from Schulte Road to Von Sosten Road

Detailed analysis was conducted at the study locations listed above under Existing conditions and with General Plan allowable densities on the Ellis site. Three segments on I-580 and Tesla and Patterson Pass Roads in Alameda County, along with six intersections plus the I-580 interchanges at Patterson Pass Road and at Corral Hollow Road were found to be deficient. These segments and intersections became the focus of detailed Project analysis:

- | | |
|---|---|
| A. I-580 – Pleasanton Area | 1. Patterson Pass/ I-580 EB Ramps |
| B. I-580 – Livermore Area | 2. Patterson Pass/ I-580 WB Ramps |
| C. I-580 – Altamont Pass to I-205/I-580 Diverge | 3. Corral Hollow Road/ I-580 EB Ramps |
| G. Tesla Road | 4. Corral Hollow Road/ I-580 WB Ramps |
| H. Patterson Pass Road | 6. Lammers Road/ Schulte Road |
| | 7. Corral Hollow Road/ Linne Road |
| | 8. Corral Hollow Road/ Valpico Road |
| | 10. Corral Hollow Road/ Eleventh Street |
| | 11. Corral Hollow Road/ Grant Line Road |
| | 21. Byron Road/ Grant Line Road |

2. SETTING

This chapter describes the project study area and the existing and cumulative roadway system's traffic operations.

PROJECT LOCATION

The ESP area is located approximately one mile north of Interstate 580 (I-580) and 3.5 miles south of Interstate 205 (I-205), and is bounded by agricultural land on the north, the Union Pacific Railroad on the south, the Delta Mendota Canal on the southwest, Corral Hollow Road on the east, and Lammers Road on the west. The project site is referred to as "Urban Reserve 10" in the City of Tracy General Plan, and abuts the western city limits. The existing transportation system in the City of Tracy consists of an extensive roadway system, a bicycle system, a public transit system with both bus and rail service, and a goods movement system. The existing local streets in the project vicinity consist largely of a network of rural roads, transitioning to upgraded arterials in proximity to the City of Tracy.

REGIONAL ROADWAYS

Interstate 580 provides the most direct regional access to the planning area via full access interchanges at Mountain House Parkway/ Patterson Pass Road and Corral Hollow Road. I-580 also provides access west to the Bay Area (via the Altamont Pass), and connects to I-5 south of Tracy. I-580 currently has four lanes (two lanes in each direction) along the segments adjacent to the City of Tracy with a posted speed limit of 70 miles per hour.

Interstate 205 provides direct access to central Tracy. It extends between I-580 and I-5 and runs east-west through the northern portion of the City of Tracy. Interchanges are provided at West Eleventh Street, Grant Line Road, Tracy Boulevard and MacArthur Drive. West of Eleventh Street, I-205 has six lanes (three lanes in each direction). The remaining sections of I-205 have two lanes in each direction. Construction is currently underway to widen I-205 to three lanes in each direction east of Eleventh Street. The posted speed limit on I-205 is 70 miles per hour east of Tracy and 65 miles per hour through Tracy and to the west.

Interstate 5 provides access south to Los Angeles and north to Sacramento and Redding. It connects to I-205 northeast of Tracy and to I-580 southeast of the project area.

Tesla Road is a two lane regional road that extends from Corral Hollow Road to Livermore Avenue, connecting Livermore and Tracy. Tesla Road is used as an alternate route to I-580 for motorists crossing the Altamont Pass during peak commute times.

Patterson Pass Road is a two lane regional road that extends from Livermore to I-580 where it becomes Mountain House Parkway. Patterson Pass Road leads into Lawrence Livermore National Laboratory in Alameda County.

LOCAL ROADWAYS

Corral Hollow Road extends from the San Joaquin/Alameda County border south of I-580 to north of I-205. South of Grant Line Road, Corral Hollow Road is four lanes with a posted speed limit varying between 40 and 45 miles per hour. In the segment between Schulte Road and Grant Line Road, the roadway includes a raised median. North of Grant Line Road, the roadway has two lanes with no median. No bike lanes are provided on Corral Hollow Road. This roadway also serves as a major truck route leading to nearby aggregate mining operations.

Lammers Road borders the ESP area on the west. Lammers Road is a major roadway originating just south of the ESP area and serves as the western boundary of the existing developed area of the City of Tracy. Two travel lanes are provided on Lammers Road. No median is provided. The posted speed limit within the City is 45 miles per hour. Lammers Road is designated within the City of Tracy Roadway Master Plan (RMP) as an urban expressway and future freeway connection between I-205 and I-580.

Valpico Road originates at Lammers Road and continues east into Tracy where it changes from two to four lanes. The RMP designates this roadway as a 4-lane major arterial.

Linne Road originates at Corral Hollow Road at the Project's eastern limit, extends eastward serving agricultural and aggregate mining areas, and passes adjacent to the Tracy Municipal Airport. Linne Road is designated within the RMP as part of the expressway network designed to bypass the freeways.

Schulte Road is a discontinuous roadway extending from Mountain House Parkway to Chrisman Road. For a short segment of the roadway (east of Mountain House Parkway and adjacent to the Safeway Warehouse Terminal), Schulte Road is a five-lane truck route. East of this segment, Schulte Road narrows to two travel lanes. Schulte Road terminates at the intersection with Lammers Road. The roadway commences again at Corral Hollow Road, approximately one-quarter mile north of its westerly segment. East of Corral Hollow Road, the roadway has been widened to four travel lanes. Schulte Road is identified within the RMP as a major arterial.

BICYCLE AND PEDESTRIAN CIRCULATION

Currently, no bicycle facilities are provided in the immediate Project area. The rural nature of the area's roadways generally requires that bicycles share the roadways with motor vehicles.

Within the City limits, some Class I bikeway facilities exist. Class I facilities are paved bicycle paths that are physically separated from the vehicular travel lane. The longest continuous Class I Bike Path is located east of Corral Hollow Road and extends from West Eleventh Street to south of Valpico Road. A second Class I facility runs parallel to North MacArthur Drive and extends from East Eleventh Street to I-205.

Class II facilities, which are striped bike lanes along the street, are generally found along the western portion of the existing urbanized area of the City. There are Class II bike lanes along portions of Corral Hollow Road and Tracy Boulevard.

Class III bicycle facilities are bike routes denoted by signs that are shared with vehicles along the roadway. Class III bicycle facilities are located mainly in the Central Tracy area.

While bicycle facilities are located throughout the City, gaps in the existing bicycle network make it difficult to travel east-west or north-south through the City.

Pedestrian facilities, such as sidewalks, crosswalks, and pedestrian signals, are absent in the Project area except for sidewalks along the eastern border where housing development is located adjacent to Corral Hollow Road.

TRANSIT SERVICES

The public transit system includes both bus and rail passenger components. The bus and rail system provides local and regional connectivity to residents of Tracy. Figure 2 displays the existing transit system within the City of Tracy.

The bus system operating within the City of Tracy includes the following services:

- Local fixed-route bus service operated by the City of Tracy (Tracer)
- Regional intercity fixed-route bus service operated by the San Joaquin Regional Transit District (SJRTD)
- Flexible fixed-route service operated by SJRTD
- Commuter express bus service operated by SJRTD
- Regional passenger rail service operated by Altamont Commuter Express (ACE)

Fixed-route services are those that adhere to a strict route and timetable with scheduled stop locations. Flexible-route service is demand-responsive, whereby a driver may deviate from the route to pick up and drop off passengers. Some transit agencies, such as SJRTD, also operate flexible fixed-route service, whereby fixed-route services may temporarily deviate from the designated route for elderly and disabled passengers.

Local Fixed-Route Bus Service

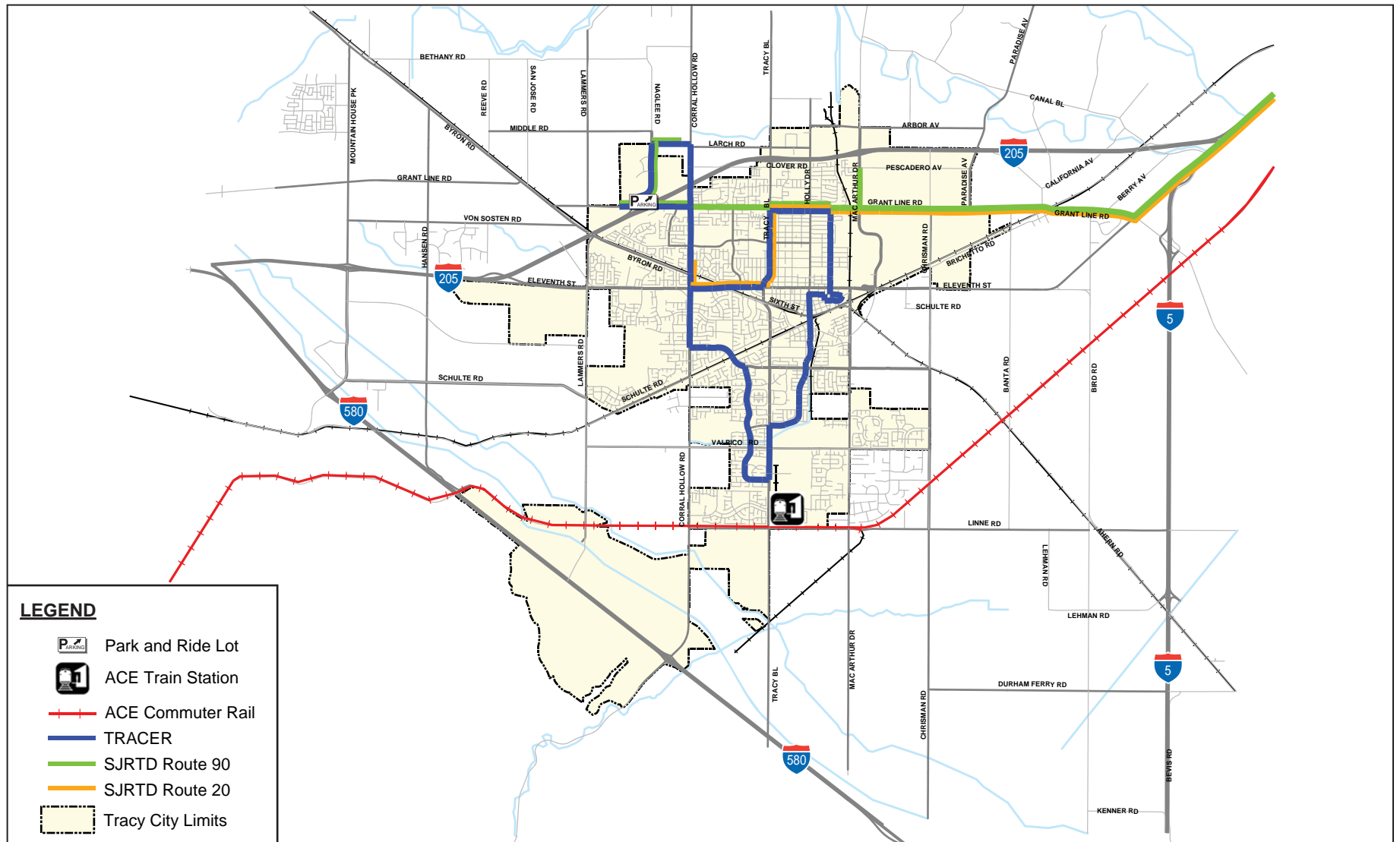
The City of Tracy operates a fixed-route bus system within the City, called Tracer. Tracer follows a loop within the existing city limits on roadways including Grant Line Road, Tracy Boulevard, West Eleventh Street, and Corral Hollow Road. Destinations served on the route include City Hall and the West Valley Mall. Service is currently provided on 60-minute headways with operations beginning at 7:00 AM on weekdays and 9:00 AM on Saturdays. Service ends at 7:00 PM on weekdays and 5:00 PM on Saturdays. No service is provided on Sundays.

Regional Intercity Fixed-Route Bus Service

The SJRTD operates one fixed-route bus line (Route 20) that serves the City of Tracy. This line connects the City of Tracy to Stockton and Lathrop along Interstate 5. Within the City of Tracy, Route 20 extends along Grant Line Road and East Eleventh Street and provides service to locations such as Wal-Mart (south of Grant Line Road) and the West Valley Mall. This route operates Monday through Friday from 5:40 AM to 7:20 PM. Route 20 does not operate on weekends.

SJRTD Flexible Fixed-Route Service

SJRTD also operates Route 90, which is a flexible fixed-route line. Within the City of Tracy, this route extends along Grant Line Road with stops at major locations such as Wal-Mart, West Valley Mall, the Naglee Park-and-Ride Facility (on Naglee Road at Grant Line Road), and the Prime Outlets on Pescadero Avenue. Route 90 operates on 1-hour, 45-minute headways in the evenings and 2-hour headways on weekends and holidays.



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SJRTD Commuter Bus Service

The SJRTD operates a number of commuter bus lines that connect cities in San Joaquin County with major employment locations in the San Francisco Bay Area including Pleasanton, Dublin, Livermore, Mountain View, Palo Alto, and Sunnyvale. These routes pick up and drop off passengers at the Tracy Naglee Park-and-Ride facility. Pick-up times vary between 4:00 AM and 6:00 AM and drop-off times vary between 4:00 PM and 6:00 PM.

Altamont Commuter Express

Altamont Commuter Express (ACE) is a passenger rail service connecting Stockton to San Jose. Trains operate Monday through Friday, excluding holidays. The ACE station for Tracy is located on Tracy Boulevard at Linne Road. Four westbound ACE trains per day arrive in Tracy between 4:50 AM and 10:00 AM. Four eastbound trains return to Tracy between 1:40 PM and 7:10 PM.

FREIGHT RAIL

The Union Pacific Railroad (UPRR) has two tracks that traverse Tracy in an east-west direction – one in the north (north of Valpico Road) and another in the south (north of Linne Road). UPRR is the largest railroad in North America with service in over 23 states. The freight lines through Tracy provide connectivity from the West Coast, including major ports such as Oakland, to all other areas of operation.

The main line runs through south Tracy along Linne Road. This line is used as both an industrial (10 freights per day) and commuter (via ACE train service) rail. The ACE station is also located on this line at the corner of Tracy Boulevard and Linne Road. The north line, with tracks that stop at the San Joaquin/Alameda County line, is no longer in service and is used only for storage.

TRUCK ROUTES

The City of Tracy has a specific City ordinance relating to truck routes. This ordinance defines weight restrictions, specifies the circumstances under which trucks may enter areas not designated as truck routes, and defines the truck routes within the City.

The weight restrictions that apply to trucks are specified in Section 3.08.300 of the Tracy Municipal Code. This section of the code states that trucks larger than 3 tons must stay on designated truck routes. Passenger buses under the jurisdiction of the Public Utilities Commission are exempt from this restriction.

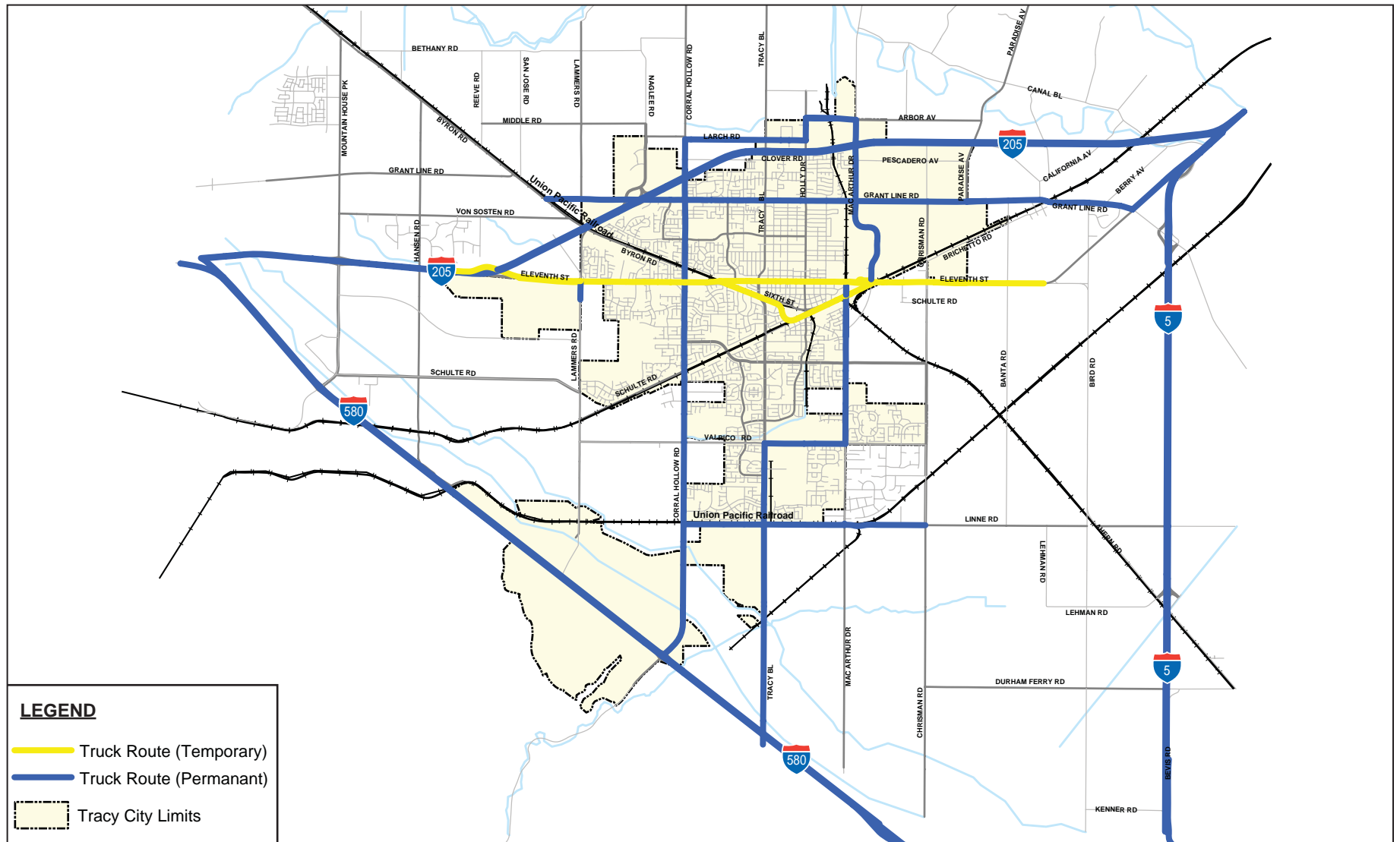
Section 3.08.300 also provides that trucks are allowed to temporarily deviate from the designated truck routes for purposes of loading and unloading. Otherwise, trucks should remain on the designated routes specified in Section 3.08.310 of the Tracy Municipal Code.

The designated truck routes in the City of Tracy are shown in Figure 3 and include:

- Corral Hollow Road (Larch Road to I-580)
- Larch Road (Corral Hollow Road to Holly Drive)
- Holly Drive (Larch Road to Arbor Avenue)
- Grant Line Road (west City limits to Corral Hollow Road and MacArthur Drive to east City limits)
- MacArthur Drive (Arbor Avenue to Valpico Road)
- Valpico Road (Tracy Boulevard to MacArthur Drive)

- Tracy Boulevard (south of Valpico Road)
- Linne Road (east City limits to west City limits)
- Eleventh Street (west City limits to Tracy Blvd and MacArthur Drive to east City limits)
- Sixth Street (MacArthur Drive to Central Avenue)
- Lammers Road (Byron Road to 0.5 miles south of Eleventh Street)
- Tracy Boulevard (Larch Road to I-205 and Valpico Road to south City limits)

I-205, I-580, and I-5 are also designated as truck routes by the State of California.



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EXISTING LEVEL OF SERVICE

Regional Roadway Segments

Existing freeway segment peak hour volumes were taken from Caltrans Freeway Volume data averaged across counts observed on Tuesdays, Wednesdays, and Thursdays in 2002, 2003, and 2004. Existing traffic volumes on Tesla Road and Patterson Pass Road were counted in May 2006. Table 5 reports the existing regional roadway segment LOS. The freeway segments along I-580 west of I-205 are operating at LOS F during at least one of the peak hours. East of the I-205, I-580 operates at LOS B during the AM peak hour and LOS B/C during the PM peak hour. Tesla Road and Patterson Pass Road carry 760 and 1,000 vehicles, respectively, in the westbound direction during the AM peak hour, and 450 vehicles in the eastbound direction during the PM peak hour. The LOS on both roads is LOS E during the AM and LOS D during the PM peak hour.

**TABLE 5
EXISTING SEGMENT PEAK HOUR LEVELS OF SERVICE ON REGIONAL ROADWAYS**

Study Segment	Number of Lanes	AM Peak Hour		PM Peak Hour	
		Volume ¹	Density/ LOS ²	Volume ¹	Density/ LOS ²
Freeway Analysis – Interstate 580 ³					
A. Pleasanton Area (Hopyard Rd. to El Charro Rd.)	4	8,800	>45/ F	7,200	F ⁴
B. Livermore Area (El Charro Rd. to Greenville Rd.)	4	8,200	F ⁴	7,400	33/ D
C. Altamont Pass to I-205/I-580 Merge/Diverge	4	7,000	34/ D	8,000	F ⁴
D. I-205/I-580 Merge/Diverge to Patterson Pass Rd.	2	1,500	12/ B	2,000	17/ B
E. Patterson Pass Rd. to Corral Hollow Rd.	2	1,500	12/ B	2,100	17/ B
F. Corral Hollow Rd. to Chrisman Rd.	2	1,600	13/ B	2,300	19/ C
County Road Analysis					
G. Tesla Road	1	760	E	450	D
H. Patterson Pass Road	1	1,000	E	450	D

Notes: **Bold** indicates LOS threshold is exceeded.

1. Peak hour volumes on I-580 segments from Caltrans (2002-2004). Peak hour volumes on Tesla Road and Patterson Pass Road are average of counts conducted on Tuesday and Wednesday in May 2006.
2. Reported LOS based on peak hour peak direction volume: Westbound for AM, Eastbound for PM. Unless otherwise noted, freeway segment LOS is based on vehicle density, according to the 2000 *Highway Capacity Manual*. County road LOS based on volumes, according to FDOT *Quality/Level of Service Handbook*.
3. Assumed per-lane capacity of 2,200 vehicles per hour and free-flow speed of 70 miles per hour on freeway facilities.
4. Source: 2006 *Level of Service Monitoring on the Congestion Management Program Roadway Network* (Alameda County CMA, July 2006)

Source: Fehr & Peers, 2007.

Intersection Operations

Intersection turning movement counts were collected in May and August 2006 for the morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak periods at the study intersections. The single hour with the highest traffic volume was identified and used for the peak hour analysis. The August counts were adjusted (based on adjacent roadway counts collected in August and May) to account for lower volumes in the summer months. Table 6 and Figure 4 show the existing intersection analysis results based on the 2000 HCM methodology. Currently, all study intersections except for one (Byron Road/ Grant Line Road) operate acceptably during the morning peak hour, and all except for two (Corral Hollow Road/ Valpico Road and Byron Road/ Grant Line Road) operate acceptably during the evening peak hour. The Corral Hollow Road/ Valpico Road intersection is all-way stop controlled, and meets the peak hour volume signal warrant. The north- and southbound approaches to the Byron Road/ Grant Line Road intersection located in San Joaquin County are controlled by stop signs. This intersection also meets the peak hour volume signal warrant.

**TABLE 6
EXISTING AM AND PM PEAK HOUR INTERSECTION LEVEL OF SERVICE**

Study Intersection	Acceptable LOS	Type of Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ² (Sec)	LOS	Delay ² (Sec)	LOS
1. Patterson Pass / I-580 EB	D	SSS	3 (18 EB)	A (C EB)	12 (41 EB)	B (E EB)
2. Patterson Pass / I-580 WB	D	SSS	5 (21 WB)	A (C WB)	1 (14 WB)	A (B WB)
3. Corral Hollow Rd. / I-580 EB	D	SSS	2 (14 EB)	A (B EB)	6 (22 EB)	A (C EB)
4. Corral Hollow Rd. / I-580 WB	D	SSS	6 (17 WB)	A (C WB)	2 (11 WB)	A (B WB)
5. Lammers Rd. / Valpico Rd.	C	SSS	9 (10 WB)	A (A WB)	8 (10 WB)	A (A WB)
6. Lammers Rd. / Schulte Rd.	C	AWS	14	B	14	B
7. Corral Hollow Rd. / Linne Rd.	C	SSS	6 (16 WB)	A (C WB)	3 (13 WB)	A (B WB)
8. Corral Hollow Rd. / Valpico Rd.	C	AWS	16	C	44	E
9. Corral Hollow Rd. / Schulte Rd.	C	Signal	21	C	17	B
10. Corral Hollow Rd. / Eleventh St.	D	Signal	32	C	36	D
11. Corral Hollow Rd. / Grant Line Rd.	C	Signal	23	C	31	C
12. Tracy Blvd. / Linne Rd.	C	AWS	11	B	10	B
13. Tracy Blvd. / Valpico Rd.	C	Signal	27	C	24	C
14. MacArthur Drive / Linne Road	C	AWS	10	A	10	A
15. MacArthur Drive / Valpico Road	C	Signal	19	B	21	C
16. Chrisman Road / Linne Road	C	AWS	10	B	10	A
17. Chrisman Road / Valpico Road ³	C	AWS	9	A	8	A
18. Chrisman Road / Schulte Road	C	SSS	10 (38 EB)	A (E EB)	5 (24 EB)	A (C EB)
19. Chrisman Road / Eleventh Street	C	Signal	9	A	13	B
20. Lammers Road / Eleventh Street	C	Signal	17	B	18	B
21. Byron Road / Grant Line Road	D	SSS	44 (>50 SB)	E (F SB)	>50 (>50 SB)	F (F SB)

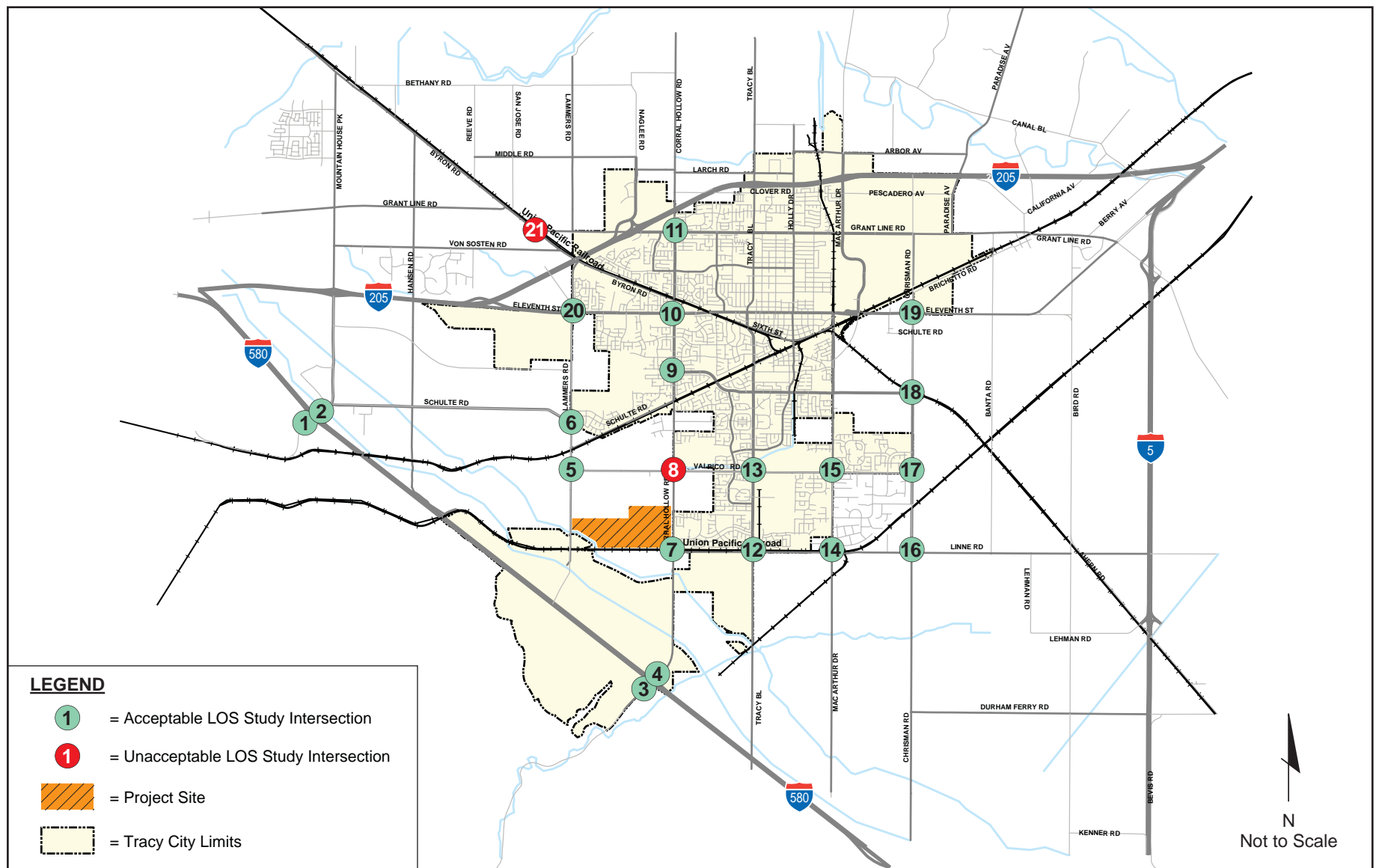
**TABLE 6
 EXISTING AM AND PM PEAK HOUR INTERSECTION LEVEL OF SERVICE**

Study Intersection	Acceptable LOS	Type of Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ² (Sec)	LOS	Delay ² (Sec)	LOS

Note: **Bold** indicates LOS threshold is exceeded.

- Signal = signalized intersection
 AWS = all-way stop-controlled intersection
 SSS = side-street stop-controlled intersection
- Intersection average delay and LOS are reported with the worst approach reported for SSS in parentheses.
- This intersection currently has a gated entrance to a Federal Installation on the westbound leg with negligible traffic during the peak hours. Therefore it was analyzed as a T intersection, with no westbound leg.

Source: Fehr & Peers, 2006.



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TRAFFIC FORECASTS

Traffic forecasts were prepared using the City of Tracy General Plan Traffic Model, which was updated in 2004 to be consistent with the current San Joaquin County Council of Governments' (SJCOG) regional transportation model, and to reflect the most recent information on future projects and planned roadway improvements in the City of Tracy per the City's 2006 General Plan.

Cumulative Development

The cumulative scenario for the Ellis Specific Plan traffic analysis was developed in consultation with City staff, and is consistent with the City's General Plan. This includes all development envisioned through 2030, with a development pattern consistent with the "Preferred" alternative of the 2005 Tracy General Plan Update EIR. The Cumulative No Project scenario assumes the residential units and commercial square footage that could develop in the ESP area would otherwise develop elsewhere in the City. Outside the Tracy Planning Area, the development assumptions used in preparing the traffic forecasts are consistent with the 2030 scenario of the SJCOG traffic model, as updated by the 2005 Regional Transportation Plan.

Table 7 summarizes cumulative development assumptions within the City of Tracy Sphere of Influence (SOI). The residential dwelling unit growth assumption is consistent with the City of Tracy's Measure A limits on residential permits through year 2030. Measure A limits residential permits to 600 units per year. The employment level being analyzed is consistent with the "Preferred Alternative" analyzed in the 2005 Tracy General Plan Update EIR, which assumed a 25-year future build out.

TABLE 7 CITY OF TRACY SOI CUMULATIVE DEVELOPMENT ASSUMPTIONS		
	Dwelling Units	Employment
Existing (2005)	28,157	28,834
Incremental Growth (to 2030)	10,943	26,487
<i>Citywide Cumulative Total</i>	<i>39,100</i>	<i>55,321</i>
Source: City of Tracy, Tracy General Plan Traffic Model.		

The development assumptions in Table 7 were integrated into the Tracy Citywide Traffic Model to estimate future traffic generation and future cumulative travel within the City of Tracy and across the Altamont Pass into Alameda County.

Assumed Cumulative Roadway Network

Cumulative Roadway Segment Improvements

The future cumulative roadway network includes certain roadway improvements, consistent with the City's General Plan, that support the level of development anticipated to be in place in 2030. Major improvements assumed under cumulative conditions include the following:

- *I-205*: Widen from 4 to 6 lanes east of Eleventh Street. This improvement is currently under construction.
- *I-580*: Widen to 8 lanes from Mountain House Parkway to Alameda County line. This is a Tier 1¹ project on SJCOG's 2005 Regional Transportation Plan (RTP).
- *Valpico Road*: Widen to 4 lanes between Lammers Road and MacArthur Drive.
- *Schulte Road*: Extend west on new alignment to Mountain House Parkway; widen to 6 lanes between Corral Hollow Road and Tracy Boulevard.
- *Eleventh Street*: Widen to 6 lanes west of Lammers Road.
- *Grant Line Road*: Widen to 6 lanes west of Tracy Boulevard.
- *Lammers Road*: Extend south to new interchange with I-580; widen to 6 lanes; realign north of Eleventh Street to new interchange with I-205.
- *Corral Hollow Road*: Widen to 4 lanes south of Schulte Road, and to 6 lanes north of Schulte Road.
- *Tracy Boulevard*: Widen to 4 lanes between Valpico Road and Linne Road.
- *MacArthur Drive*: Widen to 4 lanes between Schulte Road and Valpico Road.

I-205 widening to six lanes is currently under construction. The other major improvements listed above are elements of the City's Roadway Master Plan that are projected to be necessary to support the level of development assumed to be in place under future 2030 conditions. The new I-205/Lammers Road interchange design and supporting network is currently under study and review by Caltrans. Similar to the Tracy General Plan EIR traffic analysis, this analysis assumes Alternative 5A, as defined in the I-205/Lammers Road Interchange Project Study Report (PSR)², will be constructed. Funding for certain elements of the above has not yet been determined, and the ESP will be required to contribute its fair share toward these improvements via a finance and implementation plan that would be administered by the City.

Cumulative Intersection Improvements

Based on the roadway segment improvements and cumulative development identified above, specific intersection improvements need to be implemented in order for cumulative traffic to operate at acceptable conditions. Along with roadway widening and associated intersection geometric improvements, the Cumulative No Project analysis assumes that all but two study intersections (Linne Road/ Chrisman Road and Valpico Road/ Chrisman Road) would be signalized prior to 2030. The specific signalization, intersection geometry, and signal phasing changes that were assumed for the Cumulative analysis are described in Table 8 below.

¹ The *Regional Transportation Plan* (RTP) is a major planning document produced by the San Joaquin Council of Governments that identifies transportation improvements for the San Joaquin region. Projects identified as Tier 1 projects are anticipated to be financed and completed within the 20-year planning horizon of the RTP.

² Project Study Report – Route 205/Lammers Road Interchange (Caltrans, January 2006).

**TABLE 8
CUMULATIVE INTERSECTION IMPROVEMENTS**

Study Intersection	Added Signal?	Lane Geometry and Signal Phasing Changes
1. I-580 EB Ramps/ Patterson Pass Rd.	Y	<ul style="list-style-type: none"> Widen EB approach to provide 1 LT & 1 TR lane Widen NB approach to provide 1 Thru & 1 RT lane Widen SB approach to provide 2 LT & 1 Thru lane
2. I-580 WB Ramps/ Patterson Pass Rd.	Y	<ul style="list-style-type: none"> Widen WB approach to provide 1 TL & 1 RT lane Widen SB approach to provide 1 Thru lane & 1 RT lane
3. I-580 EB Ramps/ Corral Hollow Rd.	Y	<ul style="list-style-type: none"> Widen EB approach to provide 1 LT & 1 TR lane Widen NB approach to provide 1 Thru lane & 1 RT lane Widen SB approach to provide 1 LT lane & 2 Thru lanes
4. I-580 WB Ramps/ Corral Hollow Rd.	Y*	<ul style="list-style-type: none"> Widen WB approach to provide 1 TL & 1 RT lane Widen NB approach to add 1 Thru lane Widen SB approach to provide 2 Thru lanes & 1 RT lane
5. Valpico Rd./ Lammers Rd.	Y	<ul style="list-style-type: none"> Widen WB approach to provide 1 LT & 1 RT lane Widen NB approach to add 2 Thru lanes Widen SB approach to provide 1 SB LT & 3 Thru lanes
6. Schulte Rd./ Lammers Rd.	Y	<ul style="list-style-type: none"> Widen EB approach to provide 1 LT & 1 TR lane Add WB approach with 1 LT & 1 TR lane Widen NB approach to add 1 Thru lane & 1 TR lane Widen SB approach to add 1 TL & 1 Thru lane
7. Linne Rd./ Corral Hollow Rd.	Y	<ul style="list-style-type: none"> Convert intersection to T with no EB approach Widen WB approach to add 1 LT & 1 TR lane Widen NB approach to provide 2 Thru lanes & 1 RT lane Widen SB approach to provide 1 LT & 2 Thru lanes
8. Valpico Rd./ Corral Hollow Rd.	Y	<ul style="list-style-type: none"> Widen EB approach to provide 1 TL & 1 TR lane Widen WB approach to provide 1 LT, 1 Thru, & 1 TR lane Widen NB approach to provide 1 TL & 1 TR lane Widen SB approach to provide 1 LT, 1 Thru, & 1 TR lane
9. Schulte Rd./ Corral Hollow Rd.	N (already signalized)	<ul style="list-style-type: none"> Widen EB approach to add 1 LT & 1 Thru lane Widen WB approach to provide 1 LT, 3 Thru, & 1 RT lane Widen NB approach to provide 2 LT, 3 Thru, & 1 RT lane Widen SB approach to provide 2 LT, 3 Thru, & 1 RT lane Convert EB RT from permitted to free; added permitted + overlap phasing at new WB, NB, and SB RT lanes
10. Eleventh St./ Corral Hollow Rd.	N (already signalized)	<ul style="list-style-type: none"> Widen NB approach to add 1 Thru lane Widen SB approach to add 1 Thru lane Convert EB and WB RT lanes from permitted to free

**TABLE 8
CUMULATIVE INTERSECTION IMPROVEMENTS**

Study Intersection	Added Signal?	Lane Geometry and Signal Phasing Changes
11. Grant Line Rd./ Corral Hollow Rd.	N (already signalized)	<ul style="list-style-type: none"> Widen EB approach to add 1 LT & 1 Thru lane Widen WB approach to provide 2 LT, 3 Thru, & 1 RT lane Reduce NB LT lanes from 3 to 2, and add 1 Thru lane Widen SB approach to provide 2 LT, 3 Thru, & 1 RT lane Convert EB RT lane from permitted to free; made new WB and SB RT lanes free
12. Linne Rd./ Tracy Boulevard	Y	<ul style="list-style-type: none"> Widen EB approach to provide 2 LT & 3 Thru lanes Widen WB approach to provide 1 TL & 1 TR lane Widen SB approach to provide 1 LT, 2 Thru, & 1 RT lane
13. Valpico Rd./ Tracy Boulevard	N (already signalized)	<ul style="list-style-type: none"> Widen EB approach to add 1 Thru lane Widen WB approach to provide 1 LT, 2 Thru, & 1 RT lane Widen NB approach to provide 1 LT, 2 Thru, & 1 RT lane Widen SB approach to provide 2 LT, 1 Thru, & 1 RT lane
14. Linne Rd./ MacArthur Drive (S.)	Y	<ul style="list-style-type: none"> Widen EB approach to provide 1 LT, 1 Thru, & 1 TR lanes Widen WB approach to provide 1 TL & 1 TR lane
15. Valpico Rd./ MacArthur Drive (S.)	N (already signalized)	<ul style="list-style-type: none"> Widen EB approach to add 1 Thru lane Widen SB approach to add 1 Thru lane Convert WB and NB LT from protected to permitted
16. Linne Rd./ Chrisman Rd.	N	<ul style="list-style-type: none"> Widen EB approach to provide 1 TL & 1 TR lane Widen SB approach to provide 1 TL & 1 TR lane
17. Valpico Rd./ Chrisman Rd.	N	<ul style="list-style-type: none"> Convert NB approach from 1 LT & 1 Thru lane to 1 TR & 1 Thru lane Convert SB approach from 1 Thru & 1 RT lane to 1 Thru & 1 TR lane
18. Schulte Rd./ Chrisman Rd.	Y	<ul style="list-style-type: none"> Widen NB approach to add 1 Thru lane
19. Eleventh St./ Chrisman Rd.	N (already signalized)	<ul style="list-style-type: none"> Convert SB RT from permitted + overlap phasing to permitted
20. Eleventh St./ Lammers Rd.	N (already signalized)	<ul style="list-style-type: none"> Widen EB approach to add 1 RT lane Reduce NB Thru lanes from 2 to 1 and add a 3rd LT lane Reduce SB LT lanes from 2 to 1 lane Converted EB, NB, and SB RT lanes from permitted to free

Notes:

EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound

LT = Left-turn; RT = Right-turn; TR = Through-Right; TL = Through-Left

* Signal warrant is not met at this intersection; however, signal warrant is met at the adjacent intersection (I-580 EB Ramps/ Corral Hollow Rd); therefore, the complete interchange was assumed to be signalized in the cumulative cases.

CUMULATIVE LEVELS OF SERVICE

Regional Roadway Segments

Table 9 summarizes the Cumulative No Project segment analysis results. The I-580 segments east of the I-205/I-580 merge/diverge are projected to operate at acceptable levels of service under Cumulative No Project conditions. West of I-205, cumulative traffic demand is expected to exceed the capacity of the freeway and degrade operations to LOS F during both peak hours, which is unacceptable under the LOS standards set forth by the Alameda County CMP. The degradation of these freeway segments under cumulative conditions is an unavoidable cumulative impact.

**TABLE 9
CUMULATIVE NO PROJECT SEGMENT PEAK HOUR LEVELS OF SERVICE ON REGIONAL ROADWAYS**

TABLE 9 CUMULATIVE NO PROJECT SEGMENT PEAK HOUR LEVELS OF SERVICE ON REGIONAL ROADWAYS					
Study Segment	Number of Lanes	AM Peak Hour		PM Peak Hour	
		Volume ¹	Density/ LOS ²	Volume ¹	Density/ LOS ²
Freeway Analysis – Interstate 580 ³					
A. Pleasanton Area (Hopyard Rd. to El Charro Rd.)	4	9,900	>45/ F	11,900	>45/ F
B. Livermore Area (El Charro Rd. to Greenville Rd.)	4	10,200	>45/ F	11,400	>45/ F
C. Altamont Pass to I-205/I-580 Merge/Diverge	4	9,500	>45/ F	10,600	>45/ F
D. I-205/I-580 Merge/Diverge to Patterson Pass Rd.	4	3,300	13/ B	4,200	17/ B
E. Patterson Pass Rd. to Corral Hollow Rd.	3	4,200	22/ C	5,000	28/ D
F. Corral Hollow Rd. to Chrisman Rd.	2	2,400	19/ C	3,000	24/ C
County Road Analysis					
G. Tesla Road	1	1,050	E	1,000	E
H. Patterson Pass Road	1	1,350	F	1,300	F
Notes: Bold indicates LOS threshold is exceeded.					
1. Peak hour peak direction volumes are reported: Westbound for AM, Eastbound for PM. Cumulative (2030) demand volume estimate for segments A and B from <i>Triangle Traffic Study</i> (June 2006). Cumulative (2030) demand volume estimate for segments C, D, E, and F from City of Tracy General Plan Traffic Model.					
2. Reported LOS based on peak hour peak direction volume: Westbound for AM, Eastbound for PM. Freeway segment LOS based on vehicle density, according to the <i>2000 Highway Capacity Manual</i> . County road LOS based on volumes, according to FDOT <i>Quality/Level of Service Handbook</i> .					
3. Assumed per-lane capacity of 2,200 vehicles per hour and free-flow speed of 70 miles per hour on freeway facilities.					
Source: Fehr & Peers, 2007.					

Intersection Operations

Table 10 and Figure 5 summarize the Cumulative No Project study intersection analysis results based on the 2000 HCM methodology. The analysis shows all of the study intersections are expected to operate acceptably during the AM peak hour, and all but one are expected to operate at acceptable levels of service during the PM peak hour. The Corral Hollow Road/Schulte Road intersection is projected to operate at LOS D, with 39 seconds of delay.

Policy P2 under Objective CIR-1.3 of the City of Tracy General Plan allows individual locations to fall below the City's LOS standards in instances where the construction of physical improvements would be infeasible or would conflict with the character of the community. Operations could potentially be improved at this location by providing additional east-west connectivity and opportunity for traffic to disperse through the arterial network leading to/from the regional highway system. Alternatively, provision of a grade-separated urban interchange could improve operations to LOS C or better. The Corral Hollow Road/Schulte Road intersection may have right-of-way constraints that preclude it from further at-grade physical improvements. As an alternative to additional physical improvements at this location, the City may exempt this location under policy P2 of Objective CIR-1.3 of the General Plan.

TABLE 10 CUMULATIVE NO PROJECT AM AND PM PEAK HOUR INTERSECTION LEVEL OF SERVICE						
Study Intersection	Acceptable LOS	Type of Control ¹	AM Peak Hour		PM Peak Hour	
			Delay (Sec)	LOS	Delay (Sec)	LOS
1. Patterson Pass / I-580 EB	D	Signal	11	B	36	D
2. Patterson Pass / I-580 WB	D	Signal	5	A	2	A
3. Corral Hollow Rd. / I-580 EB	D	Signal	6	A	23	C
4. Corral Hollow Rd. / I-580 WB	D	Signal	9	A	5	A
5. Lammers Rd. / Valpico Rd.	C	Signal	9	A	8	A
6. Lammers Rd. / Schulte Rd.	C	Signal	6	A	11	B
7. Corral Hollow Rd. / Linne Rd.	C	Signal	10	B	27	C
8. Corral Hollow Rd. / Valpico Rd.	C	Signal	10	B	14	B
9. Corral Hollow Rd. / Schulte Rd.	C	Signal	25	C	39	D
10. Corral Hollow Rd. / Eleventh St.	D	Signal	26	C	54	D
11. Corral Hollow Rd. / Grant Line Rd.	C	Signal	16	B	33	C
12. Tracy Blvd. / Linne Rd.	C	Signal	16	B	22	C
13. Tracy Blvd. / Valpico Rd.	C	Signal	28	C	33	C
14. MacArthur Drive / Linne Road	C	Signal	7	A	9	A
15. MacArthur Drive / Valpico Road	C	Signal	14	B	20	B
16. Chrisman Road / Linne Road	C	AWS	10	A	10	A
17. Chrisman Road / Valpico Road	C	AWS	8	A	9	A
18. Chrisman Road / Schulte Road	C	Signal	7	A	8	A
19. Chrisman Road / Eleventh Street	C	Signal	10	A	12	B

TABLE 10
CUMULATIVE NO PROJECT AM AND PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection	Acceptable LOS	Type of Control ¹	AM Peak Hour		PM Peak Hour	
			Delay (Sec)	LOS	Delay (Sec)	LOS
20. Lammers Road / Eleventh Street	C	Signal	25	C	35	C
21. Byron Road / Grant Line Road	D	Signal	10	B	43	D
22. Lammers Road / I-580 EB	D	Signal	7	A	14	B
23. Lammers Road / I-580 WB	D	Signal	6	A	6	A

Note: **Bold** indicates LOS threshold is exceeded.

1. Signal = signalized intersection

AWS = all-way stop-controlled intersection

Source: Fehr & Peers, 2007.

3. PROJECT IMPACTS AND MITIGATION MEASURES

PROPOSED ELLIS SPECIFIC PLAN DEVELOPMENT ASSUMPTIONS

The City's traffic model was refined to reflect the proposed ESP. In essence, the model has been updated to include additional Traffic Analysis Zones (TAZs) to more accurately depict proposed land uses and roadway modifications specific to the proposed ESP. These TAZs are small subsets of land use data compiled in tabular form. Table 11 summarizes the information contained within these TAZs.

TABLE 11 ELLIS SPECIFIC PLAN DEVELOPMENT ASSUMPTIONS		
Land Use category	Acreage	Dwelling Units or Square Footage
Residential Mixed Low	122	789 du
Residential Mixed Medium	93	1,211 du
Residential High ¹	31.2	250 du total
Residential High: Village Center	7.4 total	
Commercial: Village Center ²		
Commercial: Limited Use ³	22.6	80,000 sq. ft.
Commercial: Unrestricted Use ⁴	5.6	40,000 sq. ft.
Neighborhood Parks ⁵	19.2	N/A
Park (Includes Swim Center) ⁶	20	N/A
Total	321	2,250 du 180,000 sq. ft. commercial

Notes:

1. 5-acre Transit Center is potential use as alternative to 100 units if constructed by 2020.
2. Assumed permitted uses include retail shops, art galleries, personal services, banking, professional office, cafes and restaurants, post office and/or civic facilities, and administrative offices.
3. Uses restricted to low density active recreation, agriculture production and sales, construction business, nurseries, storage units, and art studios. No uses resulting in greater than 50 persons in any one acre at any one time.
4. Located at the southeast corner of site.
5. To be distributed throughout the ESP residential neighborhoods.
6. Includes 50-meter swimming pool, recreational pool, water slide, lazy river, flow rider, sprayground area, and wet play structure, as well as a community park.

Source: Ellis Specific Plan Land Use Summary Table, December 4, 2007.

SIGNIFICANCE CRITERIA

As described in Chapter 1 above, level of service is a measure of the level of congestion experienced at an intersection or along a facility, ranging from LOS A to LOS F. Most cities and counties in California have established LOS standards of significance for intersections and facilities within the limits of the city or county.

City of Tracy

The City of Tracy has adopted the following policies relating to LOS under Objective CIR-1.3 of the General Plan:

- Policy P1. To the extent feasible, the City shall strive for LOS C on all streets and intersections, except as follows:
- LOS D shall be allowed on streets and at intersections within one-quarter (1/4) mile of any freeway. This lower standard is intended to discourage inter-regional traffic from using Tracy streets.
 - LOS E shall be allowed in the Downtown and Bowtie area of Tracy.
- Policy P2. The City may allow individual locations to fall below the City's LOS standards in instances where the construction of physical improvements would be infeasible, prohibitively expensive, significantly impact adjacent properties or the environment, or have a significant adverse effect on the character of the community.³
- Policy P3. Intersections may be permitted to fall below their adopted LOS standard on a temporary basis when the improvements necessary to preserve the LOS standard are in the process of construction or have been designed and funded but not yet constructed.
- Policy P5. For project-specific development approvals, the LOS at major street intersections shall be determined based on the direct estimation of peak hour conditions and should reflect the average condition prevailing throughout the peak hour of a typical weekday for all traffic using the intersection.

County of San Joaquin

The San Joaquin County Congestion Management Plan (CMP), a state-mandated program, is a mechanism employing growth management techniques, including traffic level of service requirements, development mitigation programs, transportation systems management, and capital improvement programming, for the purpose of controlling and/or reducing the cumulative regional impacts of development. With a large-scale development proposal, the CMP process must be taken into consideration. The following provisions of the CMP are relevant to the proposed Specific Plan Project:

- Proposed General Plan Amendments resulting in at least a 1,000 average daily traffic (ADT) increase over current general plan land uses require an analysis of impacts on the CMP roadway system.
- The CMP system includes Interstate 205, Interstate 580, Interstate 5, Eleventh Street and Tracy Boulevard.
- LOS thresholds for local freeways are set at "D," except that on I-580/I-205 between the Alameda County Line and Tracy Boulevard, LOS "F" is permissible, and on I-205 between Tracy Boulevard and I-5, LOS "E" is permissible.

³ The intersection of Corral Hollow Road and Eleventh Street has been exempted from the LOS C standard under this policy due to physical constraints that preclude it from further widening.

County of Alameda

The Alameda County Congestion Management Program, administered by the Alameda County Congestion Management Agency (CMA), requires a LOS E standard be maintained on all CMP routes in Alameda County, except for those areas designated as “infill opportunity zones” or those segments on the CMP system that were already operating at LOS F in the 1991 CMP baseline year.

On rural roads, the County of Alameda has a goal of LOS C or better, including Patterson Pass Road and Tesla Road. Any Project contribution to a cumulative condition that results in a LOS worse than the LOS C goal, or exacerbates an existing LOS deficiency, would be considered a significant impact.

Significance Determination

For this analysis, a traffic and circulation impact is considered significant if implementation of the Project would result in:

- The addition of a significant amount of traffic onto a freeway, which causes the level of service to go from acceptable to unacceptable, using CMP standards
- The addition of significant amounts of traffic to specific street segments or intersections to the extent that such facility will need to be expanded beyond the dimensions required to support assumed cumulative development. A traffic increase is considered significant if traffic from a project constitutes at least 5 percent of the total traffic on a facility and causes the level of service on that facility to go from acceptable to unacceptable, using the City of Tracy standards
- Result in inadequate parking capacity
- Result in inadequate emergency access
- Conflict with adopted policies, plans or programs supporting alternative transportation
- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks

EXISTING PLUS PROJECT CONDITIONS

To evaluate the Existing Plus Project conditions, the ESP area was incorporated into the City of Tracy Base Travel Demand Model. Project-specific roadway improvements were added to the existing model to represent future project access and internal circulation elements, and the land use described in Table 10 was used to represent ESP trip generators. Note that the transit center portion of the site is assumed to be non-operational within the timeframe of this analysis. At this time, it is uncertain if the Rail Commission would approve the site as a transit station site, or when permitting for development of the transit center would occur. Therefore no adjustments in traffic generation were made to account for transit-oriented components of the ESP.

Using calibrated trip generation rates from the traffic model, project trips were generated and assigned to the surrounding roadway network. Table 12 and Table 13 summarize the Project peak hour trip generation and distribution, respectively, under Existing Plus Project Conditions.

**TABLE 12
PROJECT VEHICLE TRIP GENERATION**

Land Use	Model Input	Size	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Residential Low Density	SF DU	789	77	436	513	641	361	1,002
Residential Medium Density	SF DU	1,211	118	669	787	984	554	1,538
Residential High Density	MF DU	250	13	80	93	115	65	180
Total residential¹		2,250	208	1,185	1,393	1,740	980	2,720
Retail	jobs (employees)	140	69	29	98	248	302	550
Service (Office)	jobs (employees)	90	27	4	31	12	31	43
Other (Warehousing)	jobs (employees)	80	23	2	25	6	21	27
Total Commercial^{1,2}		310	119	35	154	266	354	620
Total Residential and Commercial Trips			327	1,220	1,547	2,006	1,334	3,340
Aquatic Center ³	N/A	3 pools	21	9	30	71	65	136
Parks ⁴	N/A	19 acres	--	--	--	--	--	--
Total Trips			348	1,229	1,577	2,077	1,399	3,476

Notes:

du = dwelling unit

1. Trip generation based on the model-derived rates for Single Family Residential, Multi-Family Residential, Retail jobs and Service jobs, as follows:
Single Family AM Rate: T = 0.65 (X) (15% in, 85% out); PM Rate: T = 1.27 (X) (64% in, 36% out); T = Trip ends; X = Dwelling Units
Multi-Family AM Rate: T = 0.37 (X) (14% in, 86% out); PM Rate: T = 0.72 (X) (64% in, 36% out); T = Trip ends; X = Dwelling Units
Retail AM Rate: T = 0.7 (X) (70% in, 30% out); PM Rate: T = 3.93 (X) (45% in, 55% out); T = Trip ends; X = Jobs
Service AM Rate: T = 0.34 (X) (88% in, 12% out); PM Rate: T = 0.48 (X) (29% in, 71% out); T = Trip ends; X = Jobs
Other AM Rate: T = 0.31 (X) (91% in, 9% out); PM Rate: T = 0.34 (X) (24% in, 76% out); T = Trip ends; X = Jobs
2. Based on the project description, we assumed a 70%/30% retail/service split of the unrestricted commercial square footage: 60,000 sq. ft. in Village Center plus 40,000 sq. ft. in SE corner of site. Restricted commercial square footage in the Approach Zone was assumed to be warehousing. Jobs for each were based on model factors developed for Tracy: 2 employees per 1000 sq ft of retail space; 3 employees per 1000 sq ft of office space, and 1 employee per 1000 sq ft of other space.
3. PM peak hour trip rate and in/out split is based on vehicle counts conducted at the Roseville Aquatic Center in October, 2000. AM peak hour trips are based on communication with staff of the Roseville Aquatic Center in August, 2006. In/out split is based on vehicle counts conducted at the Morgan Hill Aquatic Center in August, 2006.
4. Neighborhood Park trips are assumed to occur primarily outside of peak hours and to be mainly internal and largely walk and bike trips.

**TABLE 13
EXISTING PROJECT TRIP DISTRIBUTION**

Travel To/From	AM Peak Hour		PM Peak Hour	
	Trips	Percent Distribution	Trips	Percent Distribution
ESP Area (Internal)	135	9%	613	18%
Tracy Planning Area	880	57%	2,273	67%
Altamont (West)	354	23%	311	9%
Byron (Mountain House/East Contra Costa)	17	1%	25	1%
I-5 North	106	7%	112	3%
I-580 East/SR 132	43	3%	59	2%
Total	1,535	100%	3,393	100%

Source: Fehr & Peers, 2007.

Based on calibrated trip generation rates, the proposed ESP would generate 1,535 vehicle trips in the AM peak hour and 3,393 vehicle trips in the PM peak hour. Due to the mix of residential and commercial uses envisioned for the specific plan, 9% of AM trips and 18% of PM trips are expected to stay within the ESP area. An additional 57% and 67%, respectively, of the AM and PM peak hour trips would travel to/from other parts of the Tracy planning area.

A Saturday trip generation analysis was considered to address potentially higher Aquatic Center trip generation on Saturdays compared to weekdays. According to data compiled in the Institute of Transportation Engineers' (ITE) *Trip Generation* (7th Edition) for similar recreational facilities, typical Saturday peak hour trips could be up to ten percent higher than weekday PM peak hour trips. Based on the trip generation shown in Table 12, this would equate to about 14 more trips for the proposed Aquatic Center during the Saturday peak hour compared to the weekday peak hour. On Saturdays with large events (such as high-attendance swim meets or city-wide events), the Aquatic Center trip generation could be substantially higher. In the *Morgan Hill Aquatic Center Transportation Impact Analysis*, Fehr & Peers estimated that Saturday peak hour trips could be up to 140% higher than typical weekday PM peak hour trips.⁴ This is extremely conservative, as it is based on maximum weekend use during a pool competition.

However, traffic volumes on the surrounding roadways during the Saturday peak hour are generally about half of PM peak hour volumes. For example, measured volumes on Corral Hollow Road east of I-580 are over 600 vehicles during the weekday PM peak hour and fewer than 300 vehicles on a Saturday peak hour. Therefore, even on a maximum-attendance Saturday, the additional Aquatic Center trips would be more than off-set by the lower overall traffic levels on surrounding roadways, so that any project impacts would be greatest on weekdays. For this reason, weekday trip generation was used to analyze project impacts.

Regional Roadway Segments

Project volumes were added to existing peak hour peak direction volumes to obtain Existing Plus Project traffic volumes on regional roads. Table 14 reports the Existing Plus Project regional roadway segment LOS.

⁴ Morgan Hill Aquatic Center Transportation Impact Analysis, Fehr & Peers, January 2003.

As indicated on Table 14, Project traffic would increase I-580 westbound volume west of I-205 by 2-3% during the AM peak hour. During the PM peak hour, Project traffic would increase I-580 eastbound volume west of I-205 by 2%, exacerbating an already unacceptable LOS condition. On Tesla Road and Patterson Pass Road, Project traffic would increase westbound volume by 12% and 7% respectively in the AM and eastbound volume by 16% and 18% respectively in the PM peak hour, exacerbating already unacceptable conditions on Tesla Road and Patterson Pass Road.

**TABLE 14
EXISTING PLUS PROJECT SEGMENT PEAK HOUR LEVELS OF SERVICE ON REGIONAL ROADWAYS**

Study Segment	Number of Lanes	AM Peak Hour			PM Peak Hour		
		Volume ¹	Density /LOS ²	% Volume Change from Existing	Volume ¹	Density /LOS ²	% Volume Change from Existing
Freeway Analysis – Interstate 580 ³							
A. Pleasanton Area	4	8,990	>45/ F	+2%	7,360	F ⁴	+2%
B. Livermore Area	4	8,390	F ⁴	+2%	7,560	34/ D	+2%
C. Altamont Pass to I-205/I-580 Merge/Diverge	4	7,190	35/ E	+3%	8,160	F ⁴	+2%
County Road Analysis							
G. Tesla Road	1	850	E	+12%	520	D	+16%
H. Patterson Pass Road	1	1,070	F	+7%	530	D	+18%

Notes: **Bold** indicates LOS threshold is exceeded and project contribution is significant.

1. Peak hour peak direction volumes are reported: Westbound for AM, Eastbound for PM.
2. Reported LOS based on peak hour peak direction volume. Unless otherwise noted, freeway segment LOS is based on vehicle density, according to the 2000 Highway Capacity Manual. County road LOS based on volumes, according to FDOT Quality/Level of Service Handbook.
3. Assumed per-lane capacity of 2,200 vehicles per hour and free-flow speed of 70 miles per hour on freeway facilities.
4. Existing operations at LOS F based on speed surveys. Project contribution to traffic increase would exacerbate LOS F condition.

Source: Fehr & Peers, 2007.

Intersection Operations

Table 15 and Figure 6 summarize the Existing Plus Project intersection analysis results based on the 2000 HCM methodology. No improvements were assumed for Existing Plus Project conditions. Five of the study intersections under Existing Plus Project conditions are projected to operate at unacceptable levels of service during either one or both peak periods. With the addition of traffic generated by implementation of the ESP, the following intersections would require mitigation in order to meet the LOS requirement as set forth by the Tracy General Plan:

- Lammers Road/ Schulte Road
- Corral Hollow Road/ Linne Road
- Corral Hollow Road/ Valpico Road

- Corral Hollow Road/ Grant Line Road
- Byron Road/ Grant Line Road

**TABLE 15
EXISTING PLUS PROJECT AM AND PM PEAK HOUR INTERSECTION LEVEL OF SERVICE**

Study Intersection	Acceptable LOS	Type of Control ¹	AM Peak Hour		PM Peak Hour	
			Delay ² (Sec)	LOS	Delay ² (Sec)	LOS
1. Patterson Pass / I-580 EB	D	SSS	3 (18 EB)	A (C EB)	34 (>50 EB)	D (F EB)
2. Patterson Pass / I-580 WB	D	SSS	5 (24 WB)	A (C WB)	1 (15 WB)	A (B WB)
3. Corral Hollow Rd. / I-580 EB	D	SSS	4 (21 EB)	A (C EB)	23 (>50 EB)	C (F EB)
4. Corral Hollow Rd. / I-580 WB	D	SSS	11 (39 WB)	A (E WB)	2 (16 WB)	A (C WB)
6. Lammers Rd. / Schulte Rd.	C	AWS	>50	F	38	E
7. Corral Hollow Rd. / Linne Rd.	C	SSS	27 (>50 WB)	D (F WB)	7 (21 WB)	A (C WB)
8. Corral Hollow Rd. / Valpico Rd.	C	AWS	>50	F	>50	F
10. Corral Hollow Rd. / Eleventh St.	D	Signal	35	C	40	D
11. Corral Hollow Rd. / Grant Line Rd.	C	Signal	24	C	38	D
21. Byron Road / Grant Line Road	D	SSS	>50 (>50 SB)	F (F SB)	>50 (>50 SB)	F (F SB)

Note: **Bold** indicates LOS threshold is exceeded and project contribution is significant.

1. Signal = signalized intersection

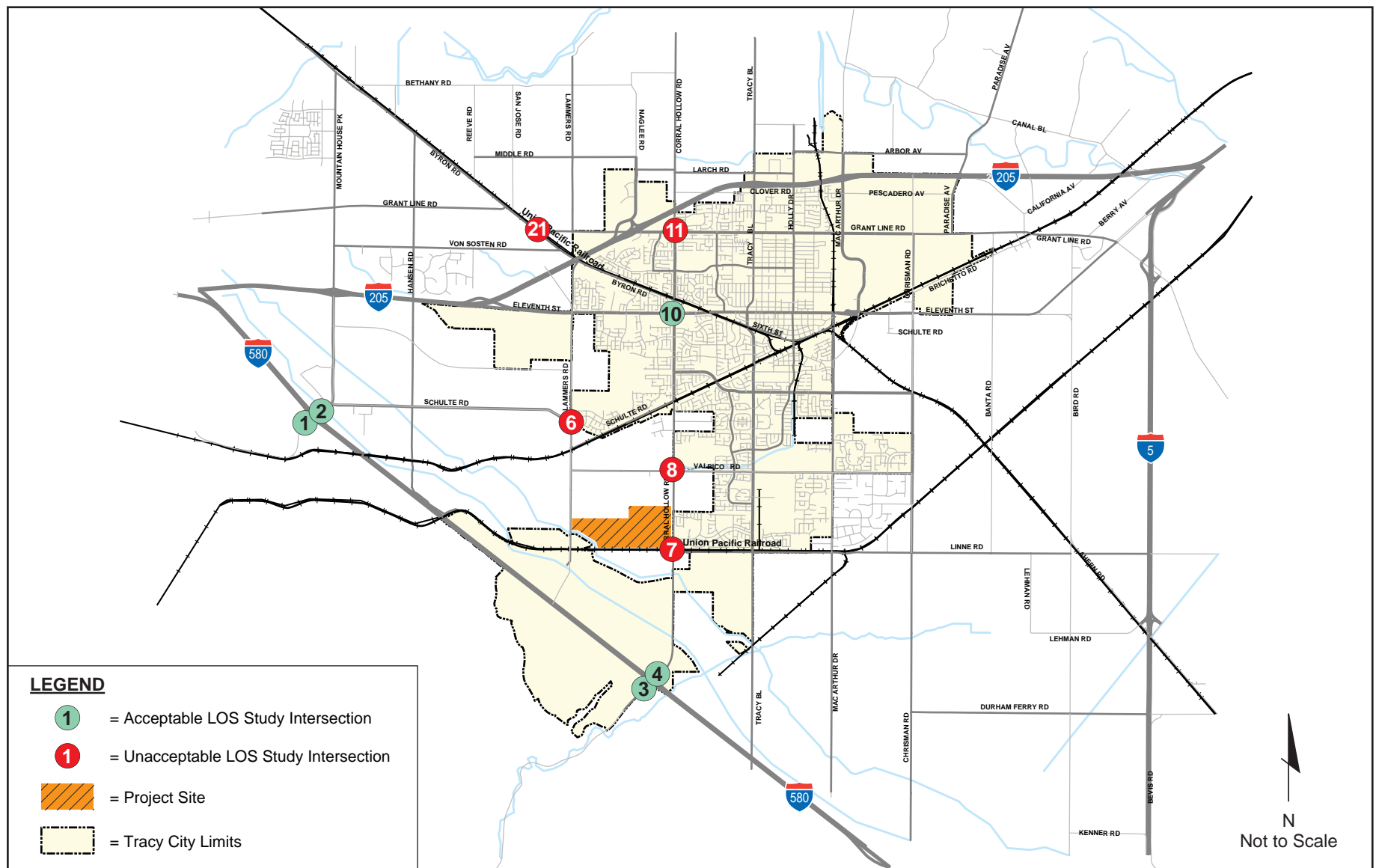
AWS = all-way stop-controlled intersection

SSS = side-street stop-controlled intersection

2. Intersection average delay and LOS are reported with the worst approach reported for SSS in parentheses.

Source: Fehr & Peers, 2007.

Implementation of the mitigations identified in Table 19 in the Impacts and Mitigations section below would result in acceptable levels of service at all locations. The project site plan at the time of this report was not sufficiently developed to analyze site circulation, ingress and egress.



Ellis Specific Plan

CUMULATIVE WITH PROJECT CONDITIONS

To evaluate the Cumulative With Project conditions, the ESP project was incorporated into the City of Tracy travel demand model. Project-specific roadway improvements were added to the cumulative model to represent Project access and internal circulation elements, and the land uses described above were used to represent the ESP area. As noted above, the Cumulative With Project scenario assumes the same level of development citywide as the Cumulative No Project scenario. Development growth consistent with the development potential of the ESP is allocated to the project site from other development areas in the City. Using the calibrated trip generation rates, Project trips were generated by the model and assigned to the surrounding roadway network. Table 16 summarizes the Project AM and PM peak hour trip distribution under Cumulative With Project Conditions.

**TABLE 16
CUMULATIVE PROJECT TRIP DISTRIBUTION**

Travel To/From	AM Peak Hour		PM Peak Hour	
	Trips	Percent Distribution	Trips	Percent Distribution
ESP Area (Internal)	74	5%	238	7%
Tracy Planning Area	1,150	75%	2,791	82%
Altamont (West)	227	15%	232	7%
Byron (Mountain House/East Contra Costa)	9	<1%	12	<1%
I-5 North	39	3%	56	2%
I-580 East/SR 132	36	2%	64	2%
Total	1,535	100%	3,393	100%

Source: Fehr & Peers, 2007

Regional Roadway Segments

Table 17 summarizes the Cumulative With Project segment analysis results. With implementation of the ESP, the I-580 segments east of the I-205/I-580 diverge would continue to operate at acceptable LOS D or better. West of I-205, peak hour peak-directional volumes on I-580 are expected to be at about the same levels as Cumulative No Project conditions. Although implementation of the ESP would not significantly change the traffic demand through the I-580 corridor, operations would continue to be LOS F, which is unacceptable under the LOS standards set forth by the Alameda CMP. The degradation of these freeway segments under Cumulative conditions is an unavoidable cumulative impact. Tesla Road and Patterson Pass Road would also operate at unacceptable LOS F conditions during the AM peak hour. The project is expected to add 8% and 1%, respectively, to these roadways, exacerbating unacceptable LOS conditions.

TABLE 17
CUMULATIVE WITH PROJECT SEGMENT PEAK HOUR LEVELS OF SERVICE ON REGIONAL ROADWAYS

Study Segment	Future Number of Lanes	AM Peak Hour			PM Peak Hour		
		Volume ¹	Density /LOS ²	% Volume Change from No Project	Volume ¹	Density /LOS ²	% Volume Change from No Project
Freeway Analysis – Interstate 580 ³							
A. Pleasanton Area	4	9,810	>45/ F	-1%	11,900	>45/ F	NC
B. Livermore Area	4	10,110	>45/ F	-1%	11,400	>45/ F	NC
C. Altamont Pass to I-205/I-580 Merge/Diverge	4	9,410	>45/ F	-1%	10,600	>45/ F	NC
D. I-205/I-580 Merge/Diverge to Patterson Pass Rd.	4	3,300	13/ B	NC	4,110	16/ B	-2%
E. Patterson Pass Rd. to Corral Hollow Rd.	3	4,010	21/ C	-5%	4,760	26/ D	-5%
F. Corral Hollow Rd. to Chrisman Rd.	2	2,400	19/ C	NC	2,910	23/ C	-3%
County Road Analysis							
G. Tesla Road	1	1,130	F	+8%	1,000	E	NC
H. Patterson Pass Road	1	1,370	F	+1%	1,300	F	NC
Notes: Bold indicates LOS threshold is exceeded.							
1. Peak hour peak direction volumes are reported: Westbound for AM, Eastbound for PM. Cumulative (2030) demand volume estimate for segments A and B from <i>Triangle Traffic Study</i> (June 2006). Cumulative (2030) demand volume estimate for segments C, D, E, and F from City of Tracy General Plan Traffic Model.							
2. Reported LOS based on peak hour peak direction volume: Westbound for AM, Eastbound for PM. Freeway segment LOS based on vehicle density, according to the <i>2000 Highway Capacity Manual</i> . County road LOS based on volumes, according to <i>FDOT Quality/Level of Service Handbook</i> .							
3. Assumed per-lane capacity of 2,200 vehicles per hour and free-flow speed of 70 miles per hour on freeway facilities.							
4. NC = No Change							
Source: Fehr & Peers, 2007.							

Intersection Operations

Table 18 and Figure 7 summarize the Cumulative With Project intersection analysis results based on the 2000 HCM methodology. The analysis shows all of the study intersections are expected to operate acceptably during both the AM and PM peak hours.

TABLE 18
CUMULATIVE WITH PROJECT AM AND PM PEAK HOUR INTERSECTION LEVEL OF SERVICE

Study Intersection	Acceptable LOS	AM Peak Hour		PM Peak Hour		
		Delay (Sec)	LOS	Delay (Sec)	LOS	Change in Delay ¹
1. Patterson Pass / I-580 EB	D	15	B	24	C	-12
2. Patterson Pass / I-580 WB	D	4	A	3	A	+1
3. Corral Hollow Rd. / I-580 EB	D	5	A	20	B	-3
4. Corral Hollow Rd. / I-580 WB	D	9	A	4	A	-1
5. Lammers Rd. / Valpico Rd.	C	9	A	8	A	NC
6. Lammers Rd. / Schulte Rd.	C	6	A	9	A	-2
7. Corral Hollow Rd. / Linne Rd.	C	10	B	20	C	-7
8. Corral Hollow Rd. / Valpico Rd.	C	11	B	16	B	+2
9. Corral Hollow Rd. / Schulte Rd.	C	23	C	33	C	-6
10. Corral Hollow Rd. / Eleventh St.	D	26	C	48	D	-6
11. Corral Hollow Rd. / Grant Line Rd.	C	16	B	32	C	-1
12. Tracy Blvd. / Linne Rd.	C	16	B	18	B	-4
13. Tracy Blvd. / Valpico Rd.	C	26	C	31	C	-2
14. MacArthur Drive / Linne Road	C	7	A	8	A	-1
15. MacArthur Drive / Valpico Road	C	15	B	19	B	-1
16. Chrisman Road / Linne Road ²	C	10	A	10	A	NC
17. Chrisman Road / Valpico Road ²	C	8	A	9	A	NC
18. Chrisman Road / Schulte Road	C	7	A	9	A	+1
19. Chrisman Road / Eleventh Street	C	9	A	11	B	-1
20. Lammers Road / Eleventh Street	C	24	C	32	C	-3
21. Byron Road / Grant Line Road	D	10	B	38	D	-5
22. Lammers Road / I-580 EB	D	7	A	10	B	-4
23. Lammers Road / I-580 WB	D	7	A	6	A	NC

Note: **Bold** indicates LOS threshold is exceeded.

1. PM peak hour change, in seconds of delay, relative to Cumulative No Project. NC=No Change.

2. All intersections are assumed to be signalized except Chrisman Road/ Linne Road and Chrisman Road/ Valpico Road, which are all-way stop controlled.

Source: Fehr & Peers, 2007.

IMPACTS AND MITIGATION MEASURES

Traffic Impacts

Impact 1: *The addition of project traffic to the regional transportation system would degrade LOS on I-580 west of I-205 to unacceptable traffic conditions during the AM and PM peak hours. This is a significant Existing Plus Project impact.*

Implementation of development within the ESP area would increase existing volumes approximately 2 percent during both the AM peak hour and the PM peak hour on I-580 west of the I-205/I-580 merge/diverge, exacerbating an already unacceptable LOS F condition. Based on the threshold of LOS E, the Project contribution to existing traffic on I-580 would be significant.

Mitigation 1: **Applicants of individual projects in the ESP area shall be required to pay regional Transportation Impact Fees. Prior to issuance of building permits for residential units, the applicant shall be required to pay a regional fee to fund regional transportation improvements.**

Implementation of the above mitigation measure would contribute to payment of funds for regional transportation improvements to be identified for I-580, I-205, and I-5. These improvements would increase the efficiency of regional transportation networks and improve regional traffic circulation. However, the implementation of the mitigation measure would not completely reduce potentially significant impacts to less-than-significant levels. Therefore, impacts to regional transportation systems are identified as significant and unavoidable.

Since there are no funded improvements that have been identified that could mitigate impacts to regional transportation facilities, several other mechanisms have been identified to address these existing and projected deficiencies. These mechanisms include:

- Improving the City's jobs/housing balance
- Encouraging the use of alternative transportation modes
- Improving parallel facilities/reliever routes
- Contributing to regional fee programs

Each of these strategies would provide some benefit to anticipated impacts on regional roadways such as I-580 through the Altamont Pass. However, these mechanisms, even when considered together, would not fully mitigate the impacts of future development projects on the regional roadways including both freeways and surface streets. Therefore, the traffic impacts from the proposed ESP on regional roadways are significant and unavoidable.

Impact 2: *The addition of Project traffic would exacerbate an existing unacceptable traffic condition on Tesla Road and Patterson Pass Road. This is a significant Existing Plus Project impact.*

Implementation of development within the ESP area would increase existing volumes approximately 12 percent during the AM peak hour on westbound Tesla Road and approximately 16 percent during the PM peak hour on eastbound Tesla Road, exacerbating an existing unacceptable traffic condition. Implementation of development within the ESP area would increase existing volumes approximately 7 percent during the AM peak hour on westbound Patterson Pass Road and approximately 18 percent during the PM peak hour on

eastbound Patterson Pass Road, exacerbating an existing unacceptable traffic condition. Based on Alameda County's LOS C threshold, the Project contribution to existing traffic on Tesla Road and Patterson Pass Road would be significant.

Mitigation 2: Implement Mitigation 1

The regional fee would be collected and remitted by the City of Tracy to a regional authority, and used to reduce the number of vehicle trips on Corral Hollow/Tesla Road, and Patterson Pass Road.

The proposed ESP would generate traffic that contributes to significant impacts on Tesla Road and Patterson Pass Road. Future development projects have a responsibility to contribute a fair share toward mitigation through regional transportation impact fees. Fee application decisions shall reflect the most cost-effective ways to address conditions on the interregional system as they affect Tesla and Patterson Pass Roads. However, the implementation of the mitigation measure would not completely reduce significant impacts to less than significant levels. Therefore, impacts to Tesla and Patterson Pass Roads are identified as significant and unavoidable.

Impact 3: *Development in the ESP area would generate unacceptable levels of service on local intersections throughout the City of Tracy. This is a significant Existing Plus Project impact.*

The proposed Project would increase traffic citywide and result in unacceptable level of service at five intersections. Implementation of improvements listed in Table 19 below would reduce Project impacts to less than significant levels.

TABLE 19 EXISTING PLUS PROJECT INTERSECTION IMPROVEMENTS			
Study Intersection	Existing Plus Project LOS	Improvement	Mitigated LOS
6. Lammers Rd. / Schulte Rd.	F	Signalize	B
7. Corral Hollow Rd. / Linne Rd.	D	Signalize	B
8. Corral Hollow Rd. / Valpico Rd.	F	<ul style="list-style-type: none"> Signalize Widen SB approach to provide 1 LT & 1 TR lane 	C
11. Corral Hollow Rd. / Grant Line Rd.	D	<ul style="list-style-type: none"> Add 2nd EB LT Lane Add 3rd EB Thru Lane Optimize signal 	C
21. Byron Road / Grant Line Road	F	Signalize	C
Notes: EB = Eastbound; SB = Southbound LT = Left-turn; TR = Through-Right			

Mitigation 3: Applicants of development projects within the ESP area shall be required to participate in a Finance and Implementation Plan (FIP) to fund their proportionate fair share of Citywide roadway improvements.

Impact 4: *Future development in the ESP area, along with other cumulative development in the City of Tracy and San Joaquin County would generate an unacceptable level of service on I-580. This is a significant cumulative impact.*

Implementation of the proposed Project would result in a net decrease in traffic demand through the I-580 corridor; however, operations would continue to be LOS F, which is unacceptable under the LOS standards set forth by the CMP. The degradation of these freeway segments under Cumulative conditions is an unavoidable cumulative impact.

Mitigation 4: Implement Mitigation 1

Transit Impacts

The proposed ESP would comply with the goals, objectives, and policies of the General Plan, including the specific intent of the General plan with respect to Urban Reserve 10. Goal CIR-4 of the General Plan provides for a balanced transportation system that encourages the use of public transit and high occupancy vehicles. Policy P4 under CIR-4 states that the City shall require large developments to provide for transit with adequate street widths and curb radii, bus turnouts, bus shelters, park-and-ride lots and multi-modal transit centers, if appropriate.

The proposed ESP has dedicated a 5-acre site along the existing ACE rail line for a multi-modal transit hub that would be located approximately halfway between Corral Hollow Road and Lammers Road. The transit center would include a train stop, bus transfer stop, and commuter parking spaces when/if the need arises for the transit center. Based on the goals, objectives and policies included in then General Plan and the provisions for a multi-modal transit hub within the proposed ESP, implementation of the proposed ESP would not result in a significant impact to transit.

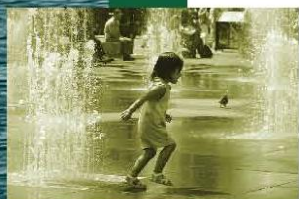
Bicycle and Pedestrian Impacts

The proposed ESP would comply with the goals, objectives, and policies of the General Plan, including the specific intent of the General plan with respect to Urban Reserve 10. Goal CIR-3 of the General Plan provides for safe and convenient bicycle and pedestrian travel as alternative modes of transportation in and around the city. This goal details several policy statements designed to enhance safe and convenient travel for bicyclists and pedestrians. For example, policies P4 and P5 under CIR-3 state that the City's bicycle and pedestrian system shall have a high level of connectivity, and that new development shall include pedestrian and bicycle facilities internal to the development and connect to city-wide facilities, such as parks, schools and recreational corridors. When developed, the ESP would include pedestrian and bicycle facilities internal to the specific plan area and that connect to the existing pedestrian system via street frontage improvements that include sidewalks and bicycle lanes.

Based on the goals, objectives and policies included in then General Plan and the intent of the proposed ESP, implementation of the proposed ESP would not result in a significant impact to bicycle and pedestrian modes.



F Water Supply Assessment



CITY OF TRACY

REVISED WATER SUPPLY ASSESSMENT FOR THE ELLIS SPECIFIC PLAN FINAL REPORT

Prepared for

City of Tracy

July 2012

WEST YOST

ASSOCIATES
Consulting Engineers

404-02-11-93

WEST YOST ASSOCIATES
consulting engineers



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- Agreement for Assignment of Central Valley Project (CVP) Water Supplies Between City of Tracy and West Side Irrigation District (WSID)
- Agreement Between City of Tracy and Plain View Water District (PVWD) for Central Valley Project (CVP) Supplies for Patterson Pass Business Park
- Agreement Between City of Tracy and South San Joaquin Irrigation District (SSJID) for Water Supply
- Pilot Agreement Between City of Tracy and Semitropic Water Storage District
- Permanent Agreement Between City of Tracy and Semitropic Water Storage District
- Agreement Between City of Tracy and Semitropic Water Storage District and Its Improvement Districts for Participation in the Stored Water Recovery Unit of the Semitropic Water Banking and Exchange Program

Appendix B: City of Tracy Adopted Budget Fiscal Year 2011-12

Appendix C: Groundwater Documentation

- DWR Bulletin 118 Description of San Joaquin Valley Groundwater Basin-Tracy Subbasin
- City of Tracy Groundwater Management Policy Mitigated Negative Declaration (including 2001 Estimated Groundwater Yield Study)
- Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area
- Excerpts of Summary of Groundwater Conditions Report (November 2007 through November 2008)
- Excerpts of Tracy Regional Groundwater Management Plan

Appendix D: City of Tracy Recycled Water Ordinance

- City of Tracy Municipal Code Chapter 11.30—Recycled and Non-Potable Water

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EXECUTIVE SUMMARY

The Ellis Specific Plan (Proposed Project) is located in the City of Tracy's (City) General Plan Sphere of Influence (SOI), and consists of approximately 321 acres in the southwestern portion of the City's SOI, just outside the City's existing City limits (see Figure 1). The Proposed Project meets the definition of a "Project" per California Water Code sections 10910 through 10915, as established by SB 610 in 2001, thus requiring the preparation of a Water Supply Assessment (WSA).

A WSA was prepared for the Surland Development Agreement and Ellis Specific Plan in March 2008 (Original Ellis WSA)¹, and was approved by the Tracy City Council on April 1, 2008. However, as described in Section 1.2 of this Revised Ellis WSA, the Original Ellis WSA and other Original Ellis Entitlements² were ordered to be set aside in an October 31, 2011 Statement of Decision and Judgment in response to a mandamus action filed in the Superior Court, *Tracy Regional Alliance for a Quality Community v. City of Tracy, et al.*, San Joaquin County Superior Court Case No. 39-2009-00201854-CU-WM-STK. The October 2011 judgment is now under appeal. This Revised Ellis WSA has been prepared to clarify issues identified for the Original Ellis WSA in the Statement of Decision and Judgment, and to satisfy state law requirements for purposes of the City of Tracy when deciding to reapprove the land use entitlements for the Proposed Project.

The Proposed Project is generally bounded by agricultural land on the north, the Union Pacific Railroad on the south, the Delta Mendota Canal to the southwest, Corral Hollow Road on the east, and Lammers Road on the west. Development of the Proposed Project will occur over the next 10 to 25 years, depending on market conditions. The Proposed Project includes a mix of residential, commercial, office/professional, institutional, and recreational uses covering approximately 321 acres. The Proposed Project includes a maximum of 2,250 residential units (Low, Medium and High Density Residential), 180,000 square feet of commercial space (including Village Center, General Commercial and Limited Use), a 12-acre middle school, and approximately 21 acres of neighborhood parks (see Figure 2). The Proposed Project area also includes a proposed 16-acre Swim Center (however, there is the possibility that the Swim Center may be relocated to another location).

For purposes of this WSA, the potable water demand for the Proposed Project at buildout (including the proposed Swim Center) has been conservatively estimated to be 1,076 af/yr (as included in the City's 2010 Urban Water Management Plan (UWMP)) and the recycled water demand has been estimated to be 116 af/yr (as calculated in this WSA based on the Proposed Project's current anticipated use of recycled water) (see Section 2.3).

¹ *Water Supply Assessment for the Surland Development Agreement and Ellis Specific Plan*, prepared by West Yost Associates, March 2008.

² Includes applications for the Ellis Specific Plan, Ellis Development Agreement, General Plan Amendment and an Annexation and Pre-Zoning of the Ellis property into the City of Tracy.



The water demands for the Proposed Project will be served using the City's existing and future portfolio of water supplies. Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the delivery of treated potable and recycled water supplies to the Proposed Project area.

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this Water Supply Assessment, this Revised Ellis WSA demonstrates that the City's existing and additional planned future water supplies are sufficient to meet the City's existing and projected future water demands, including those future water demands associated with the Proposed Project, to the year 2035 under all hydrologic conditions (including Normal Years, Single Dry Years, and Multiple Dry Years).



1.0 INTRODUCTION

1.1 Legal Requirement for a Water Supply Assessment

California Senate Bill 610 (SB 610) was approved by Governor Davis on October 9, 2001 and made effective on January 1, 2002. SB 610 amended California state law to improve the link between information on water supply availability and certain land use decisions made by cities and counties. Specifically, certain sections of the California Water Code were amended to require coordination between land use lead agencies and public water purveyors. The purpose of this coordination is to ensure that prudent water supply planning has been conducted, and that planned water supplies are adequate to meet existing demands, anticipated demands from approved projects and tentative maps, and the demands of proposed projects.

The amended Water Code sections 10910 through 10915 (inclusive) require land use lead agencies to: (1) identify any public water purveyor that may supply water for a proposed development project; and (2) request from the identified purveyor a Water Supply Assessment (WSA). The purpose of a WSA is to demonstrate the sufficiency of the purveyor's water supplies to satisfy the water demands of the proposed project, while still meeting the water purveyor's existing and planned future uses. Water Code sections 10910 through 10915 delineate the specific information that must be included in a WSA.

The purpose of this WSA is to perform the evaluation required by Water Code sections 10910 through 10915 in connection with the City of Tracy's (City) Ellis Specific Plan (Proposed Project). It is not to reserve water, or to function as a "will serve" letter or any other form of commitment to supply water (see Water Code section 10914). The provision of water service will continue to be undertaken in a manner consistent with applicable City policies and procedures, consistent with existing law.

1.2 Background

In June 2004, the Surland Companies (Project Applicant) filed land use applications to entitle the Ellis Project. Those applications included applications for the Ellis Specific Plan, Ellis Development Agreement, General Plan Amendment and an Annexation and Pre-Zoning of the Ellis property into the City of Tracy (Original Ellis Entitlements). The City of Tracy processed the applications and commissioned the preparation of the City of Tracy/Surland Development Agreement and Ellis Specific Plan Environmental Impact Report (Original Ellis EIR). As a part of the processing of the applications and the preparation of the Original Ellis EIR, the City commissioned the preparation of a Water Supply Assessment for the Surland Development Agreement and Ellis Specific Plan (Original Ellis WSA)³. The Original Ellis WSA was approved by the Tracy City Council on April 1, 2008. On December 16, 2008, the City certified the Original Ellis EIR and approved the land use applications for the Original Project, approving the Ellis Development Agreement (Original Ellis DA) and the Ellis Specific Plan (Original Ellis Specific Plan).

³ *Water Supply Assessment for the Surland Development Agreement and Ellis Specific Plan*, prepared by West Yost Associates, March 2008.



Following the approval of the Original Ellis Entitlements, the Tracy Alliance for a Quality Community (TRAQC) challenged the sufficiency of the Original Ellis EIR and the Original Ellis DA in a mandamus action filed in the Superior Court, *Tracy Regional Alliance for a Quality Community v. City of Tracy, et al.*, San Joaquin County Superior Court Case No. 39-2009-00201854-CU-WM-STK.

On October 31, 2011, the trial court issued its Statement of Decision and Judgment, resulting in the certification of the Original EIR and the Original DA ordered to be set aside for legal infirmities. Because the City did not certify an adequate EIR, the Original Ellis Entitlements were, also, set aside. However, with the exception of the Original DA, the trial judge did not identify specific legal infirmities in any of the other Original Ellis Entitlements.

The Project Applicant subsequently appealed the judgment of the Superior Court to the District Court of Appeal. The result of the appeal is that the judgment of the Superior Court, overturning the Original Ellis EIR and the Original Ellis Entitlements is stayed, pending the outcome of the appeal. It is anticipated that the appeal process will take two years or more. The trial judge's Statement of Decision and Judgment outlined specific areas of the Original Ellis EIR found to be legally deficient. Generally speaking, the court found that the Original Ellis WSA was deficient in two respects. First, the court found that the finding that water supplies were sufficient was not supported by substantial evidence. The basis for the finding is that there would be a water shortage in an extreme drought year and the City did not provide substantial evidence to explain how conservation measures could eliminate the water supply shortfall. Second, the court found that the record was not clear as to whether the Original Ellis WSA omitted consideration of a project in the downtown area consisting of 206 dwelling units.

In December 2011, the Project Applicant filed applications with the City for a modification and amendment to the Original Ellis DA (Modified and Amended Ellis DA); modification and amendment to the Original Ellis Specific Plan (Modified Ellis Specific Plan); and Petition for Annexation and Pre-Zoning and General Plan Amendment. A revised Ellis EIR (Revised Ellis EIR) is being prepared in response to the trial judge's Statement of Decision and Judgment, addressing and remedying those things that the trial judge found objectionable. In addition, the Original Ellis DA and the Original Ellis Entitlements will be modified and amended to address and remedy the defects determined by the Superior Court.

This revised WSA for the Ellis Specific Plan (Revised Ellis WSA) has been prepared to provide clarification for issues identified by the trial judge in the Statement of Decision and Judgment regarding the Original Ellis WSA and to satisfy state law requirements for purposes of the City of Tracy when deciding to reapprove the land use entitlements. The issue regarding the water shortage in an extreme drought year is clarified in Section 6.6 Dry Year Water Supply Availability and Reliability, and the issue regarding the consideration of a downtown project and its associated dwelling units is clarified in Section 5.2 Future Water Demand.



1.3 Water Supply Assessment Preparation, Format and Organization

This Revised Ellis WSA has been prepared by West Yost Associates (West Yost), as requested by the City, the identified water purveyor for the Proposed Project.

The format of this Revised Ellis WSA is intended to follow Water Code sections 10910 through 10915 to clearly delineate compliance with the specific requirements for a WSA. The Revised Ellis WSA includes the following sections:

- Section 1: Introduction
- Section 2: Description of Proposed Project
- Section 3: Required Determinations
- Section 4: City of Tracy Water Service Area
- Section 5: City of Tracy Water Demands
- Section 6: City of Tracy Water Supplies
- Section 7: Determination of Water Supply Sufficiency
- Section 8: Water Supply Assessment Approval Process
- Section 9: References

Relevant citations of Water Code sections 10910 through 10915 are included throughout this Revised Ellis WSA in *italics* to demonstrate compliance with the specific requirements of SB 610.

1.4 Acronyms and Abbreviations Used in this Water Supply Assessment

The following acronyms and abbreviations have been used throughout this Revised Ellis WSA.

Af	acre-feet
af/ac/yr	acre-feet per acre per year
af/yr	acre-feet per year
ASR	Aquifer Storage and Recovery
BBID	Byron Bethany Irrigation District
BCID	Banta Carbona Irrigation District
BiOps	Biological Opinions
Bookman	Bookman-Edmonston (a.k.a. GEI Consultants and Navigant)
Bgs	below ground surface
BMO	Basin Management Objectives
CEQA	California Environmental Quality Act
City	City of Tracy
CVP	Central Valley Project
DMC	Delta-Mendota Canal
DPH	California Department of Public Health

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DWR	California Department of Water Resources
EIR	Environmental Impact Report
ET _o	Evapotranspiration
FONSI	Finding of No Significant Impact
GMO	Growth Management Ordinance
GMP	Groundwater Management Plan
Gpm	gallons per minute
JJWTP	John Jones Water Treatment Plant
K/J/C	Kennedy/Jenks/Chilton
LAFCo	Local Area Formation Commission
M&I	Municipal and industrial
Mgd	million gallons per day
mg/L	milligrams per liter
Msl	mean sea level
NEPA	National Environmental Policy Act
Proposed Project	City of Tracy Ellis Specific Plan
PVWD	Plain View Water District
RGA	Residential Growth Allotment
RWQCB	Regional Water Quality Control Board
SB 610	California State Senate Bill 610 of 2001
SCWSP	South County Water Supply Project
Semitropic	Semitropic Water Storage District Groundwater Storage Bank
Sf	square feet
SOI	Sphere of Influence
SSJID	South San Joaquin Irrigation District
TBD	To be determined
TDS	Total Dissolved Solids
TRAQC	Tracy Alliance for a Quality Community
USBR	United States Bureau of Reclamation
UWMP	Urban Water Management Plan
WSA	Water Supply Assessment
WSID	West Side Irrigation District
West Yost	West Yost Associates
WWTP	Wastewater Treatment Plant



2.0 DESCRIPTION OF PROPOSED PROJECT

2.1 Proposed Project Location

The Proposed Project is located in the City of Tracy's (City) General Plan Sphere of Influence (SOI), and consists of approximately 321 acres in the southwestern portion of the City's SOI, just outside the City's existing City limits. The Proposed Project is generally bounded by agricultural land on the north, the Union Pacific Railroad on the south, the Delta Mendota Canal to the southwest, Corral Hollow Road on the east, and Lammers Road on the west. The Proposed Project is located within the Byron Bethany Irrigation District (BBID) service area, previously served by the Plain View Water District (PVWD).

Figure 1 illustrates the location of the Proposed Project in relation to the current City Limits and the City's General Plan SOI.

2.2 Proposed Land Uses and Acreages

The Proposed Project includes a mix of residential, commercial, office/professional, institutional, and recreational uses covering approximately 321 acres. The Proposed Project includes a maximum of 2,250 residential units (Low Density, Medium Density and High Density), 180,000 square feet of commercial space (including Village Center, General Commercial and Limited Use), a 12-acre middle school, and approximately 21 acres of neighborhood parks (see Figure 2). The Proposed Project area also includes a proposed 16-acre Swim Center (however, there is the possibility that the Swim Center may be relocated to another location).

Proposed land uses for the Proposed Project based on the Ellis Specific Plan are summarized in Table 1.

Table 1. Proposed Land Uses for the Ellis Specific Plan	
Proposed Land Use and Developed Square Footage^(a)	Ellis Specific Plan Gross Acres^(a)
Residential Mixed Low Density (505 single-family dwelling units)	120
Residential Mixed Medium Density (1,705 single-family dwelling units)	111
Residential Mixed High Density (40 dwelling units)	5
Village Center (60,000 sf)	5.7
Commercial (General) (40,000 sf)	4.4
Limited Use (80,000 sf)	26
Middle School	12
Neighborhood Parks	21
Swim Center	16
Total Gross Area	321
^(a) Based on Ellis Specific Plan land use data provided by Surland Companies on April 2, 2012.	



Development of the Proposed Project is anticipated to occur over the next 10 to 25 years, depending on market conditions, and will likely occur in several development phases. Phase 1 of the Proposed Project is anticipated to be developed starting in 2014.

It should be noted that this Revised Ellis WSA evaluates the availability and reliability of the City's water supplies to serve buildout of the Proposed Project; no evaluation of individual development phases is provided.

2.3 Projected Water Demand

2.3.1 Water Use Factors and Assumptions

The City adopted unit water use factors for use in projecting potable and recycled water demand based on the proposed future land uses within the City's General Plan SOI⁴. Water use factors for various land uses were established based on historical metered water use data for various land use types, taking into consideration reduced water use as a result of new building codes, improved water use efficiency and water conservation measures.

Table 2 summarizes the City's adopted unit water use factors for the land use designations applicable to the Proposed Project.

Table 2. City of Tracy Adopted Water Use Factors^(a)	
Proposed Land Use	Water Use Factor (units as shown)
Low Density Residential	429 gpd/du ^(b)
Medium Density Residential	310 gpd/du ^(c)
High Density Residential	220 gpd/du ^(c)
Village Center (Commercial)	2.0 af/ac/yr ^(d)
General Commercial	2.0 af/ac/yr ^(d)
Limited Use (Commercial)	2.0 af/ac/yr ^(d)
Middle School (Institutional/Public Facilities)	1.5 af/ac/yr ^(d)
Neighborhood Parks (Landscape Irrigation)	4.0 af/ac/yr ^(d)
Swim Center	See Section 2.3.2 Water Demand Calculations
^(a) As established in the Citywide Water System Master Plan, prepared by West Yost Associates, Draft Report dated March 2012, and included in the City's 2010 UWMP. ^(b) Low Density Residential potable water use factor assumes potable water use for landscape irrigation uses. ^(c) Medium and High Density Residential potable water use factors developed as part of the Citywide Water System Master Plan assume that recycled water would be used for landscape irrigation uses. Since recycled water is not assumed to be used for the Ellis Specific Plan for the Medium Density Residential, additional potable water demand has been added to the Medium Density Residential potable water demand estimate to account for irrigation demands using potable water (see Table 3a). ^(d) Water use factors expressed in af/ac/yr are based on gross acres (see Table 3a).	

⁴ As established in the *City of Tracy Citywide Water System Master Plan*, prepared by West Yost Associates, Draft Report dated March 2012, and included in the City's 2010 UWMP.



The unit water use factors listed in Table 2 were applied to the number of dwelling units and gross acres for the respective land uses for the Proposed Project to estimate the total potable water demand.

2.3.2 Water Demand Calculations

The total projected water demand for the Proposed Project at buildout (including the Swim Center) is presented in Table 3a. As shown, the projected potable water demand for the Proposed Project (including the Swim Center) is estimated to be 1,021 acre-feet per year (af/yr) and the projected recycled water demand for the Proposed Project is estimated to be 116 af/yr.

Projected water demands for the Swim Center are documented in a December 2010 Technical Memorandum prepared by West Yost Associates (included in Appendix E) and are shown in Table 3b and are based on the following assumptions.

- Demands for the Swim Center building facilities were provided by Dahlin Group and Glumac Engineers (e-mail November 5, 2010). Fixture counts used to determine the demands are based on the Building Code for the estimated number of occupants. The estimated number of occupants used for determining ultimate demand is 2,400 people. The maximum and peak hour demands will occur during the summer and the facility is assumed to be 90 percent closed in the winter. The estimated water demands provided include the peak demand for the building facilities.
- The annual demands for the Swim Center landscaped areas were provided by RJM Design Group (e-mail October 18, 2010). The landscape demands were provided for the annual average of the base bid and ultimate buildout. The maximum day demands were calculated by assuming the annual demand would occur during a six-month irrigation season (April through September) with a six-hour window for irrigation each day. The resulting demand is assumed to be the typical landscape demand during the summer. The peak hour demand was provided by RJM Design Group.

The water demands included in this Revised Ellis WSA (potable water demand of 1,076 af/yr and recycled water demand of 116 af/yr) are different than those included in the Original Ellis WSA (potable water demand of 1,250 af/yr). The difference in demands is due to changed land use assumptions for the Proposed Project, changed unit water use factors as adopted for the City's Citywide Water System Master Plan, and changed assumptions regarding the use of recycled water within the Proposed Project.

It should also be noted that although water demands for the Proposed Project will develop incrementally over time as various phases of the Proposed Project are developed, this Revised Ellis WSA only provides analysis of the total estimated demands for the Proposed Project at buildout. No evaluation of water supplies for individual development phases is provided in this Revised Ellis WSA.

Table 3a. Ellis Specific Plan Water Demand Estimate										
Land Use Designation	Area, gross acres (see Note 1)	Potable Water Acres	Recycled Water Acres	Dwelling Units (dus) (see Note 1)	Square Feet (sf) (see Note 1)	Unit Potable Water Use Factors (see Note 2)		Unit Recycled Water Use Factors (see Note 2)	Annual Potable Water Use, af/yr	Annual Recycled Water Use, af/yr
						gpd/du	af/ac/yr			
Residential Mixed Low	120	120.0	0.0	505		429			243	--
Irrigation Demand for Residential Mixed Low (see Note 3)						included in gpd/du potable water use factor			--	--
Residential Mixed Medium	111	94.4	0.0	1,705		310			592	--
Irrigation Demand for Residential Mixed Medium (see Note 4)			0.0			NOT included in gpd/du potable water use factor	4.00		67	--
Residential Mixed High	5	4.3		40		220			10	--
Irrigation Demand for Residential Mixed High (see Note 5)						NOT included in gpd/du potable water use factor		4.00	--	3
Village Center (see Note 6)	5.7	4.8	0.9		60,000		2.00	4.00	10	3
Commercial (General) (see Note 6)	4.4	3.7	0.7		40,000		2.00	4.00	7	3
Limited Use (Commercial/Storage) (see Note 6)	26	22.1	3.9		80,000		2.00	4.00	44	16
Middle School (see Note 7)	12	10.2	1.8				1.50	4.00	15	7
Neighborhood Parks (see Note 8)	21	0.0	21.0					4.00	--	84
Swim Center (see Note 9)	16	16.0	0.0						33	--
Totals	321	293	28	2,250	180,000				1,021	116
Total Water Demand for the Ellis Specific Plan (see Note 10)										1,021
Total Water Demand for Ellis Specific Plan included in City of Tracy 2010 UWMP										1,076
Notes: 1. Acres, dwelling units and square footages as provided by Surland on April 2, 2012. 2. Unit Water Use Factors based on Citywide Water System Master Plan, Draft Report dated March 2012 3. Unit potable water use factors for Residential Mixed Low Density Residential dwelling units include outdoor potable water uses. 4. Unit potable water use factors for Residential Mixed Medium Density dwelling units do not include outdoor water uses. For the Ellis Specific Plan, the Residential Mixed Medium Density Residential assumes that 15% of the gross acres will be landscaped and irrigated with potable water. 5. Assumes that 15% of Residential Mixed High Density gross acres are landscaped and irrigated with recycled water. 6. Assumes that 15% of Village Center, Commercial and Limited Use gross acres are landscaped and irrigated with recycled water. 7. Assumes that 15% of School gross acres are landscaped and irrigated with recycled water. 8. Assumes that 100% of Park gross acres are landscaped and irrigated with recycled water. 9. Water Demand for Tracy Aquatic Center based on data provided to West Yost Associates in 2010 from Aquatic Design Group, Inc., Dahlin Group, Glumac Engineers and RJM Design Group (documented in West Yost Associates' December 15, 2010 technical memorandum "City of Tracy Aquatic Center Facility Water Demand and Water System Infrastructure Analysis" (see Appendix E). See additional information on water demand estimate for Tracy Aquatic Center in Table 3b. 10. The water demand calculations shown for the Ellis Specific Plan are based on overall City-wide assumptions and the assumptions described herein. Actual water demands for the Ellis Specific Plan will be confirmed at the Tentative Map stage of the project.										

Table 3b. Tracy Swim Center Water Demand Estimate

Aquatic Center Feature	MG/yr
Base Bid Demands	
Pool/Attractions	
Lazy River	0.89
Activity Pool	0.61
Sprayground	0.07
Flow Rider	0.31
Subtotal for Pool/Attractions	1.88
Building Facilities	2.27
Landscape	1.76
Subtotal for Base Bid	5.91
Additional Options	
Pool/Attractions	
52 Meter Pool	1.06
Recreation Pool	0.30
Subtotal for Pool/Attractions	1.36
Building Facilities	2.33
Landscape	1.09
Subtotal for Additional Options	4.78
Overall Water Demand for Tracy Aquatic Center	10.69 MG/yr
	33 af/yr
<p>Notes regarding Tracy Swim Center water demand estimate:</p> <p>Demands for the building facilities were provided by Dahlin Group and Glumac Engineers (email November 5, 2010). Fixture counts used to determine the demands are based on the Building Code for the number of occupants. The estimated occupants used for determining ultimate demand are 2,400 people. The maximum and peak hour demands will occur during the summer and the facility is assumed to be 90 percent closed in the winter. The estimated water demands provided include the peak demand for the building facilities. It is assumed the maximum day and peak hour demands are the same in this analysis.</p> <p>The annual demands for the landscaped areas were provided by RJM Design Group (email October 18, 2010). The landscape demands were provided for the annual average of the base bid and ultimate buildout. The maximum day demands were calculated by assuming the annual demand would occur during a six-month irrigation season (April thru September) with a six-hour window for irrigation each day. The resulting demand is assumed to be the typical landscape demand during the summer. The peak hour demand was provided by RJM Design Group.</p> <p>See Appendix E for additional information.</p>	



2.3.3 Comparison with Water Demand Calculations in the Urban Water Management Plan

The potable water demand calculated for the Proposed Project shown in Table 3a (1,021 af/yr) is lower than the 1,076 af/yr demand included for the Proposed Project in the City's 2010 UWMP.

A recycled water demand for the Proposed Project was not included in the City's 2010 UWMP, as recycled water use within the Proposed Project area was not previously planned. However, recycled water facilities recommended in the Citywide Water System Master Plan have been sized to accommodate additional recycled water demands beyond those included in the City's 2010 UWMP and adequate recycled water supplies are anticipated to be available in the future to accommodate the recycled water demand associated with the Proposed Project (116 af/yr) (see Section 6.4.1).

For purposes of this Revised Ellis WSA, the potable water demand for the Proposed Project will conservatively be estimated to be 1,076 af/yr (as included in the City's 2010 UWMP) and the recycled water demand will be estimated to be 116 af/yr (as calculated in this WSA based on the Proposed Project's current anticipated use of recycled water). As noted in Table 3a, these water demand estimates are based on overall City-wide assumptions; actual water demands for the Proposed Project will be confirmed during the subdivision map process of the Proposed Project.

It is anticipated that water demands of the Proposed Project would be served from City's existing and future portfolio of water supplies as described in Section 6.0 City of Tracy Water Supplies. Proponents of the Proposed Project will provide their proportionate share of required funding to the City for the delivery of treated potable and recycled water supplies to the Proposed Project area.



3.0 REQUIRED DETERMINATIONS

3.1 Does SB 610 apply to the Proposed Project?

10910 (a) Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

10912 (a) "Project" means any of the following:

- (1) A proposed residential development of more than 500 dwelling units.*
- (2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.*
- (3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.*
- (4) A proposed hotel or motel, or both, having more than 500 rooms.*
- (5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.*
- (6) A mixed-use project that includes one or more of the projects specified in this subdivision.*
- (7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500-dwelling unit project.*

Based on the following facts, SB 610 does apply to the Proposed Project.

- The City of Tracy has determined that the Proposed Project is subject to the California Environmental Quality Act (CEQA) and that an Environmental Impact Report (EIR) is required.
- The Proposed Project, with 2,250 residential dwelling units and 180,000 sf of commercial development, meets the definition of a "Project" as specified in Water Code section 10912(a) paragraph (1) as defined for proposed residential developments.

Therefore, according to Water Code section 10910(a), a WSA is required for the Proposed Project.

A WSA was prepared for the Surland Development Agreement and Ellis Specific Plan in March 2008 (Original Ellis WSA)⁵, and was approved by the Tracy City Council on April 1, 2008. However, as described in Section 1.2, the Original Ellis WSA and other Original Ellis Entitlements⁶ were ordered to be set aside in an October 31, 2011 Statement of Decision and Judgment in response to a mandamus action filed in the Superior Court, *Tracy Regional Alliance for a Quality Community v. City of Tracy, et al.*, San Joaquin County Superior Court Case No.

⁵ *Water Supply Assessment for the Surland Development Agreement and Ellis Specific Plan*, prepared by West Yost Associates, March 2008.

⁶ Includes applications for the Ellis Specific Plan, Ellis Development Agreement, General Plan Amendment and an Annexation and Pre-Zoning of the Ellis property into the City of Tracy.



39-2009-00201854-CU-WM-STK. The October 2011 judgment is now under appeal. This Revised Ellis WSA has been prepared to address legal deficiencies identified for the Original Ellis WSA in the Statement of Decision and Judgment, and to satisfy state law requirements for purposes of the City of Tracy when deciding to reapprove the land use entitlements for the Proposed Project.

3.2 Who is the identified public water system?

10910(b) The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined by Section 10912, that may supply water for the project

10912 (c) "Public water system" means a system for the provision of piped water to the public for human consumption that has 3,000 or more service connections...

As shown on Figure 1, the Proposed Project is located within the City's General Plan SOI. The Proposed Project is located outside the current City limits; however, it is anticipated that the Proposed Project area will be annexed into the City prior to development.

The City's water system service area includes all areas within the City limits and the General Plan SOI area as they are annexed into the City. As of December 2010, the City had 23,449 water service connections. Therefore, the City is the identified public water system for the Proposed Project.

3.3 Does the City have an adopted Urban Water Management Plan (UWMP) and does the UWMP include the projected water demand for the Proposed Project?

10910(c)(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

The City's most recently adopted UWMP (the City's 2010 UWMP) was adopted by the City Council in May 2011⁷. The City's 2010 UWMP included existing and projected water demands for existing and projected future land uses to be developed within the City's General Plan SOI through buildout (estimated to occur in 2040). The water demand projections in the City's 2010 UWMP included existing City water demands (based on 2007 demands⁸), future water demands for developments with approved water supplies (e.g., those projects which have already been approved by the City but have not yet begun construction or have not yet built out), and future water demands for future service areas.

⁷ City of Tracy 2010 Urban Water Management Plan, prepared by Erler & Kalinowski, Inc., May 2011.

⁸ The 2007 water demands were used because they may be more representative of actual existing demands than the currently observed lower demands due to recent drought conditions and economic conditions.



Potable water demands for the Proposed Project (1,076 af/yr) were included in the City's 2010 UWMP future water demands for developments with approved water supplies⁹.

Recycled water demands for the Proposed Project (116 af/yr) were not included in the City's 2010 UWMP, as recycled water use within the Proposed Project area was not previously planned. However, recycled water facilities recommended in the Citywide Water System Master Plan have been sized to accommodate additional recycled water demands beyond those included in the City's 2010 UWMP and adequate recycled water supplies are anticipated to be available in the future to accommodate the recycled water demand associated with the Proposed Project.

⁹ Table 7, *City of Tracy 2010 Urban Water Management Plan*, prepared by Erler & Kalinowski, Inc., May 2011. The Project is included in the Developments with Approved Water Supplies.



4.0 CITY OF TRACY WATER SERVICE AREA

4.1 Water Service Area

The City is located in San Joaquin County, California, about 70 miles south of Sacramento and 60 miles east of San Francisco. The existing incorporated area of the City encompasses approximately 22 square miles. The SOI is the area outside of the City limits that the City expects to annex and urbanize in the future, and is the expected physical limit of the City based on the most current information. During the City's recent General Plan update process and in response to Local Agency Formation Commission (LAFCo) policies established in 2007, revisions to the City's SOI were made to more accurately reflect locations where the City may grow in the future and locations where no urban growth is expected. The recently adopted revised SOI encompasses an area of approximately 42 square miles and is 20 square miles larger than the current City limits.

The City's water service area is coterminous with the City limits. As future developments within the SOI, but outside the City Limits, are approved, they will be annexed into the City and served by the City water system. Figure 1 illustrates the current City limits and the SOI. The Proposed Project is located outside the City's existing City limits, but will be annexed into the City prior to development.

4.2 Population

The State of California Department of Finance population estimate for the City as of January 1, 2011 was 83,420 people. Population growth has been rapid in the City, with the City growing by 142 percent between 1988 and 2003, a compounded rate of approximately 6 percent per year. The City's population growth, at least in the near-term, is not anticipated to be as rapid as it has been historically. The City adopted a residential Growth Management Ordinance (GMO) in 1987, which was amended in 2000 by Measure A. The objective of the GMO and Measure A was to achieve a steady and orderly growth rate that allows for the adequate provision of services and community facilities, and includes a balance of housing opportunities. Under the GMO, builders must obtain a Residential Growth Allotment (RGA) in order to secure a residential building permit. The GMO Guidelines were adopted by resolution of the City Council.

The City's projected population increase for 2010 through 2025 is based on the City's General Plan, and for 2025 through 2035 is based on assumed buildout of the City's SOI by 2040 (as assumed in the Citywide Water System Master Plan and the City's 2010 UWMP). However, due to the on-going economic conditions in the State and in the Tracy area, it is currently unclear if actual development will occur within this assumed time frame and if populations will increase as assumed. It is more likely that development within the General Plan SOI will occur over a longer period of time with buildout occurring sometime after the year 2040.

Table 4 shows the City's projected population in five-year increments to the year 2035.



Table 4. Historical and Projected Population

Historical Population	1990	32,827
	1995	44,923
	2000	56,447
	2005	78,546
	2010	82,484
Projected Population	2015	89,503
	2020	99,440
	2025	109,377
	2030	117,744
	2035	126,110

Source: City of Tracy 2010 UWMP, Table 2 Historical and Projected Service Area Population, May 2011; includes 377 residents served by the City in the Larch Clover County Services District.

4.3 Climate

Spring, summer, and fall are generally hot in the City, with temperatures often climbing to over 100 degrees Fahrenheit on summer days. The City's winters are usually mild, although the dense "Tule fog" can last for weeks. Mean winter temperatures range from 40 to 50 degrees Fahrenheit, with an average of 16 days per year having frost. Most precipitation occurs during the winter. The average annual precipitation from the years 1949 to 2010 is recorded by the Western Regional Climate Center as 9.85 inches. Table 5 summarizes the City's average temperature and rainfall data.

Table 5. Historical Climate Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total
Average E_t , inches ^(a)	0.95	1.75	3.48	5.37	6.88	7.79	8.29	7.24	5.33	3.63	1.76	1.01	53.48
Average Max Temperature, °F ^(b)	54.1	61.0	66.8	73.1	80.8	88.1	93.7	92.2	87.9	78.5	64.9	54.7	74.7
Average Min Temperature, °F ^(b)	36.7	40.0	42.6	45.4	50.4	55.2	57.2	55.7	53.9	48.7	42.1	36.6	47.0
Average Rainfall, inches ^(b)	1.90	1.72	1.36	0.82	0.45	0.09	0.03	0.09	0.22	0.52	1.10	1.55	9.85

^(a) Source: CIMIS Website: www.cimis.water.ca.gov, Station 167 Tracy, Monthly Average Evapotranspiration (E_t) Report, downloaded December 2011.

^(b) Source: Western Regional Climate Center website: www.wrcc.dri.edu, Tracy Carbona Weather Station (No. 048999), Period of Record 10/1/49 to 12/31/10.



5.0 CITY OF TRACY WATER DEMANDS

10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

As described previously, the water demands for the Proposed Project are included in the City's 2010 UWMP. Therefore, the descriptions provided below for the City's water demands have been taken, for the most part, from the City's 2010 UWMP, which was adopted by City Council in May 2011. Supplemental information from other available reports has been included to provide the most recent data available and to meet the specific requirements of SB 610.

5.1 Historical and Existing Water Demand

The City's water demand has increased by over 100 percent in the last twenty years. In 1986, the City's water demand was 8,104 af/yr and, in 2011, the City's water demand was 16,868 af/yr. Figure 3 shows the City's historical annual water demand (based on water production) from 1986 through 2011. Table 6 shows the City's water demand (based on water production) for 2006 through 2011.

Table 6. Historical Potable Water Demand, af/yr ^(a)						
	2006	2007	2008	2009	2010	2011
Total UWMP Water Demand	18,000	19,176	17,118	16,693	16,603	16,868
^(a) Table 6 Current and Historical Potable Water Demand by Water Demand Sector, City of Tracy 2010 Urban Water Management Plan, May 2011. 2011 data from City water production data.						

As shown in Table 6 and Figure 3, the City's 2009 to 2011 potable water demands (based on water production) were about 2,300 to 2,500 af/yr lower than 2007 demands. This reduction in potable water demand is partially due to additional water conservation measures which were implemented during the recent drought and relatively wet conditions in 2010 and 2011. The reduction in 2010 and 2011 demands may also be due to a large number of unoccupied homes and closed businesses due to recent poor economic conditions.

5.2 Future Water Demand

The City's future water demand is anticipated to continue to increase as approved projects build out and new developments are approved and constructed within the City's water service area. However, as discussed above, the rate of growth within the City service area has slowed as a result of the Growth Management Ordinance and the current economic downturn. Hence, water demands are not anticipated to increase as rapidly as they have in past years.

The projected future water demand was determined based on potable water use factors for various land uses based on historical metered water use data for various land use types, taking into consideration reduced water use as a result of new building codes, improved water use efficiency and water conservation measures. Table 7 shows the projected potable and recycled water demand through 2035 as presented in the City's 2010 UWMP.



Table 7. Projected Future Water Demand, af/yr

	2015	2020	2025	2030	2035
Total Potable Water Demand ^(a)	23,000	25,000	28,300	31,000	33,600
Total Recycled Water Demand ^(b,c)	1,200	2,410	3,620	4,830	6,040

^(a) Table 8 Projected Potable Water Demand by Water Demand Sector, City of Tracy 2010 Urban Water Management Plan, May 2011. Includes potable water demands for the Proposed Project.

^(b) Table 17 Projected Timing of Recycled Water Demand, City of Tracy 2010 Urban Water Management Plan, May 2011.

^(c) As discussed in Section 2.3.3, a recycled water demand for the Proposed Project was not included in City's 2010 UWMP, as recycled water use within the Proposed Project area was not previously planned. However, recycled water facilities recommended in the Citywide Water System Master Plan have been sized to accommodate additional recycled water demands beyond those included in the City's 2010 UWMP and adequate recycled water supplies are anticipated to be available in the future to accommodate the recycled water demand associated with the Proposed Project (116 af/yr).

Figure 4 illustrates the City's projected water demand through 2035 as presented in the City's 2010 UWMP. As noted previously, buildout of the City's General Plan SOI has been assumed to occur in the year 2040. However, due to the on-going poor economic conditions in the State and in the Tracy area, it is currently unclear if actual development will occur within this assumed time frame and if populations will also increase as assumed. It is likely that development within the General Plan SOI will occur over a longer period of time with buildout occurring sometime after the year 2040.

Table 8 summarizes the City's projected future water demand based on existing users, on-going development projects with approved water supply and future service areas¹⁰. The Proposed Project is considered to be one of the City's development projects with approved water supply. As shown in Table 8, based on existing users and the development projects with approved water supply (including the Proposed Project), the projected potable water demand is 23,326 af/yr. This projected potable water demand increases to 36,304 af/yr at buildout with the inclusion of potable water demands for future service areas (assumed to occur in about 2040).

Figure 5 shows the City's projected future potable water demand by development stage based on the currently available water demand estimates.

¹⁰ The Statement of Decision dated October 31, 2011 regarding the petition against the Original Ellis Development Agreement and Original Ellis WSA, indicated that "not all projects were included in the [Original Ellis] WSA" and specifically referred to 206 Residential Growth Allotments (RGAs) that were projected for the downtown and not included in the Original Ellis WSA. It should be noted that the Original Ellis WSA preceded the development of the Downtown Specific Plan, and the adoption of the Downtown Specific Plan WSA in April 2009. Therefore, the RGAs associated with the Downtown Specific Plan were not included in the Original Ellis WSA. However, the water demand associated with the Downtown Specific Plan (185 af/yr) is included in the City's 2010 UWMP (adopted by the Tracy City Council in May 2011) as one of the Development Projects with Approved Water Supply (see Table 8), and is therefore included in this Revised Ellis WSA.



Table 8. Projected Future Potable Water Demand by Development Stage

	Existing Water Demand, af/yr	Future Water Demand, af/yr ^(a)	Total Future Water Demand, af/yr ^(b)
Existing Users ^(c)	17,820 ^(c)		19,176 ^(d)
Ellis Specific Plan		1,076 ^(e)	1,163 ^(e)
Other Development Projects with Approved Water Supply ^(e)		2,763	2,987
<i>Residential Areas Specific Plan</i>		45	
<i>Industrial Areas Specific Plan</i>		574	
<i>I-205 Corridor Specific Plan</i>		271	
<i>Plan "C"</i>		74	
<i>Northeast Industrial</i>		702	
<i>South MacArthur</i>		59	
<i>Downtown Specific Plan</i>		185	
<i>Infill</i>		806	
<i>Gateway Phase 1</i>		-- ^(g)	
<i>Holly Sugar Sports Park</i>		47	
Subtotal (Existing + Proposed Project + Other Development Projects with Approved Water Supply)	17,820	3,839	23,326
Future Service Areas ^(f)		12,004	12,978
<i>Westside Residential (URs 5, 7, 8, 9)</i>		1,169	
<i>UR 1</i>		1,237	
<i>South Linne (UR 11)</i>		153	
<i>Tracy Hills</i>		2,985	
<i>Gateway PUD (excluding Phase 1)</i>		-- ^(g)	
<i>Cordes Ranch (UR 6)</i>		2,233	
<i>Bright (UR 4)</i>		411	
<i>Catellus (UR 3)</i>		839	
<i>Filios (UR 2)</i>		70	
<i>I-205 Expansion</i>		292	
<i>Westside Industrial</i>		618	
<i>Eastside Industrial</i>		469	
<i>Larch Clover County Services District</i>		847	
<i>Chrisman Road</i>		150	
<i>Rocha</i>		248	
<i>Berg/Byron</i>		164	
<i>Kagehiro</i>		120	
Total Potable Water Demand at Buildout (Existing Users + Development Projects with Approved Water Supply + Other Future Service Area)	17,820	15,844	36,304
^(a) Future water demand, not including unaccounted for water. ^(b) Represents total projected water demands at buildout, including 7.5 percent unaccounted for water (based on the City's historical unaccounted for water). ^(c) Based on actual water sales data for 2007 (not including unaccounted for water) (reference: City of Tracy Water Inventory Report, February 5, 2008). As noted above, 2007 water demands are used for the evaluation in this WSA, as 2007 water demands more closely represent normal year conditions. ^(d) Based on actual water production in 2007 (includes actual water sales and calculated unaccounted for water in 2007 of 7.1 percent). ^(e) See Development Projects with Approved Water Supply in Table 7 Projected Potable Water Demand Itemized by Future Development, City of Tracy 2010 UWMP, May 2011. Ellis Specific Plan included with a potable water demand of 1,076 af/yr (with 7.5 percent unaccounted for water equals 1,163 af/yr (1,076 af/yr divided by 92.5 percent)). ^(f) See Future Service (Planning) Areas in Table 7 Projected Potable Water Demand Itemized by Future Development Area, City of Tracy 2010 UWMP, May 2011. ^(g) Based on Gateway's participation in the Water Exchange Program.			



5.3 Dry Year Water Demand

The City currently has an extensive water conservation program in place, as described in Chapter 6 of the City's 2010 UWMP. The projected future water demand presented in Table 8 includes continued implementation of the City's existing water conservation program, and is based on future normal hydrologic years. In single dry or multiple dry years, the projected future water demand presented in Table 8 is also applicable (does not include any additional water conservation beyond that assumed in normal years). This is because, as water demands begin to increase in the spring due to the warmer weather conditions, due to the lack of rainfall during the previous winter/spring period, and the subsequent public notification of dry conditions, some conservation will occur, and summer water demands will likely decrease, essentially balancing out the demands within that year. Table 9 presents the projected future dry year potable water demand.

Table 9. Projected Future Dry Year Potable Water Demand, af/yr ^(a)						
Hydrologic Condition	Demand Reduction	2015	2020	2025	2030	2035
Normal Year	0%	23,000	25,000	28,300	31,000	33,600
Single Dry Year	0%	23,000	25,000	28,300	31,000	33,600
Multiple Dry Years ^(b)	0%	23,000	25,000	28,300	31,000	33,600
^(a) See Table 8 Projected Potable Water Demand by Water Demand Sector of the City's 2010 UWMP. Includes unaccounted for water of 7.5 percent based on the City's historical unaccounted for water. ^(b) Represents demands for each year of the 3-year multiple dry year period.						



6.0 CITY OF TRACY WATER SUPPLIES

10910(c)(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f) and (g).

10910(d)(1) The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts

10910(d)(2) An identification of existing water supply entitlements, water rights, or water service contracts held by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall be demonstrated by providing information related to all of the following:

- (A) Written contracts or other proof of entitlement to an identified water supply.*
- (B) Copies of a capital outlay program for financing the delivery of a water supply that has been adopted by the public water system.*
- (C) Federal, state, and local permits for construction of necessary infrastructure associated with delivering the water supply.*
- (D) Any necessary regulatory approvals that are required in order to be able to convey or deliver the water supply.*

10910(e) If no water has been received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts, the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), shall also include in its water supply assessment pursuant to subdivision (c), an identification of the other public water systems or water service contract-holders that receive a water supply or have existing water supply entitlements, water rights, or water service contracts, to the same source of water as the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has identified as a source of water supply within its water supply assessments..

The Proposed Project, if approved by the City, is capable of being served by the City from the City's existing and future portfolio of water supplies. The water supply for the Proposed Project will have the same water supply reliability and high water quality as the water supply available to all of the City's other existing and future water customers.

The water demands for the Proposed Project (together with existing water demands and planned future uses) are included in the City's 2010 UWMP. Therefore, the descriptions provided below for the City's water supplies have been taken, for the most part, from the City's 2010 UWMP, which was adopted in May 2011. Supplemental information from other available reports has also been included to provide the most recent data available and to meet the specific requirements of SB 610.

The City's existing water supplies and some of the additional planned future water supplies have undergone previous environmental review. These reviews are referenced in the following descriptions and are incorporated by reference as applicable.



6.1 Existing Potable Water Supplies

The City currently receives water supplies from three sources:

- Surface water from the Delta-Mendota Canal (Central Valley Project),
- Surface water from the Stanislaus River via the South County Water Supply Project (delivered by the South San Joaquin Irrigation District (SSJID)), and
- Groundwater pumped from nine groundwater wells located within the City.

Each of these existing supplies is described below and documentation regarding these supplies (e.g., contracts and agreements) is provided in Appendix A of this Revised Ellis WSA. Summary tables listing the City's existing and additional water supplies, and historical and anticipated future quantities are provided following the discussion of the City's additional water supplies. Figure 6 shows the City's historical use of these water supplies.

The City's Capital Improvement Plan (CIP) for the five-year period from Fiscal Year (FY) 2011/12 through FY 2015/16 for water system improvements to serve existing and future customers is provided in Appendix B.

6.1.1 Central Valley Project Water via the Delta-Mendota Canal

6.1.1.1 M&I-Reliability Supplies from the CVP

In 1974, the City entered into a 40-year contract with the USBR for an annual entitlement of 10,000 af/yr of surface water from the CVP via the Delta-Mendota Canal (DMC). The contract is due to expire in 2014. The City has agreed with the USBR to renew this contract prior to 2014. Contract negotiations are on-going and it is the intent to renew the contract prior to 2014. In the event the contract is not renewed prior to expiration, the City and the USBR will enter into an interim renewal contract to provide water service until the long-term renewal contract is executed. A copy of the City's contract with the USBR is included in Appendix A.

In the CVP system, in accordance with the USBR's Central Valley Project Municipal and Industrial (M&I) Draft Water Shortage Policy dated September 11, 2001, an M&I contractor is eligible for 75 percent M&I reliability applied to the contractor's historical use, with certain adjustments. This M&I reliability may be reduced when the allocation of Ag-reliability water is reduced below 25 percent of contract entitlement. Historical allocations for the M&I-reliability CVP water for the last several years are summarized below:

- 2005: 100 percent allocation
- 2006: 100 percent allocation
- 2007: 75 percent allocation
- 2008: 75 percent allocation
- 2009: 60 percent allocation



- 2010: 75 percent allocation
- 2011: 100 percent allocation
- 2012: 75 percent allocation (as of April 13, 2012)

The City's allocations of M&I-reliability water in the last five years have averaged 77 percent of the City's contractual entitlement¹¹.

Litigation has created uncertainty regarding the reliability of water deliveries through the Bay-Delta. Most of this litigation addresses compliance with the federal and State endangered species acts (see NRDC v. Kempthorne, and Watershed Enforcers v. DWR). In August 2007, the federal court in the Kempthorne case ordered that, as an interim remedy, Delta pumping be curtailed from late December through June to protect the Delta smelt (this became known as the Wanger Decision). In December 2008, a Biological Opinion (BiOp) regarding the Delta smelt was issued by the U.S. Fish and Wildlife Service which applied Delta pumping restrictions that are similar to the August 2007 interim court remedy, and a revised BiOp related to three salmon species was issued in June 2009 which included additional pumping restrictions. After the BiOps were released, numerous parties filed suit. The court overturned the BiOps and remanded the BiOps to the fishery agencies. The final impacts of the BiOps on future SWP and CVP deliveries remain uncertain.

6.1.1.2 Ag-Reliability Supplies from the CVP

In 2004, the USBR approved the assignment of 5,000 af/yr of Ag-reliability CVP contract entitlement to the City from the Banta Carbona Irrigation District (BCID). Also in 2004, the USBR approved the assignment of another 2,500 af/yr of Ag-reliability CVP contract entitlement water to the City from the WSID, with the option to purchase an additional 2,500 af/yr of CVP contract entitlement from the WSID (see discussion under Section 6.2.1.1 Additional CVP Supplies from WSID). For both of these assignments, Negative Declarations were prepared pursuant to the provisions of the California Environmental Quality Act (CEQA) (BCID Assignment: SCH No. 2002072106; WSID Assignment: SCH No. 2002072107) and for each a Finding of No Significant Impact (FONSI) was issued.

Deliveries of Ag-reliability water can vary significantly, and during severe water shortages supply may be reduced as much as 100 percent. Allocations for the Ag-reliability CVP water for the last several years are summarized below:

- 2005: 85 percent allocation
- 2006: 100 percent allocation
- 2007: 50 percent allocation
- 2008: 40 percent allocation
- 2009: 10 percent allocation

¹¹ Based on USBR CVP South of Delta M&I allocations from 2008 to 2012.



- 2010: 45 percent allocation
- 2011: 80 percent allocation
- 2012: 40 percent allocation (as of April 13, 2012)

Deliveries of Ag-reliability water during the last five years have averaged 43 percent of the contractual entitlement¹².

6.1.1.3 Treatment of CVP Supplies

The City's CVP water supplies are treated at the City's John Jones Water Treatment Plant (JJWTP), which was originally constructed in 1979, expanded in 1988, and then expanded again in 2008. The JJWTP is located just north of the Delta-Mendota Canal in the southern portion of the City. With the recent plant expansion now complete, the current treatment capacity of the JJWTP is 30 million gallons per day (mgd). Future additional expansion of the JJWTP is planned in conjunction with buildout of the City's General Plan SOI and is described in the Citywide Water System Master Plan.

The City also treats and serves relatively small quantities of CVP/DMC water purchased by others through a "treatment and wheeling agreement" for use at the Patterson Pass Business Park only. The Patterson Pass Business Park is now built out. In 2011, 527 acre-feet of water from the Plain View Water District (PVWD) (now part of the BBID) USBR allocation was treated at the City's JJWTP and delivered to the Patterson Pass Business Park. Deliveries to the Patterson Pass Business Park in the last several years are shown below:

- 2005: 407 af
- 2006: 354 af
- 2007: 450 af
- 2008: 378 af
- 2009: 363 af
- 2010: 419 af
- 2011: 527 af

A comparable quantity of BBID CVP/DMC water is anticipated to be available for annual delivery to the Patterson Pass Business Park in the future. A copy of the agreement between the City and BBID (PVWD) for this water supply, treatment and wheeling is included in Appendix A.

¹² Based on USBR CVP South of Delta Ag allocations from 2008 to 2012.



6.1.2 Stanislaus River Water

The City, in partnership with the cities of Manteca, Lathrop and Escalon, and the SSJID, have constructed a surface water treatment plant near Woodward Reservoir in Stanislaus County and a transmission pipeline to deliver treated surface water to each city. The project is called the South County Water Supply Project (SCWSP). This water supply is based on SSJID's senior pre-1914 appropriative water rights to the Stanislaus River, coupled with an agreement with the USBR to store water in New Melones Reservoir. As part of the SCWSP, the City has been allocated up to 10,000 af/yr of water¹³. A Final EIR for the SCWSP was prepared in May 2000 (SCH No. 98022018).

Treated water deliveries commenced in July 2005, and deliveries have been essentially uninterrupted since then (see Figure 6). In the first few years, SCWSP deliveries were less than the City's full project allotment; however, during these years the City did not require its full SCWSP allotment, even though the full 10,000 acre-feet was available from SCWSP. However, as shown below, since 2009 the City has actually received more than its allotment. Historical deliveries from the SCWSP to the City are shown in Table 10.

Table 10. SCWSP Deliveries to City of Tracy and Other Project Participants		
Year	SCWSP Deliveries to City of Tracy, af	Total SCWSP Deliveries to All Project Participants, af^(a)
2005	3,146	6,493
2006	8,918	16,763
2007	9,130	17,139
2008	8,017	16,816
2009	10,401	19,746
2010	10,850	17,430
2011	11,786	(b)
^(a) Table 4.2 of the SSJID 2010 Urban Water Management Plan, August 2011.		
^(b) Data not available for 2011.		

The Draft and Final EIRs for the SCWSP analyzed the environmental impact of deliveries to the project participants of up to 44,000 af/yr (Draft EIR page 3-13). Total SCWSP deliveries to all project participants during 2006 to 2010 ranged from 16,763 af/yr in 2006, up to a maximum of 19,746 af/yr in 2009. The SCWSP is expected to have high reliability as a result of its senior pre-1914 rights. SSJID's 2010 UWMP¹⁴, adopted by SSJID in September 2011, indicates that it will meet 100 percent of urban demands in normal years, 84.8 to 91.5 percent of urban demands in single dry years (the percent of urban demand met increases in the future as agricultural demands

¹³ An additional amount of SCWSP supplies may be available to the City on an annual basis and in the future; see Section 6.2.4 Additional Supplies from the SCWSP.

¹⁴ Provost & Pritchard Consulting Group, South San Joaquin Irrigation District 2010 Urban Water Management Plan, August 2011.



decrease), and 98 to 100 percent of urban demand in multiple dry years. The City has assumed that it will be able to receive 95 percent of its allocation, even during single dry years. This increase in supply reliability is premised upon the other project participants not using their entire project allotment and that water being available to the City.

A copy of the agreement between the City and SSJID for this water supply is included in Appendix A.

6.1.3 Groundwater

10910(f) If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment.

- 10910(f)(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.*
- 10910(f)(2) A description of any groundwater basin or basins from which the proposed project will be supplied. For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree. For basins that have not been adjudicated, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.*
- 10910(f)(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.*
A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historical use records.
- 10910(f)(4) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project.*
A water assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.



6.1.3.1 Groundwater Overview

The City overlies a portion of the San Joaquin Valley Groundwater Basin-Tracy Sub-basin (Tracy Sub-basin). The City currently operates nine groundwater wells, with a total extraction capacity of about 15 mgd. Four wells (Production Wells 1, 2, 3 and 4) are located near the City's JJWTP and pump directly into the JJWTP clearwells, where the groundwater is blended with treated surface water. The other wells (Lincoln Well, Lewis Manor Well (Well 5), Park and Ride Well (Well 6), Ball Park Well (Well 7) and Well 8) are located throughout the City and pump water directly into the distribution system after disinfection. The City's newest well, Well 8, located near the intersection of Tracy Boulevard and 6th Street, was designed as an Aquifer Storage and Recovery Well (ASR Well), but has been put into service initially as an extraction well.

Figure 7 shows the locations of the City's wells and the Tracy Sub-basin.

6.1.3.2 Basin Description

The following section describes the Tracy Sub-basin, including its water-bearing formations, water levels, and water quality. Much of the following information has been incorporated from the City's UWMP. Except where noted, the description of the sub-basin is based largely on information provided in the 2003 California Department of Water Resources (DWR) Bulletin 118, in which the groundwater basin description was last updated in January 2006 (see Appendix C).

The sub-basin consists of unconsolidated to semi-consolidated sedimentary deposits that are bounded by the Diablo Range on the west, the Mokelumne and San Joaquin Rivers on the north, the San Joaquin River to the east, and the San Joaquin-Stanislaus County line on the south. Adjacent to the Tracy Sub-basin are the Eastern San Joaquin Sub-basin to the east, the Delta-Mendota Sub-basin to the south, and the Sacramento Valley Groundwater Basin to the north. The three sub-basins, not including the Sacramento Valley Groundwater Basin, are part of the San Joaquin Valley Groundwater Basin. The San Joaquin River and one of its major west side tributaries, Corral Hollow Creek, provide drainage from the Tracy Sub-basin. The San Joaquin River flows northward into the Sacramento and San Joaquin Delta and discharges into San Francisco Bay.

The Tracy Sub-basin is comprised of continental deposits of Late Tertiary to Quaternary age. These deposits include the Tulare Formation, Older Alluvium, Flood Basin Deposits, and Younger Alluvium. The cumulative thickness of these deposits increases from a few hundred feet near the Coast Range foothills on the west to about 3,000 feet along the eastern margin of the sub-basin.



Each of these formations is described below.

- The Tulare Formation is exposed in the Coast Range foothills along the western margin of the sub-basin and dips eastward toward the axis of the San Joaquin Valley. The Tulare Formation is approximately 1,400 feet thick and consists of semi-consolidated, poorly sorted, discontinuous deposits of clay, silt, and gravel. The Corcoran Clay occurs near the top of the Tulare Formation and confines the underlying fresh water deposits. The eastern limit of the Corcoran Clay is near the eastern boundary of the sub-basin. The Tulare Formation is moderately permeable, with most of the larger agricultural, municipal, and industrial wells completed below the Corcoran Clay and capable of producing up to about 3,000 gallons per minute (gpm). Smaller, domestic wells are typically completed above the Corcoran Clay, where the groundwater is often of poor quality. Specific yield values for the Tulare Formation in the San Joaquin Valley and Delta area range from 7 to 10 percent.
- The Older Alluvium is approximately 150 feet thick and consists of loosely to moderately compacted sand, silt, and gravel deposited in alluvial fans during the Pliocene and Pleistocene eras. The Older Alluvium is widely exposed between the Coast Range foothills and the Delta and is moderately to locally highly permeable.
- The Flood Basin Deposits occur in the Delta portion of the sub-basin and are the distal equivalents of the Tulare Formation and Older and Younger alluvial units. The Flood Basin Deposits consist primarily of silts and clays with occasional interbeds of gravel along the present waterways. Because of their fine-grained nature, the Flood Basin Deposits have low permeability and generally yield low quantities of water to wells. Occasional zones of fresh water are found in the Flood Basin Deposits, but they generally contain poor quality groundwater. The maximum thickness of the Flood Basin Deposits is about 1,400 feet.
- The Younger Alluvium includes those deposits that are currently accumulating, including sediments deposited in the channels of active streams, as well as overbank deposits and terraces of these active streams. The Younger Alluvium, consisting of unconsolidated silt, fine- to medium-grained sand, and gravel, is present to depths of less than 100 ft below ground surface (bgs) along the channel of Corral Hollow Creek. Sand and gravel zones in the Younger Alluvium are highly permeable and, where saturated, yield significant quantities of water to wells.

6.1.3.3 Groundwater Level Trends

The potentiometric surface in the semi-confined aquifer above the Corcoran Clay is located approximately 90 to 150 ft above mean sea level (msl). Review of hydrographs from wells throughout the sub-basin indicates that, except for seasonal variation resulting from recharge and pumping, water levels in most of these wells have remained stable over at least the last 10 years. As discussed below, as part of the City's Groundwater Management Policy, groundwater levels in the Tracy area are being monitored by the City on a semi-annual basis. These measurements indicate that groundwater levels in the City's wells have increased over the last few years, likely as a direct result of reduced groundwater pumpage by the City since 2005.



6.1.3.4 Groundwater Storage

There are no published groundwater storage values for the entire sub-basin (DWR, 2003). However, Hotchkiss and Balding (1971) estimated the groundwater storage capacity for the Tracy-Patterson Storage Unit at 4,040,000 af. The Tracy-Patterson Storage Unit includes the southern portion of the currently-defined Tracy Sub-basin, from approximately one mile north of Tracy to the San Joaquin-Stanislaus County line. Since the Tracy Sub-basin comprises roughly one-third of the Tracy-Patterson Storage Unit, it can be inferred that the approximate storage capacity of the Tracy Sub-basin is on the order of 1,300,000 af.

In an eight-year study conducted by Stoddard & Associates (1996), the average change in the entire sub-basin storage was approximately negative 13,000 af per year. Stoddard & Associates (1996) indicates a major contributor to this sub-basin storage decline was due to rainfall during the study period being well below average. Stoddard concluded that the sub-basin is in a hydrologic ally-balanced condition and is not overdrafted¹⁵. Similarly, DWR has not identified the Tracy Sub-basin as being in an overdrafted condition (per DWR Bulletin 118-80).

6.1.3.5 Groundwater Yield

A 1990 Kennedy/Jenks/Chilton (K/J/C) study estimated a perennial groundwater yield of 6,700 af/yr in the Tracy Sub-basin within the Tracy Study Area. However, in 2001, to determine if additional groundwater resources were available in the Tracy Study Area, the City conducted an updated groundwater analysis. The Estimated Groundwater Yield Study, prepared by Bookman-Edmonston Engineering (included as an appendix to the City's Groundwater Management Policy Mitigated Negative Declaration--see Appendix C) provided an evaluation of potential groundwater yield and determined that a 2,300 af/yr increase of the average annual operational groundwater yield above the groundwater yield recommended in the 1990 K/J/C study could be provided within the estimated sustainable yield of the Tracy sub-basin in the Tracy Study Area, without adverse impact to groundwater resources or quality in the Tracy Study Area over a 50-year timeframe. This expansion of groundwater usage to 9,000 af/yr would be within the City's estimated share of the aquifer's sustainable yield of 22,000 af/yr of the 28,000 af/yr total (which includes groundwater usage within West Side Irrigation District, Naglee-Burk Irrigation District, Plain View Water District (now part of the Byron Bethany Irrigation District), and Banta-Carbona Irrigation District). It was also estimated that this expansion of groundwater usage would result in a groundwater level drop of 10 feet, but would stabilize at this level.

¹⁵ Page 23, *City of Tracy 2010 Urban Water Management Plan*, prepared by Erler & Kalinowski, Inc., May 2011.



6.1.3.6 Groundwater Quality

Groundwater quality in the Tracy Sub-basin varies spatially and with depth. In general, the northern part of the Tracy Sub-basin is characterized by a sodium water type, and the southern part of the Sub-basin is characterized by calcium-sodium type water. The northern part of the Tracy Sub-basin is also characterized by a wide range of anionic water types, including bicarbonate; chloride; and mixed bicarbonate-chloride. Major anions in the southern part of the Tracy Sub-basin include sulfate-chloride and bicarbonate-chloride.

There is also a difference between the water quality in the water-bearing zones above the Corcoran Clay (termed the “semi-confined aquifer”) and below the Corcoran Clay (termed the “confined aquifer”). Generally, the water quality of the confined aquifer is better than that of the semi-confined aquifer. Total Dissolved Solids (TDS) concentrations in well water sampled in the semi-confined aquifer ranged between 1,000 milligrams per liter (mg/L) and 1,500 mg/L, while the measured TDS in the confined aquifer was less than 1,000 mg/L. In the vicinity of Tracy, the TDS of the confined aquifer is between 600 mg/L and 700 mg/L.

Constituents present at elevated concentrations throughout the Tracy Sub-basin in both the semi-confined and confined aquifers include chloride, nitrate, sulfate, and boron. Elevated chloride occurs in several areas near Tracy and along the San Joaquin River. Areas of elevated nitrate occur in the northwestern part of the Tracy Sub-basin and in the vicinity of Tracy. Elevated boron occurs over a large portion of the Sub-basin from south of Tracy extending to the northwest side of the Tracy Sub-basin. Sulfate concentrations of up to 500 mg/L have been detected in Tracy Sub-basin groundwater. The groundwater near Tracy is considered to be very hard.

6.1.3.7 Groundwater Management

The 1992 Groundwater Management Act, AB 3030, established provisions by which local water agencies could develop and implement groundwater management plans (GMPs). GMPs are generally designed to prevent local and regional aquifer overdrafting, which reduces available groundwater resources and which, under certain conditions, can lead to degradation of water quality and to land subsidence. The City has been, and continues to be, involved in both regional and local groundwater management efforts.

6.1.3.7.1 Groundwater Management Plan for the Northern Agencies in the Delta-Mendota Canal Service Area and a Portion of San Joaquin County

In 1996, the City Council adopted the Northern Delta-Mendota Canal Groundwater Management Plan pursuant to Water Code Sections 10750 et seq., also known as AB 3030. The plan was developed in coordination with other DMC northern agencies, including: Banta-Carbona Irrigation District, Byron-Bethany Irrigation District, Del Puerto Water District, Patterson Irrigation District, West Stanislaus Irrigation District, Westside Irrigation District, San Joaquin County, and the City of Tracy. The 1996 GMP included information on groundwater levels and quality, conjunctive management of groundwater and surface water resources, and measures to protect groundwater resources within the plan area.



In 2011, the GMP was revised to include additional information to comply with new provisions adopted by the State Legislature which included:

- Department of Water Resources (DWR) to establish a priority schedule for monitoring groundwater basins and elevation reports as well as issuing recommendations to local entities to improve water quality;
- Permit local entities to determine best methods of groundwater monitoring to meet local demand; and
- DWR to implement groundwater monitoring if local agencies fail to do so. This will result in loss of eligibility for State grant funds.

The City of Patterson plans to become a northern agency member and the revised GMP will reflect their inclusion.

A public hearing regarding the revised GMP was held on February 7, 2012. The revised GMP was adopted by the Tracy City Council on May 1, 2012.

A copy of the revised GMP is included in Appendix C.

6.1.3.7.2 San Joaquin County Groundwater Export Ordinance

Occasional drought conditions and ongoing restrictions on Delta export pumping have reduced the imported CVP surface water supply available to entities located south of the Delta that rely on DMC/CVP water (Stoddard, 1996). Arrangements for water transfers between entities that receive DMC/CVP water were developed to allocate the reduced DMC/CVP supply to match demand, including pumping of groundwater into the DMC for conveyance and use in other areas. This additional groundwater extraction, for the purpose of selling it to other DMC/CVP users, raised concerns amongst sub-basin groundwater users regarding groundwater overdraft and quality degradation. In response to these concerns, San Joaquin County enacted a Groundwater Export Ordinance in June 2000 that now requires an entity to secure a permit from San Joaquin County prior to exporting groundwater out of the County (such as by pumping extracted groundwater into the DMC for conveyance to other areas).

6.1.3.7.3 City Groundwater Management Policy and Mitigated Negative Declaration for City Groundwater Production of 9,000 af/yr

On a local level, in 2001, the City adopted a Groundwater Management Policy, and prepared a Groundwater Management Policy Mitigated Negative Declaration (see Appendix C). The Groundwater Management Policy and the Groundwater Management Policy Mitigated Negative Declaration are described below.

As discussed above, in 2001, the City anticipated that, to make up a projected temporary shortfall between supply and demand, groundwater extraction would have to increase from approximately 6,000 af/yr to a maximum of 9,000 af/yr over the three-year period from 2001 through 2004. Prior to 2001, it had been estimated that 6,700 af/yr was the City's sustainable groundwater extraction rate (K/J/C, 1990). However, the 2001 Estimated Groundwater Yield Study by Bookman-Edmonston, revised the estimated average annual operational groundwater yield to



9,000 af/yr. This operational yield, though larger than the earlier estimate, is still well under the City's estimated 22,000 to 28,000 af/yr share of the Tracy Sub-basin's sustainable yield.

Pursuant to the findings of the 2001 Bookman-Edmonston study, the Tracy City Council adopted a Groundwater Management Policy in 2001 that established the City's maximum annual groundwater extraction rate of 9,000 af/yr. To comply with CEQA and to evaluate the potential negative effects of increased groundwater extraction on water quality, water levels, and subsidence, the City also prepared a Groundwater Management Policy Mitigated Negative Declaration (see Appendix C). The Groundwater Management Policy Mitigated Negative Declaration specifies the frequency and type of monitoring and reporting the City must conduct to evaluate the sustainability of the increased groundwater extraction rate.

Consistent with the Groundwater Management Policy Mitigated Negative Declaration, the City has maintained groundwater production rates well below the estimated sustainable yield of 9,000 af/yr. In addition, the City hired Bookman to monitor the impacts of groundwater extraction on groundwater levels, groundwater quality, and land subsidence. Bookman's most recent Mitigation Monitoring Report dated January 23, 2009 covering the period from November 2007 through November 2008 includes well production data, water quality data, hydrographs, and groundwater contour maps for the City's production and monitoring wells (excerpts from this report are provided in Appendix C). As described in the report, there is no indication that pumping by the City is significantly or adversely affecting groundwater levels or water quality at this time. In fact, the report shows that groundwater levels in the City's wells have increased over the last couple of years, likely as a direct result of decreased groundwater pumpage by the City since 2005.

6.1.3.7.4 Tracy Regional Groundwater Management Plan (Regional City GMP)

In addition to participating in the development of the Tracy Sub-basin GMP, in 2005 the City was awarded a DWR grant for approximately \$185,000 to prepare a Tracy Regional Groundwater Management Plan (Tracy Regional GMP) for the portion of the Tracy Sub-basin that underlies the City of Tracy. The Tracy Regional GMP was completed in March 2007. A key objective of the Tracy Regional GMP was the development of Basin Management Objectives (BMOs) for groundwater levels, groundwater quality, and land subsidence in the region.

Excerpts from the Tracy Regional GMP are provided in Appendix C.

6.1.3.8 Historical Groundwater Use

As discussed previously, the City currently operates nine groundwater extraction wells (see Figure 6):

- Well 1 (at JJWTP)
- Well 2 (at JJWTP)
- Well 3 (at JJWTP)
- Well 4 (at JJWTP)



- Lincoln Well
- Well 5 (Lewis Manor Well)
- Well 6 (Ball Park Well)
- Well 7 (Park & Ride Well)
- Well 8

The City's newest well, Well 8, was constructed in January 2004 and was permitted by the California Department of Public Health (DPH) for use as a municipal production well in September 2010. Well 8 is ultimately intended for use with the City's future Aquifer Storage and Recovery Program (see discussion under Section 6.2.5 Aquifer Storage and Recovery).

Historically, groundwater has accounted for approximately 40 to 50 percent of the City's annual water supply. Prior to 2000, groundwater extraction by the City totaled less than 6,000 af/yr. Between 2000 and 2004, to meet increased demands for water, the City began extracting additional groundwater, with annual usage up to about 7,700 af/yr. In 2005, groundwater extraction decreased to less than 6,000 af/yr primarily because: (1) the SCWSP was completed and the City began receiving Stanislaus River water; and (2) rainfall was above normal, meaning that the City received a higher percentage of its DMC/CVP contractual entitlements. The City's groundwater production over the last seven years is provided in Table 11.

Table 11. Historical Groundwater Production							
	2005	2006	2007	2008	2009	2010	2011
Total Groundwater Production, af/yr	5,826	3,034	3,672	2,598	1,327	498	292
<i>Source: Table 11 Current and Historical Potable Water Supply, City of Tracy 2010 UWMP, May 2011 and 2011 Water Production Data.</i>							

As noted above, other groundwater users in the Tracy area include the West Side Irrigation District, Naglee-Burk Irrigation District, Plain View Water District (now the Byron Bethany Irrigation District), Banta-Carbona Irrigation District. Although current groundwater pumpage by these users was not available for inclusion in this WSA, the 2001 Estimated Groundwater Yield Study, which established the City's estimated groundwater yield of 9,000 af/yr, considered the cumulative groundwater usage in the study area by the City and other users in the Tracy area.

6.1.3.9 Projected Future Groundwater Use

As discussed above, the 2001 Estimated Groundwater Yield Study indicated an average annual operational groundwater yield for the City of 9,000 af/yr. The study indicated that this increase in the City's groundwater yield was within the estimated sustainable yield of the groundwater sub-basin within the Tracy Study Area, and could be maintained without adverse impact to groundwater resources or quality in the Tracy Study Area over a 50-year timeframe. However, because the hard, high-TDS groundwater is of poorer quality compared with the City's surface water sources, the City is planning to scale back its future groundwater extractions during normal



years. For example, at buildout of the General Plan, groundwater production in normal years is anticipated to be approximately 2,500 af/yr. However, the City will continue to rely on groundwater for peaking, drought, and emergency supplies, and may pump up to 9,000 af/yr or more during single dry or multiple dry years, as needed, to meet demands when surface water supplies may be limited.

The City's existing groundwater wells currently have the capability of pumping 9,000 af/yr. The City has replaced a number of older wells with new wells (*e.g.*, the Tidewater Well was replaced by Well 8). Well 8, which is ultimately intended for use as part of the City's future Aquifer Storage and Recovery Program (see further discussion below), was constructed in 2004, equipped in early 2010 and put into operation as an extraction well in September 2010. In the future, the City will construct new production and emergency supply wells, as needed, to replace and supplement existing, aging production wells and provide additional supply reliability in the event of a drought or other emergency situation.

The City's potential uses of groundwater during droughts are consistent with Tracy's Groundwater Management Policy (discussed above). In the event that the City is unable to secure additional high quality surface water supplies in the future, groundwater remains a sustainable water supply up to 9,000 af/yr. However, by reducing groundwater extraction on an average annual basis to approximately 2,500 af/yr, the City will:

- Increase the overall quality of its drinking water, thus increasing customer satisfaction and reducing system maintenance and repair caused by the lower-quality groundwater;
- Recharge the underlying aquifer, effectively increasing the availability of groundwater during a drought or emergency condition (*i.e.*, the City will effectively be practicing "in-lieu groundwater banking" of its groundwater); and
- Reduce salt loading to the City's wastewater treatment plant, which will help the City comply with wastewater discharge requirements.

If the City decreases future groundwater extraction during normal and wet years, current groundwater levels, groundwater flow directions and gradients, and groundwater quality would be expected to change correspondingly. Further, if the City moves ahead with its proposed future ASR Program (see discussion below), changes in groundwater flow patterns associated with the injection of treated surface water into the confined aquifer zone may occur. Groundwater quality would be expected to improve as a result of the introduction of higher quality surface water into the aquifer.

Table 12 shows the anticipated future groundwater production during a normal year.



Table 12. Projected Future Groundwater Production in Normal Years

	2015	2020	2025	2030	2035
Total Groundwater Production, af/yr ^(a)	2,500	2,500	2,500	2,500	2,500

Source: Table 18 Current and Projected Water Supply Allocations-Normal Year, City of Tracy 2010 UWMP, May 2011

^(a) Although the City can sustainably extract up to 9,000 af/yr of groundwater, the City is planning to scale back its groundwater extraction in future years to increase the overall quality of its water supply. The City will continue to rely on groundwater for peaking and drought and emergency supplies, up to 9,000 af/yr, on an as-needed basis.

6.1.3.10 Groundwater Sufficiency

The City's 2010 UWMP addressed the sufficiency of the City's groundwater supplies, in conjunction with the City's other existing and additional water supplies, to meet the City's existing and planned future uses¹⁶. Based on the information provided above and that included in the City's 2010 UWMP, the City's groundwater supply, together with the City's other existing and additional planned future water supplies, is sufficient to meet the water demands of the Proposed Project, in addition to the City's existing and planned future uses. As discussed above, the City's use of groundwater over the last few years has significantly declined, primarily due to the availability of new high-quality surface water supplies from the SCWSP. In the future, although the City can sustainably extract up to 9,000 af/yr of groundwater, the City's use of groundwater is anticipated to decrease even further, as additional high-quality surface water supplies become available. As shown in Table 12, in the future, assuming normal year hydrologic conditions, annual groundwater use is anticipated to be as low as 2,500 af/yr by 2015. This anticipated future groundwater pumpage is significantly below the City's historical groundwater pumpage (see Table 11) and the average annual operational yield of 9,000 af/yr.

By reducing groundwater extraction on an average annual basis, the City will: (1) recharge the underlying aquifer, effectively increasing the availability of groundwater during a drought or emergency condition (*i.e.*, the City will effectively be "banking" its groundwater); and (2) increase the overall quality of its drinking water, thus increasing customer satisfaction and reducing system maintenance and repair caused by the lower-quality groundwater.

6.1.4 Out-of-Basin Water Banking

The Semitropic Groundwater Storage District Groundwater Storage Bank (Semitropic) is a water storage system that began operation in the early 1990s. Located in Kern County between the California Aqueduct and the Delta-Mendota Canal, Semitropic is one of eight California groundwater banking agencies. Semitropic works by having its banking partners deliver their surplus water to Semitropic for groundwater storage. Then, when requested by the banking partner, Semitropic returns the stored water to the California Aqueduct for use by its partners either by exchanging its entitlement or by reversing the intake facility (known as "pumpback").

¹⁶ Chapter 4, *City of Tracy 2010 Urban Water Management Plan*, prepared by Erler & Kalinowski, Inc., May 2011.



Through “pumpback”, Semitropic can deliver a maximum of 90,000 af/yr of water into the California Aqueduct. The State would then deliver the water to the banking partners.

The total storage capacity at Semitropic is 2.15 million acre-feet and, as listed below, there is still a significant amount of storage capacity which is uncommitted and available. The current Semitropic banking partners and their reserved/available storage capacities are listed below¹⁷:

- Original Water Bank (1.0 million acre-feet)
 - Metropolitan Water District of Southern California: 350,000 acre-feet
 - Santa Clara Valley Water District: 350,000 acre-feet
 - Alameda County Water District: 150,000 acre-feet
 - Zone 7 Water Agency: 65,000 acre-feet
 - Newhall Land and Farming Company: 55,000 acre-feet
 - San Diego County Water Authority: 30,000 acre-feet
- Stored Water Recovery Unit (650,000 acre-feet)
 - Semitropic’s Contribution to Semitropic-Rosamond Water Banking Authority (SRWBA): 300,000 acre-feet (see below)
 - Semitropic Portion of Stored Water Recovery Unit (350,000 acre-feet)
 - Poso Creek Water Company: 60,000 acre-feet
 - Rampage Vineyard: 18,000 acre-feet
 - Uncommitted: 122,000 acre-feet
 - Not Available Until SRWBA is Committed: 150,000 acre-feet
- SRWBA (800,000 acre-feet)
 - Portion Contributed by Semitropic (300,000 acre-feet)
 - San Diego County Water Authority: 15,000 acre-feet
 - Available Storage: 285,000 acre-feet
 - Antelope Valley Water Bank (500,000 acre-feet)
 - San Diego County Water Authority: 25,000 acre-feet
 - Rosamond Community Services District: 30,000 acre-feet
 - Available Storage: 445,000 acre-feet

6.1.4.1 Pilot Agreement

In June 2006, the City entered into a pilot agreement with Semitropic Water Storage District for 1,000 acre-feet of water storage at Semitropic, which allows for an annual withdrawal of up to 333 af/yr (*e.g.*, 1,000 acre-feet divided by 3). A Negative Declaration was prepared for the pilot agreement pursuant to the provisions of CEQA (SCH No. 2006052049) and a FONSI was issued by USBR (FONSI-05-111). The pilot agreement was intended to establish the procedures for water deposits and withdrawals by the City of Tracy.

¹⁷ Based on information provided on Semitropic Water Storage District website: www.semitropic.com, as of May 2012.



A copy of the City's pilot agreement with Semitropic is included in Appendix A. Now that the permanent agreement with Semitropic has been implemented, this pilot agreement has been terminated.

6.1.4.2 Permanent Agreement

On June 5, 2012 the Tracy City Council approved a long-term agreement with Semitropic for 3,500 units of water storage. One unit of water storage allows for a withdrawal of up to 1 af/yr for three years; hence, the agreement would allow for withdrawal of 3,500 af/yr for three years (10,500 af total). To store water in Semitropic, the City would not withdraw its share of CVP water from the DMC, but instead allow this water to continue to move through the DMC and California Aqueduct systems for delivery to and use by Semitropic. This is called "in lieu storage." Upon request by the City, in accordance with the contract, Semitropic would pump the stored water into the California Aqueduct and a like amount of water would be made available to the City directly from the DMC. Though the City could utilize this supply in any year, it would be most valuable during drought years when the City's CVP surface water supplies are reduced. If the City uses water from the Semitropic water bank in any given year, it would work to manage its supplies during subsequent years such that it could "refill" its water bank for future water use. By banking surplus CVP water at Semitropic, the City will increase the quantity of supplies available during drought and/or other emergency conditions, thereby increasing the reliability of its water supply.

The purchase price for capacity in Semitropic was \$5,206,961. A Negative Declaration was prepared for the permanent agreement pursuant to the provisions of CEQA (SCH No. 2010092012) and a FONSI was issued by USBR (FONSI-09-164). A copy of the City's permanent agreement with Semitropic is included in Appendix A.

To date, through the pilot agreement, the City has deposited 4,500 acre-feet of supplies in Semitropic and has withdrawn 200 acre-feet (100 acre-feet in November 2007 and 100 acre-feet in December 2008). The City's current balance is 4,300 acre-feet; these supplies are available to the City for withdrawal in dry years, if needed. Based on this current balance, it is assumed that 1,750 af/yr will be available for withdrawal in 2015, and 3,500 af/yr will be available thereafter.

6.2 Additional Planned Future Potable Water Supplies

The City is currently anticipating the following additional planned future potable water supplies:

- Additional surface water from the Delta-Mendota Canal (CVP);
- Surface water from BBID pre-1914 water rights;
- Additional supplies from the SCWSP; and
- Aquifer Storage and Recovery.

Each of these additional planned future water supplies is described below. Summary tables listing the City's existing and additional planned future water supplies and historical and anticipated future quantities are provided at the end of this section.



6.2.1 Additional Central Valley Project Water via the Delta-Mendota Canal

6.2.1.1 Additional CVP Supplies from WSID

As previously mentioned, the City has an option for an additional assignment of 2,500 af/yr of Ag-reliability CVP contract entitlement water from the WSID. Per the agreement with WSID, the City can execute this assignment at any time before midnight on February 27, 2014. Environmental review and all other required reviews and approvals for this assignment have been completed (as described in Section 6.1.1.2), such that this assignment can be executed with the transfer of the required funds.

A copy of the City's agreement for assignment of this water supply from WSID is included in Appendix A. An amount of \$2.125 million has been included in the City's CIP future appropriations for FY11-12 (CIP 75061) for this water supply assignment from WSID.¹⁸ The City plans to exercise this option in late 2013 or early 2014, prior to the February 27, 2014 deadline¹⁹ with the additional supply of 2,500 af/yr being available thereafter,

6.2.1.2 Additional CVP Supplies from BBID

The area served by the former PVWD is now part of BBID. Due to on-going urbanization in portions of BBID's service area (including the Proposed Project), BBID anticipates that it may have CVP contract entitlement water (with Ag-reliability) available for municipal uses in the future. The City and BBID are negotiating a phased option agreement to assign portions of BBID's CVP/DMC contract right to the City. The estimated quantity of contract entitlement water potentially subject to such an agreement is approximately 11,000 af/yr. The exact quantity of BBID CVP water entitlement is the subject of the future agreement between the City and BBID. However, previous discussions have indicated that a contract entitlement quantity of water equal to 3.4 acre-feet per year per acre of converted agricultural land may be available for M&I use.

It is estimated that an agreement between the City and BBID can be achieved within the next few years to allow for the transition of additional CVP supplies to be available to the City starting in 2015 (at 3,000 af/yr) and increasing to 11,000 af/yr by 2030. An approval will be required from the USBR and compliance with CEQA and National Environmental Policy Act (NEPA) will be required. Because the exact quantity of water available and terms of a future agreement are yet to be negotiated, the total cost and financing mechanisms for acquiring this supply have not yet been determined.

¹⁸ City of Tracy Capital Improvement Program for FY11-12 through FY15-16, July 2011.

¹⁹ *Water Supply Assessment for the Downtown Specific Plan*, prepared by West Yost Associates, April 2009.



6.2.2 Surface Water from BBID Pre-1914 Water Rights

Part of the proposed Tracy Hills Specific Plan area was annexed into the BBID and is entitled to water service from BBID, using BBID's pre-1914 appropriative water rights. The City anticipates that up to 3,000 af/yr of pre-1914 water rights water could be provided by BBID on a year-round basis (via the DMC with a proposed Exchange Agreement with the USBR) to serve the proposed Tracy Hills Project in the BBID service area. Because the water supply is based on pre-1914 appropriative rights, the supply is considered to be firm and well-established.

Future work to secure this water supply includes: finalizing agreements between the City and BBID; completion of a Water Supply Assessment and required environmental documentation; and execution of an Exchange Agreement with the USBR to provide for a year-round supply to be conveyed to the City's JJWTP via the DMC. The proposed supply will need to meet the City's reliability criteria.

Costs for obtaining the water supply from BBID and delivering the water supply to the City's JJWTP for treatment and use at the Tracy Hills Project will be paid in a manner consistent with the City's applicable fee program requiring fair share participation by the project developer. Required reviews and approvals will likely include the following entities: the City, Tracy Hills Project developer, BBID, and USBR.

The planning, design and construction of the conveyance infrastructure will take a minimum of two years to complete once design is initiated. The City and the developer of the Tracy Hills Project are evaluating the potential Exchange Agreement between BBID and USBR, and anticipate that this water supply source could be available starting in 2015 (at 1,000 af/yr) and increasing to 3,000 af/yr by 2025.

6.2.3 Additional Supplies from the SCWSP

The City is anticipating that an additional 2 mgd of treatment and conveyance capacity, and 3,000 af/yr of treated water supplies will be available from the SCWSP in the future. This additional supply (currently anticipated to be a re-assignment of 1,120 af/yr of unused project supply from the City of Lathrop and 1,880 af/yr directly from SSJID available as a result of SSJID's conservation efforts) would have the same high reliability as the supply that the City is currently receiving from the SCWSP. Delivery of these additional supplies to the City would be through the same, existing facilities currently delivering the City's existing SCWSP supplies. Delivery of these additional supplies will be subject to approval by the other SCWSP partners and environmental review. The City anticipates that these additional supplies will be available starting in 2015.

6.2.4 Aquifer Storage and Recovery

The City's proposed ASR Program would allow the City to optimize conjunctive use of its water supplies through injection of surplus treated (potable) drinking water into selected aquifer zones within the groundwater Sub-basin for storage when surplus supplies are available, and recovery of that potable water from the aquifer to optimize water quality and meet seasonal peak demands during drought periods, or when emergency or disaster scenarios preclude the use of imported water supplies.



As discussed above, the City constructed a new well in January 2004 (Well 8) that was designed to allow for both injection and extraction of water supplies in conjunction with the City's proposed ASR Program. In early 2009, the City contracted to construct the above-ground well facilities (including the pump house, pump, motor, SCADA, electrical, telemetry, chemical feed systems, *etc.*) to have Well 8 operational in September 2010, initially as an extraction well, and in the future as part of the City's proposed ASR Program. In addition, the City has already installed two monitoring wells for use in the demonstration project monitoring and testing for the proposed ASR Program.

The City has obtained regulatory approval from the Central Valley Regional Water Quality Control Board (RWQCB) to conduct both Phases 1 and 2 of its ASR Demonstration Testing Program. A Negative Declaration was prepared for the project in November 2010 pursuant to the provisions of CEQA (SCH No. 2010112049). The Phase 1 ASR Demonstration Testing was conducted between January 2011 and September 2011 and involved the injection of 233 acre-feet (76 million gallons) of treated SSJID potable water, storage in the confined aquifer and subsequent extraction of 340 acre-feet (111 million gallons) of water²⁰. The Phase 2 ASR Testing was initiated in late December 2011 and is anticipated to continue to approximately August/September 2012. Once the City completes the demonstration program, prepares required environmental documentation, and secures approval to operate a permanent ASR Program, it is estimated that as much as 685 to 915 af/yr of potable water could be injected into the aquifer, assuming a 5-month continuous injection rate of 1.5 to 2.0 mgd. Implementation of the City's ASR Program will occur incrementally (as new ASR wells are constructed) with up to 3,000 acre-feet of high-quality water ultimately (by 2025) being available in drought years to increase the reliability of the City's water supply. Approximately 1,000 af/yr of ASR supply is anticipated to be available starting in 2015 and increasing to 3,000 af/yr by 2025.

The City has included appropriations of \$200,000 for FY11-12 in its CIP for Phase 2 Demonstration ASR Testing and preparation of environmental documentation (CIP 75078).²¹

6.3 Existing Non-Potable Water Supplies

6.3.1 Diversion of Non-Potable Surface Water from Sugar Cut

As described in the Water Supply Assessment for the Holly Sugar Sports Park²², the City's Holly Sugar property has historically (since at least 1912) been irrigated using untreated surface water diverted from Sugar Cut. Over the years, the Holly Sugar property has been farmed and planted with a variety of crops, including winter wheat, corn, tomatoes, alfalfa and, when the property was owned by Holly Sugar, sugar beets. The Holly Sugar property is currently being farmed and irrigated with untreated surface water diverted from Sugar Cut. The water rights to the untreated surface water from Sugar Cut are considered to be pre-1914 appropriative rights, and may also

²⁰ *Interim (Final) Status Report for Well 8 ASR Demonstration Program, Memorandum* prepared for City of Tracy by Pueblo Water Resources, dated December 7, 2011.

²¹ City of Tracy Capital Improvement Program for FY11-12 through FY15-16, July 2011.

²² *Water Supply Assessment for the Holly Sugar Sports Park*, prepared by West Yost Associates, June 2009.



be classified as riparian rights. Use of the water from Sugar Cut has been continuous on the Holly Sugar property for irrigation purposes since at least 1912.

The continued use of this non-potable water supply from Sugar Cut is proposed for the irrigation of the proposed Holly Sugar Sports Park²³. This use is considered a continued beneficial use of the supply for essentially the same purpose of irrigation. The use of untreated surface water from Sugar Cut for non-potable water uses for the proposed Holly Sugar Sports Park would be for the interim only, until recycled water supplies become available. Therefore, future use of this non-potable supply, beyond the interim irrigation of the proposed Holly Sugar Sports Park, is not anticipated.

6.4 Additional Planned Future Non-Potable Water Supplies

6.4.1 Recycled Water

In 2002, the City adopted a Recycled and Non-Potable Water Ordinance requiring all new subdivisions, to the extent practicable, to install the required infrastructure (such as dual-distribution pipelines) to provide recycled water to meet non-potable water demands at parks, golf courses, athletic fields, schools, median island landscapes, and industrial sites. As described in Chapter 2 of the Citywide Water System Master Plan, one of the principles developed for sustainable infrastructure in the City is to promote and encourage the use of recycled water for non-potable uses in existing and future publicly landscaped areas in the City, where feasible.

At buildout of the City's General Plan, it is estimated that the recycled water demand for landscape irrigation will be approximately 7,500 af/yr²⁴. Based on the City's Citywide Wastewater System Master Plan, the quantity of recycled water supply available is up to 22.4 mgd (25,000 af/yr) at buildout, based on anticipated wastewater flows and the capacity of the City's WWTP²⁵. Recycled water will be treated to a tertiary level in accordance with Title 22 requirements at the City's WWTP and will be distributed to recycled water use areas within the City's SOI. It is anticipated that adequate recycled water supplies will be available to meet the projected recycled water demands at buildout of the City's General Plan, including those associated with the Proposed Project. Approvals and permits for the production, distribution and use of recycled water will be required from the RWQCB and the California Department of Public Health (DPH).

²³ *Water Supply Assessment for the Holly Sugar Sports Park*, prepared by West Yost Associates, June 2009.

²⁴ City of Tracy Citywide Water System Master Plan, Draft Report, prepared by West Yost Associates, March 2012.

²⁵ Table C-1, Tracy Wastewater Master Plan, Draft Report, prepared by CH2MHill, May 2012.



6.4.2 Shallow Non-Potable Groundwater

As discussed above, the Tracy Sub-basin underlying the City has two aquifers: semi-confined and confined. The uppermost semi-confined aquifer is primarily comprised of alluvial and flood basin formations. The underlying confined aquifer is primarily comprised of the Tulare Formation and it is overlain by the Corcoran Clay, which separates the upper unconfined aquifer from the underlying confined aquifer. The City's production wells draw from the confined aquifer only and the average annual operational groundwater yield of 9,000 af/yr described in previous sections applies only to the confined aquifer. The City does not currently pump any groundwater from the semi-confined aquifer.

The hydraulic characteristics of the semi-confined aquifer are highly variable, based on site-specific conditions. Wells in the semi-confined aquifer produce 6 gpm to 5,300 gpm; however, pump test data are limited. The transmissivity of the semi-confined aquifer, including the recent alluvium and upper portions of the Tulare Formation, ranges between 600 to greater than 2,300 gallons per day per foot (gpd/ft). The storativity is about 0.05. Where thicker sequences of sand are present, the transmissivity may be higher.

Relatively speaking, groundwater levels in the semi-confined aquifer are significantly deeper at the southern end of the City typically measuring about 48 feet below ground surface, whereas groundwater levels at the northern end of the City are as shallow as 5 feet below ground surface. There appears to be a natural groundwater cycle where water levels rise and then lower every few years (in response to pumpage), and there is also a seasonal fluctuation due to seasonal groundwater use and in response to tidal influences. Currently groundwater levels in the semi-confined aquifer appear on the rise at the northern end of the City; however, there are insufficient data in the southern portion of the City to make any conclusions in this regard. Groundwater flow in the semi-confined aquifer is generally from the southeast towards the Old River north of the City.

Groundwater recharge in the semi-confined aquifer occurs from rainfall, applied water that percolates to the water table, and seasonal infiltration by the creeks. The recharge for the shallow semi-confined aquifer is generally from the south, from the Coast Ranges, and moves to the north and west.

The semi-confined aquifer is monitored by other entities at four locations within the City. Static water levels are measured on a quarterly basis and reported to the RWQCB. Groundwater quality is typically monitored just for specific contaminants of concern and does not coincide with the general parameters monitored by the City and others in the confined aquifer.

Current pumping from the semi-confined aquifer is thought to be widespread, via private wells, and used primarily for irrigation of agricultural areas. Current pumpage quantities are unknown; however, the stable groundwater level trends in the semi-confined aquifer indicate that existing pumpage is within the operational yield of the semi-confined aquifer.



Groundwater quality information is limited for the semi-confined aquifer. Most of the available water quality data for the semi-confined aquifer is from data from a 1968 basin-wide study. Groundwater extracted from the semi-confined aquifer is generally classified as being high in salts and not suitable for potable uses, but may be considered suitable for non-potable uses such as agricultural irrigation. The following provides an overview of key water quality constituents in the semi-confined aquifer:

- TDS varies greatly (ranging from 567 mg/L to 2,310 mg/L), but overall is poorer quality than the confined aquifer and exceeds recommended drinking water Maximum Contaminant Levels (MCLs)²⁶. The TDS concentrations increase toward the north and to the west.
- Sulfate concentrations in the semi-confined aquifer ranged from less than 100 to over 600 mg/L²⁷.
- Chloride concentrations in the semi-confined aquifer range from 50 to 850 mg/L, with the lowest concentrations near the Coast Ranges, south of Tracy near the airport²⁸.
- Boron concentrations in the semi-confined aquifer range from 0.7 to 6.3 mg/L²⁹. The lowest concentrations follow a similar pattern as the TDS, with low concentrations near the Coastal Range foothills (to the south).

The shallow groundwater is considered to be suitable for most agricultural irrigation purposes. However, given the relatively poor permeability of the soils in the City, there is concern for the potential accumulation of salts in the soil, leading to soil binding. This could partially be mitigated by planting salt-tolerant turf and plant materials and providing good subsurface drainage; however, this may not be a feasible long-term solution for the City.

6.5 Summary of Existing and Additional Planned Future Water Supplies

Table 13 provides a summary of the City's existing and additional planned future water supply entitlements. Table 14 provides a summary of historical water supply deliveries and anticipated existing and additional planned future water supplies during normal years from each of the City's water supplies. A discussion of the future anticipated availability of these existing and additional planned future water supplies during dry years is provided in the next section.

²⁶ The recommended MCL for TDS is 500 mg/L, with an upper limit of 1,000 mg/L if it is not reasonable or feasible to supply water with lower concentrations. Short-term use is allowed for water between 1,000 and 1,500 mg/L.

²⁷ The recommended MCL for sulfate is 250 mg/L, with an upper limit of 500 mg/L if it is not reasonable or feasible to supply water with lower concentrations. Short-term use is allowed for water up to 600 mg/L.

²⁸ The recommended MCL for chloride is 250 mg/L, with an upper limit of 500 mg/L if it is not reasonable or feasible to supply water with lower concentrations. Short-term use is allowed for water up to 600 mg/L.

²⁹ There is no established MCL for boron. However, California DPH has established an Action Level of 1 mg/L for boron.



Table 13. Summary of Existing and Additional Planned Future Water Supplies

Supply	Water Right or Available Supply Quantity, af/yr	Supply Ever Used by City
Existing Water Supplies		
USBR CVP Contract (City Contract) (M&I Reliability)	10,000	Yes
USBR CVP (BCID assignment) (Ag Reliability)	5,000	Yes
USBR CVP (WSID assignment) (Ag Reliability)	2,500	Yes
South County Water Supply Project (pre-1914 rights)	10,000	Yes
Groundwater ^(a)	9,000	Yes
Semitropic Water Storage Bank (Permanent Agreement) ^(b,c)	3,500	Yes
Additional Planned Future Water Supplies		
USBR CVP (WSID Option) (Ag Reliability)	2,500	No
USBR CVP (BBID contract) (Ag Reliability)	11,000	No
BBID (pre-1914)	3,000	No
Additional SCWSP (pre-1914 rights)	3,000	No
Aquifer Storage and Recovery ^(c)	3,000	No
Recycled Water ^(d)	25,000	No
<p>^(a) The City is planning to decrease groundwater use to 2,500 af/yr by the year 2015. However, studies described in this WSA have indicated that up to 9,000 af/yr of groundwater is available to the City to make up for shortfalls in the event of a severe drought or other water shortage.</p> <p>^(b) As of June 2012, the Semitropic Permanent Agreement replaced the previous Pilot Agreement.</p> <p>^(c) Supplies from Semitropic and ASR are assumed to be dry year supplies. As such, during normal years, supplies from these sources are assumed to be 0 af/yr.</p> <p>^(d) Based on the total projected recycled water production at buildout (22.4 mgd) (reference: Table C-1, Tracy Wastewater Master Plan, Draft Report, prepared by CH2MHill, May 2012).</p>		

Table 14. Quantity of Historical Water Deliveries and Existing and Additional Planned Future Water Supplies in Normal Years												
Supply	Historical Water Deliveries, af/yr						Projected Future Available Supplies, af/yr					
	1980	1985	1990	1995	2000	2005	2010	2015	2020	2025	2030	2035
Existing Water Supplies^(a,b)												
USBR CVP Contract (City Contract)	5,676	5,734	4,968	8,387	7,785	8,920	5,304	7,500	7,500	7,500	7,500	7,500
USBR CVP (BCID assignment)	0	0	0	0	0	0	0	2,500	2,500	2,500	2,500	2,500
USBR CVP (WSID assignment)	0	0	0	0	0	0	0	1,250	1,250	1,250	1,250	1,250
Total CVP Deliveries	5,676	5,734	4,968	8,387	7,785	8,920	5,304	11,250	11,250	11,250	11,250	11,250
South County Water Supply Project (pre-1914 rights)	0	0	0	0	0	3,146	10,850	10,000	10,000	10,000	10,000	10,000
Groundwater ^(c)	1,980	2,856	5,838	4,310	6,548	5,826	498	2,500	2,500	2,500	2,500	2,500
Semitropic Water Storage Bank (Permanent Agreement) ^(d)	0	0	0	0	0	0	0	0	0	0	0	0
Total Existing Potable Supplies	7,656	8,590	10,806	12,697	14,333	17,892	16,652	23,750	23,750	23,750	23,750	23,750
Additional Planned Future Water Supplies^(b)												
Additional USBR CVP (WSID Option)								1,250	1,250	1,250	1,250	1,250
Additional USBR CVP (BBID contract)								1,500	3,000	4,500	5,500	5,500
BBID (pre-1914)								1,000	2,000	3,000	3,000	3,000
Additional SCWSP Supplies (pre-1914)								3,000	3,000	3,000	3,000	3,000
Aquifer Storage and Recovery ^(e)								0	0	0	0	0
Recycled Water (non-potable) ^(f)								12,400	14,900	17,500	19,900	22,500
Total Additional Planned Future Potable Supplies								6,750	9,250	11,750	12,750	12,750
Total Potable Supplies	7,656	8,590	10,806	12,697	14,333	17,892	16,652	30,500	33,000	35,500	36,500	36,500
Total Additional Planned Future Non-Potable Supplies								12,400	14,900	17,500	19,900	22,500

(a) Historical supply data based on production data.

(b) Projected additional supplies based on Table 18 Current and Projected Water Supply Allocations – Normal Year, City of Tracy 2010 Urban Water Management Plan, May 2011.

(c) Although the City can sustainably extract up to 9,000 af/yr of groundwater, the City is planning to scale back its groundwater extraction in future years to increase the overall quality of its water supply. The City will continue to rely on groundwater for peaking and drought and emergency supplies, up to 9,000 af/yr, on an as-needed basis.

(d) In normal years, supply from the Semitropic Water Storage Bank is assumed to be 0 af/yr, as this is considered a dry year supply.

(e) In normal years, supply from the ASR Project is assumed to be 0 af/yr, as this is considered a dry year supply.

(f) Table 15, City of Tracy 2010 Urban Water Management Plan, prepared by Erler & Kalinowski, Inc., May 2011.



6.6 Dry Year Water Supply Availability and Reliability

Water Code section 10910 (c)(4) requires that a WSA include a discussion with regard to “whether total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.” Accordingly, this WSA addresses these three hydrologic conditions through the year 2035.

The reliability of each of the City’s existing and additional planned water supplies and their projected availability during normal, single dry, and multiple dry years as described in Section 5 of the City’s 2010 UWMP, is described below and summarized in Table 15.

Table 15. Water Supply Reliability in Normal, Single Dry, Multiple Dry Years			
Supply Source	Anticipated Reliability (% of Entitlement)		
	Normal Years	Single Dry Years	Multiple Dry Years
Existing Water Supplies			
USBR CVP Contract (City Contract) (M&I Reliability)	75%	65%	40%
USBR CVP (BCID assignment) (Ag Reliability)	50%	15%	10%
USBR CVP (WSID assignment) (Ag Reliability)	50%	15%	10%
South County Water Supply Project (pre-1914 rights)	100%	95%	95%
Groundwater ^(a)	100%	100%	100%
Semitropic Water Storage Bank (Permanent Agreement) ^(b)	--	100%	100%
Additional Planned Future Water Supplies			
USBR CVP (WSID Option) (Ag Reliability)	50%	15%	10%
USBR CVP (BBID contract) (Ag Reliability)	50%	15%	10%
BBID (pre-1914 rights)	100%	90%	90%
Additional SCWSP (pre-1914 rights)	100%	95%	95%
Aquifer Storage and Recovery ^(b)	--	100%	100%
Recycled Water	100%	100%	100%
^(a) The City is planning to decrease groundwater use to 2,500 af/yr by the year 2015. However, studies described in this WSA have indicated that up to 9,000 af/yr of groundwater is available to the City to make up for shortfalls in the event of a severe drought or other water shortage. ^(b) Supplies from Semitropic and ASR are assumed to be dry year supplies. As such, during normal years, supplies from these sources are assumed to be 0 af/yr.			



It should be noted that the supply reliabilities included in this Revised Ellis WSA are different than those included in the Original Ellis WSA due to changes in anticipated deliveries of the USBR CVP supplies as a result of Delta pumping restrictions (described in Section 6.1.1.1 of this WSA and in Section 5 of the City's 2010 UWMP).

This Revised Ellis WSA does not include an evaluation of available water supplies under an extreme dry year condition, as such an analysis is not required by Water Code section 10910 (c)(4) for the preparation of WSAs³⁰. The Original Ellis WSA did include an evaluation of available water supplies under an extreme dry year condition to be consistent with the water supply analysis included in the City's 2005 UWMP³¹ (although such an analysis was not required by either Water Code section 10910 (c)(4) for the preparation of WSAs or sections 10610-10656 for the preparation of UWMPs). The Original Ellis WSA indicated that water demands in an extreme dry year would be reduced by 10 percent due to additional mandatory water conservation measures to be implemented by the City in response to the water supply shortage. Such measures would be implemented in accordance with the City's Water Shortage Contingency Plan.

The City's Water Shortage Contingency Plan was established in 1992, consistent with Water Code section 10632, and includes five stages of action to respond to a water shortage with up to a 50 percent reduction in available water supplies. Each stage of action includes specific water consumption reduction measures, water use prohibitions, and penalties for excessive water use. The Water Shortage Contingency Plan also includes a Catastrophic Supply Interruption Plan, prepared in accordance with Water Code section 10632(c), which addresses actions to be taken by the City during and immediately following an emergency. The City's Water Shortage Contingency Plan and Catastrophic Supply Interruption Plan are further described in the City's 2010 UWMP.

6.6.1 Normal Years

Normal or wet water years are those water years that match or exceed median rainfall and runoff levels. The following describes the availability and reliability of the City's existing and additional planned future water supplies under normal year conditions:

- As described in the City's 2005 and 2010 UWMPs, based on USBR's previous modeling, during an average hydrologic year, the City could expect to receive approximately 85 percent of its M&I-reliability water supply and 58 percent of its Ag-reliability water from the USBR's allotment of CVP water via the DMC (plus the small volume of BBID water that is managed through the City's treatment and distribution system on behalf of Patterson Pass Business Park). However, due to recent environmental concerns in the Delta and potential future impacts due to climate change, it has been assumed that these normal year reliabilities will be reduced by about 10 percent, to 75 percent for M&I-reliability supplies and

³⁰ The City's 2010 UWMP also does not include such an evaluation as it is not required by Water Code sections 10610-10656 for the preparation of UWMPs.

³¹ City of Tracy 2005 *Urban Water Management Plan*, prepared by Erler & Kalinowski, Inc., December 2005.



50 percent for Ag-reliability supplies. These assumed reductions in reliability are consistent with reliability reductions estimated by DWR for the State Water Project, which is subject to the same Delta environmental and climate change issues.

- During a normal water year, the City expects to receive 100 percent of its SCWSP water supply allocation, or 10,000 af/yr.
- Pursuant to the Groundwater Management Policy, the City can extract up to 9,000 af/yr of local groundwater. Because of the high TDS and hardness of the City's groundwater, the City hopes to reduce its dependency on groundwater in the future. As additional higher quality water supplies come on line, the City estimates that it may be possible to reduce the quantity of groundwater used during a typical normal or wet year. This reduction, however, is highly dependent on future water supplies and demands and should be viewed as a goal, and not a firm projection. In the event that additional supplies are needed, the City may utilize up 9,000 af of groundwater per year.
- In the future, up to 3,000 af/yr of pre-1914 appropriative water rights water is expected to be available directly or via exchange from BBID. After 2015, the City anticipates being able to receive 100 percent of this supply during normal and wet years.
- In the future, up to approximately 11,000 af/yr of Ag-reliability water from BBID DMC/CVP contract is expected to be available to the City. Therefore, in future normal water years, as much as 5,500 af/yr (50% of 11,000 af) will be available.
- In the future, the City expects to receive 100 percent of a future SCWSP water supply allocation in normal years, or 3,000 af/yr.
- By 2015, 1,000 af/yr of banked water is assumed to be available through the City's ASR program and approximately 1,750 af/yr of banked water is assumed to be available through the City's participation in the Semitropic Water Storage Bank. However, these supplies are considered dry year supplies, and are assumed to be zero in normal years.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during normal and wet years is shown in Table 16. Figure 8 shows the City's projected future supply versus demand in normal years.

6.6.2 Single Dry Years

During a single dry year, or when the DMC/CVP flows must be reduced due to hydrologic and/or environmental impacts, all of the City's existing surface water allotments are subject to some level of reduction. The actual reductions will vary with the severity of the regional water supply shortage and climatic conditions, and the consideration of water and contract rights. The following describes the availability and reliability of the City's existing and additional planned future water supplies under single dry year conditions:

Table 16. Projected Existing and Additional Planned Future Water Supplies Available in Normal Years

Supply	Anticipated Reliability (% of Entitlement) Normal Years	Projected Future Available Supply, af/yr				
		2015	2020	2025	2030	2035
Existing Water Supplies						
	USBR CVP Contract (City Contract)	7,500	7,500	7,500	7,500	7,500
	USBR CVP (BCID assignment)	2,500	2,500	2,500	2,500	2,500
	USBR CVP (WSID assignment)	1,250	1,250	1,250	1,250	1,250
Total CVP Deliveries		11,250	11,250	11,250	11,250	11,250
South County Water Supply Project (pre-1914 rights) Groundwater ^(a)						
	100%	10,000	10,000	10,000	10,000	10,000
	100%	2,500	2,500	2,500	2,500	2,500
	--	0	0	0	0	0
Semitropic Water Storage Bank (Permanent Agreement) ^(b)						
Additional Planned Future Water Supplies						
	USBR CVP (WSID Option)	1,250	1,250	1,250	1,250	1,250
	USBR CVP (BBID contract)	1,500	3,000	4,500	5,500	5,500
	BBID (pre-1914 rights)	1,000	2,000	3,000	3,000	3,000
	Additional SCWSP (pre-1914 rights)	3,000	3,000	3,000	3,000	3,000
	Aquifer Storage and Recovery ^(b)	0	0	0	0	0
	Recycled Water (non-potable) ^(c)	12,400	14,900	17,500	19,900	22,500
Total Projected Potable Water Supply		30,500	33,000	35,500	36,500	36,500
% Cutback from Normal Year ^(d)		--	--	--	--	--
Total Projected Recycled Water Supply ^(c)		12,400	14,900	17,500	19,900	22,500
% Cutback from Normal Year ^(d)		--	--	--	--	--

^(a) The City is planning to decrease groundwater use to 2,500 af/yr by the year 2015. However, studies described in this WSA have indicated that up to 9,000 af/yr of groundwater is available to the City to make up for shortfalls in the event of a severe drought or other water shortage.

^(b) Assumed to be zero in normal years, as Semitropic and ASR are considered to be dry year supplies.

^(c) Table 15, City of Tracy 2010 Urban Water Management Plan, prepared by Erler & Kalinowski, Inc., May 2011.

^(d) Not applicable as Normal Year supplies are being shown.



- The City Contract for an annual entitlement of 10,000 ac-ft of USBR water from the DMC/CVP is subject to M&I Reliability. Based on the historical record, it is assumed that during a single-dry year, the City's annual allocation will be 65 percent of its entitlement, or 6,500 af/yr.
- The City currently holds the assignment contracts (BCID and WSID) for an annual entitlement of up to 7,500 af/yr, and plans to purchase an additional 2,500 af/yr of entitlement from WSID, for a total of 10,000 af/yr of entitlements. These contracts pertain to USBR water from the DMC/CVP and are subject to Ag-reliability. Based on the historical record and PROSIM modeling, it is assumed that during a single-dry year, the City's allocation will be 15 percent of its entitlement, 1,125 af/yr (based on the existing 7,500 af/yr of entitlements) and 1,500 af/yr (based on the total 10,000 af/yr of existing and future entitlements).
- During a single-dry year, it is assumed that the City will receive 95 percent of its SCWSP water supply allocation, or 9,500 af/yr.
- Pursuant to the Groundwater Management Policy, the City can extract up to 9,000 af/yr of local groundwater resources. However, as described above, the City may reduce its future groundwater use to 2,500 af/yr by 2015 (based on normal year supply conditions). In the event that groundwater is needed to supplement surface water supplies during a single-dry year, however, the City does intend to call on these supplies up to the maximum sustainable yield of 9,000 af/yr.
- In the future, up to 3,000 af/yr of pre-1914 appropriative water rights water is expected to be available either directly or via exchange from BBID. In single-dry water years, it is assumed that as much as 2,700 af/yr, or 90 percent of the contractual allocation, will be available.
- In the future, up to 11,000 af/yr of Ag-reliability water from the BBID DMC/CVP contract is expected to be available to the City. In future single-dry water years, it is assumed that as much as 1,650 af/yr, or 15 percent of the contractual entitlement, of BBID water will be available.
- In the future, the City expects to receive 95 percent of a future SCWSP water supply allocation in single dry years, or 2,850 af/yr.
- By 2015, 1,000 af/yr of banked water is assumed to be available through the City's ASR program and approximately 1,750 af/yr of banked water is assumed to be available through the City's participation in the Semitropic Water Storage Bank.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during a single dry year is shown in Table 17. Figure 9 shows the City's projected future supply versus demand in single dry years.

Table 17. Projected Existing and Additional Planned Future Water Supplies Available in Single Dry Years						
Supply	Anticipated Reliability (% of Entitlement)	Projected Future Available Supply, af/yr				
		2015	2020	2025	2030	2035
Existing Water Supplies						
	65%	6,500	6,500	6,500	6,500	6,500
	15%	750	750	750	750	750
	15%	375	375	375	375	375
Total CVP Deliveries		7,625	7,625	7,625	7,625	7,625
South County Water Supply Project (pre-1914 rights) Groundwater ^(a)	95%	9,500	9,500	9,500	9,500	9,500
	100%	9,000	9,000	9,000	9,000	9,000
	100%	1,750	3,500	3,500	3,500	3,500
Semitropic Water Storage Bank (Permanent Agreement)						
Additional Planned Future Water Supplies	15%	375	375	375	375	375
	15%	450	900	1,350	1,650	1,650
	90%	900	1,800	2,700	2,700	2,700
	95%	2,850	2,850	2,850	2,850	2,850
	100%	1,000	2,000	3,000	3,000	3,000
	100%	12,400	14,900	17,500	19,900	22,500
Total Projected Potable Water Supply		33,450	37,550	39,900	40,200	40,200
% Cutback from Normal Year ^(c)		0%	0%	0%	0%	0%
Total Projected Recycled Water Supply ^(b)		12,400	14,900	17,500	19,900	22,500
% Cutback from Normal Year ^(c)		0%	0%	0%	0%	0%

(a) The City is planning to decrease groundwater use to 2,500 af/yr by the year 2015. However, studies described in this WSA have indicated that up to 9,000 af/yr of groundwater is available to the City to make up for shortfalls in the event of a severe drought or other water shortage.

(b) Table 15, City of Tracy 2010 Urban Water Management Plan, prepared by Erler & Kalinowski, Inc., May 2011.

(c) Percent cutback from normal year for potable water supplies is zero due to availability of Semitropic in single dry years. No cutback is anticipated for recycled water supplies.



6.6.3 Multiple Dry Years

If there are multiple dry years, the City's surface water allotments, especially from the DMC/CVP, may be significantly reduced. Thus, in the event of drought, the City will have to depend more heavily on groundwater, SCWSP supplies and other drought contingency supplies (previously banked water). As an example, in 1991, due to prolonged drought, the USBR reduced the City's DMC/CVP surface water allotment by 50 percent, such that the City's 1991 allocation was reduced to 5,000 acre-feet. As a result, the City implemented a water conservation program consistent with its Water Shortage Contingency Plan and relied on its groundwater supply to satisfy a larger portion of the City's water demand. The City now has a broader portfolio of water supplies. However, as described above, CVP supply reliabilities may be reduced even further due to on-going Delta environmental issues and future climate change. The following describes the availability and reliability of the City's existing and additional planned future water supplies under multiple dry year conditions:

- The City Contract for an annual entitlement of 10,000 af/yr of USBR water from the DMC/CVP is subject to M&I Reliability. Based on the historical record, it is assumed that during a multiple dry year period, the City's annual allocation will be 40 percent of its entitlement, or 4,000 af/yr.
- The City currently holds the assignment contracts (BCID and WSID) for an annual entitlement of up to 7,500 af/yr, and plans to purchase an additional 2,500 af/yr of entitlement from WSID, for a total of 10,000 af/yr of entitlements. These contracts pertain to USBR water from the DMC/CVP and are subject to Ag-reliability. Based on the historical record and PROSIM modeling, it is assumed that during multiple dry years, the City's allocation will be 10 percent of its entitlement, 750 af/yr (based on the existing 7,500 af/yr of entitlements) and 1,000 af/yr (based on the total 10,000 af/yr of existing and future entitlements).
- During a multiple dry year period, the City expects to receive 95 percent of its SCWSP water supply allocation, or 9,500 af/yr.
- Pursuant to the Groundwater Management Policy, the City can extract up to 9,000 af/yr of local groundwater resources. However, as described above, the City may reduce its future groundwater use to 2,500 af/yr by 2015 (based on normal year supply conditions). In the event that groundwater is needed to supplement surface water supplies during a multiple dry year period, however, the City does intend to call on these supplies up to the maximum sustainable yield of 9,000 af/yr.
- In the future, up to 3,000 af/yr of pre-1914 appropriative water rights water is expected to be available either directly or via exchange from BBID. In multiple dry water years, it is assumed that as much as 2,700 af/yr of BBID Pre-1914 water right water, or 90 percent of the contractual allocation, will be available.
- In the future, up to 11,000 af/yr of Ag-reliability water from BBID DMC/CVP contract is expected to be available to the City. In future multiple dry water years, it is assumed that as much as 1,100 af/yr of BBID water, or 10 percent of the contractual entitlement, will be available.



- In the future, the City expects to receive 95 percent of a future SCWSP water supply allocation in single dry years, or 2,850 af/yr.
- By 2015, 1,000 af/yr of banked water is assumed to be available through the City's ASR program and approximately 1,750 af/yr of banked water is assumed to be available through the City's participation in the Semitropic Water Storage Bank.

The reliability of each of the City's existing and additional planned future water supplies and their projected availability during a multiple dry year period is shown in Table 18. Figure 10 shows the City's projected future supply versus demand in multiple dry years.

Table 18. Projected Existing and Additional Planned Future Water Supplies Available in Multiple Dry Years						
Supply	Anticipated Reliability (% of Entitlement)	Projected Future Available Supply, af/yr				
		2015	2020	2025	2030	2035
Existing Water Supplies	Multiple Dry Years					
	40%	4,000	4,000	4,000	4,000	4,000
	10%	500	500	500	500	500
	10%	250	250	250	250	250
Total CVP Deliveries		4,750	4,750	4,750	4,750	4,750
South County Water Supply Project (pre-1914 rights) Groundwater ^(a)	95%	9,500	9,500	9,500	9,500	9,500
	100%	9,000	9,000	9,000	9,000	9,000
	100%	1,750	3,500	3,500	3,500	3,500
Semitropic Water Storage Bank (Permanent Agreement)						
Additional Planned Future Water Supplies	10%	250	250	250	250	250
	10%	300	600	900	1,100	1,100
	90%	900	1,800	2,700	2,700	2,700
	95%	2,850	2,850	2,850	2,850	2,850
	100%	1,000	2,000	3,000	3,000	3,000
	100%	12,400	14,900	17,500	19,900	22,500
Total Projected Potable Water Supply		30,300	34,250	36,450	36,650	36,650
% Cutback from Normal Year ^(c)		0.7%	0%	0%	0%	0%
Total Projected Recycled Water Supply ^(b)		12,400	14,900	17,500	19,900	22,500
% Cutback from Normal Year ^(c)		0%	0%	0%	0%	0%

^(a) The City is planning to decrease groundwater use to 2,500 af/yr by the year 2015. However, studies described in this WSA have indicated that up to 9,000 af/yr of groundwater is available to the City to make up for shortfalls in the event of a severe drought or other water shortage.

^(b) Table 15, City of Tracy 2010 Urban Water Management Plan, prepared by Erler & Kalinowski, Inc., May 2011.

^(c) Percent cutback from normal year for potable water supplies is essentially zero due to availability of Semitropic in multiple dry years. No cutback is anticipated for recycled water supplies.



7.0 DETERMINATION OF WATER SUPPLY SUFFICIENCY

10910(c)(4) If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

7.1 Findings

Pursuant to Water Code section 10910(c)(4), and based on the technical analyses described in this Water Supply Assessment, the City finds that the total projected water supplies determined to be available for the Proposed Project during Normal, Single Dry, and Multiple Dry water years during a 20-year projection will meet the projected water demand associated with the Proposed Project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

7.1.1 Existing Conditions with Development Projects with Approved Water Supply and the Proposed Project

Table 19 summarizes the projected availability of the City's existing and planned future additional water supplies and the City's projected water demands in normal, single dry and multiple dry years based on existing demands, the Proposed Project and Other Development Projects with Approved Water Supply described in Table 8 (see also Figure 11). As shown, for all three hydrologic conditions required to be addressed by Water Code section 10910 *et seq.*, the City's existing and planned future additional sources of water supply are more than sufficient to meet existing demand, the projected future demand from build-out of the Proposed Project and the projected future demand from build-out of Other Development Projects with Approved Water Supply.

Table 19 shows that in Normal Years, the City's 23,750 AFY of existing water supplies plus the planned future additional supply of 1,250 AFY from the WSID Option agreement would leave a surplus of 934 AFY after meeting projected total demand of 24,066 AFY (potable and non-potable combined). Adding the projected future availability of 9,900 AFY of recycled water would increase the projected Normal Year surplus to 10,834 AFY.

Table 19 shows that in Single Dry Years, the City's 27,875 AFY of existing water supplies would leave a surplus of 3,809 AFY after meeting projected total demand of 24,066 AFY (potable and non-potable combined). Adding the projected future availability of 9,900 AFY of recycled water would increase the projected Single Dry Year surplus to 13,709 AFY.

Table 19 shows that in Multiple Dry Years, the City's 25,000 AFY of existing water supplies would leave a surplus of 934 AFY after meeting projected total demand of 24,066 AFY (potable and non-potable combined). Adding the projected future availability of 9,900 AFY of recycled water would increase the projected Multiple Dry Year surplus to 10,834 AFY.

South County Water Supply Project (pre-1914 rights)	10,000	9,500	9,500
Groundwater ^(a)	2,500	9,000	9,000
Semitropic Water Storage Bank (Permanent Agreement) ^(b)	--	1,750	1,750
<i>Subtotal Existing Potable Water Supplies</i>	<i>23,750</i>	<i>27,875</i>	<i>25,000</i>
Additional Planned Future Water Supplies			
SBR CVP (WSID Option) ^(c)	1,250	375	250
SBR CVP (BBID contract)	0	0	0
BBID (pre-1914 rights)	0	0	0
Additional SCWSP (pre-1914 rights)	0	0	0
Aquifer Storage and Recovery ^(b)	--	0	0
Recycled Water ^(d)	9,900	9,900	9,900
<i>Subtotal Additional Planned Future Potable Water Supplies</i>	<i>1,250</i>	<i>375</i>	<i>250</i>
<i>Subtotal Additional Planned Future Non-Potable Water Supplies</i>	<i>9,900</i>	<i>9,900</i>	<i>9,900</i>
Total Potable Water Supply	25,000	28,250	25,250
Existing Potable Water Demand (2007)	19,176	19,176	19,176
Additional Potable Water Demand for Development Projects with Approved Water Supply including the Proposed Project (see Table 8)	4,150	4,150	4,150
Total Potable Water Demand	23,326	23,326	23,326
Potable Water Supply Shortfall	0	0	0
Total Recycled Water Supply ^(d)	9,900	9,900	9,900
Total Recycled Water Demand ^(d)	740	740	740
Recycled Water Supply Shortfall	0	0	0

The City is planning to decrease groundwater use to 2,500 af/yr by the year 2015. However, studies described in this WSA have indicated that up to 9,000 af/yr of groundwater is available to the City to make up for shortfalls in the event of a severe drought or other water shortage. Therefore, groundwater pumpage during a dry year conditions assumed to be up to 9,000 af/yr per average annual operational yield of 9,000 af/yr.

The Semitropic Water Storage Bank and Aquifer Storage and Recovery are considered to be dry year supplies and are therefore considered to be zero in normal years. This option will be exercised by the City by early 2014.

Recycled water supply based on 2010 wastewater flows. Recycled water supplies from the City's WWTP may not be available to serve the initial development phases of the proposed Project due to the timing of construction of the required recycled water infrastructure. Therefore, in the interim period before recycled water becomes available, potable water supplies (or possibly untreated surface water supplies from the local irrigation districts, BBID) will be used to meet the irrigation demands for the Proposed Project. Recycled water demand = Gateway Phase 1 (84 af/yr) + Holly Sugar Sports Park (485 af/yr) + Ellis Specific Plan (116 af/yr) = 685 af/yr + 7.5% UAFW = 740 af/yr. As shown, there are adequate potable water supplies to meet the total potable water demand plus the total recycled water demand under all hydrologic conditions (for example, for a normal year, the total available supply is 25,550 af/yr, which is greater than the City's total potable water demand (23,326 af/yr) + the total recycled water demand (740 af/yr)).



7.1.1.1 Critically Dry Year Scenario

Although Water Code section 10910 *et seq.* does not define or require assessment of a “critically dry year” scenario, the water supply and demand projections that Table 19 summarizes for Multiple Dry Years encompass a critically dry year scenario. Of all the City’s existing and planned future additional water supplies, it is the CVP water supplies that are projected to be most reduced during multiple dry years. Table 18 shows the City’s CVP Contract supply with M&I reliability is projected to provide just 40 percent of the contract amount in Multiple Dry Years, while the City’s CVP Contract supplies with agricultural reliability are projected to provide just 10 percent of the contract amounts in Multiple Dry years. These projections are derived from USBR’s CALSIM II model, which projects annual delivery quantities from the CVP taking into consideration historical hydrologic conditions, environmental restrictions and regulatory constraints over a 71-year period (see City of Tracy 2010 UWMP, Section 5 at pp. 41-45). The Multiple Dry Year period is considered to be the lowest average runoff recorded for a consecutive multiple year period (three years or more) for a watershed since 1903. In the Central Valley Basin, 1928-1934 and 1987-1992 were the two multiple dry year periods of lowest average runoff during the 20th Century. To be conservative, the City reduced the projected availability of its CVP water supplies below the CALSIM II model projection for multiple dry years. For example, the CALSIM II model projects 50 percent availability for the City’s CVP Contract supply with M&I reliability, but the City is assuming just 40 percent availability. This results in an overall projected water supply availability for the Multiple Dry Years scenario that the City projects to be lower than a “critically dry year” scenario. Accordingly, the City’s projection that water supplies will be more than sufficient to meet demand during a Multiple Dry Years scenario also applies to a “critically dry year” scenario.

7.1.1.2 Water Conservation

The water supply sufficiency conclusions for the Single Dry Year and Multiple Dry Years scenarios are conservative with respect to the demand side of these water-balance analyses. As explained in Section 5.5, for purposes of this WSA, the City assumes that water demand in Single Dry Years and in Multiple Dry Years will remain the same as demand in Normal Years. However, water conservation measures under the City’s adopted Water Conservation Plan and adopted Water Shortage Contingency Plan are anticipated to reduce water demand during Single Dry Years and in Multiple Dry Years (see City of Tracy 2010 UWMP, Section 5.5 at pp. 47-53 [describing Water Shortage Contingency Plan contents]; City of Tracy 2010 UWMP, Section 6 at pp. 55-61 [describing Water Conservation Plan]). For example, during the recent multiple year dry period from 2007-2009, the City’s implementation of conservation measures reduced existing water demand by up to approximately 13 percent (based on City water production for 2007-2009). This was in part due to the City’s implementation of water conservation measures. By assuming that water demand in Single Dry Years and Multiple Dry Years will not be reduced as a result of conservation measures, the City’s water-balance analyses likely overstate demand and understate the projected availability of surplus water supplies, making the WSA’s ultimate water supply sufficiency determination conservative.



7.1.2 2035 Conditions

Table 20 summarizes the projected availability of the City's existing and planned future additional water supplies and the City's projected water demands in normal, single dry and multiple dry years based on existing demands, the Proposed Project, Other Development Projects with Approved Water Supply and potential future development described in Table 8 (see also Figure 12). As shown, for all three hydrologic conditions required to be addressed by Water Code section 10910 *et seq.*, the City's existing and planned future additional sources of water supply are more than sufficient to meet existing demand plus the projected year 2035 demand from build-out of the Proposed Project, Other Development Projects with Approved Water Supply and additional potential future development (identified by Table 8 as "Future Service Areas").

Table 20 shows that in Normal Years, the City's 59,000 AFY of existing water supplies and planned future additional supplies would leave a surplus of 19,235 AFY after meeting projected total demand of 39,765 AFY (potable and non-potable combined).

Table 20 shows that in Single Dry Years, the City's 62,700 AFY of existing water supplies and planned future additional supplies would leave a surplus of 22,935 AFY after meeting projected total demand of 39,765 AFY (potable and non-potable combined).

Table 20 shows that in Multiple Dry Years, the City's 59,150 AFY of existing water supplies would leave a surplus of 19,385 AFY after meeting projected total demand of 39,765 AFY (potable and non-potable combined).

South County Water Supply Project (pre-1914 rights)	10,000	9,500	9,500
Groundwater ^(a)	2,500	9,000	9,000
Semitropic Water Storage Bank (Permanent Agreement) ^(b)	--	3,500	3,500
<i>Subtotal Existing Potable Water Supplies</i>	<i>23,750</i>	<i>29,625</i>	<i>26,750</i>
Additional Planned Future Water Supplies			
SBR CVP (WSID Option)	1,250	375	250
SBR CVP (BBID contract)	5,500	1,650	1,100
BID (pre-1914 rights)	3,000	2,700	2,700
Additional SCWSP (pre-1914)	3,000	2,850	2,850
Aquifer Storage and Recovery ^(b)	--	3,000	3,000
Recycled Water ^(c)	22,500	22,500	22,500
<i>Subtotal Additional Planned Future Potable Water Supplies</i>	<i>12,750</i>	<i>10,575</i>	<i>9,900</i>
<i>Subtotal Additional Planned Future Non-Potable Water Supplies</i>	<i>22,500</i>	<i>22,500</i>	<i>22,500</i>
Total Potable Water Supply	36,500	40,200	36,650
Projected 2035 Potable Water Demand ^(d)	33,600	33,600	33,600
Potable Water Supply Shortfall	0	0	0
Total Recycled Water Supply ^(c)	22,500	22,500	22,500
Projected 2035 Recycled Water Demand ^(c)	6,165	6,165	6,165
Recycled Water Supply Shortfall	0	0	0

The City is planning to decrease groundwater use to 2,500 af/yr by the year 2015 (based on normal year supply conditions). However, studies described in this WSA have indicated that up to 9,000 af/yr of groundwater is available to the City to make up for shortfalls in the event of a severe drought or other water shortage.

Supply from Semitropic Water Storage Bank and Aquifer Storage and Recovery (ASR) assumed to be zero during normal years.

Tables 15 and 17, City of Tracy 2010 Urban Water Management Plan, May 2011. Actual recycled water demands may be higher based on actual recycled water use within future projects. Recycled water demand shown is 6,040 af/yr (per Table 17 of 2010 UWMP) + additional demand for Ellis (116 af/yr) + 7.5% UAFW = 6,165 af/yr.

Projected 2035 water demand includes projected water demand for the Proposed Project.



7.1.2.1 Critically Dry Year Scenario

Although Water Code section 10910 *et seq.* does not define or require assessment of a “critically dry year” scenario, the water supply and demand projections that Table 20 summarizes for Multiple Dry Years encompass a critically dry year scenario. Of all the City’s existing and planned future additional water supplies, it is the CVP water supplies that are projected to be most reduced during multiple dry years. Table 18 shows the City’s CVP Contract supply with M&I reliability is projected to provide just 40 percent of the contract amount in Multiple Dry Years, while the City’s CVP Contract supplies with agricultural reliability are projected to provide just 10 percent of the contract amounts in Multiple Dry years. These projections are derived from USBR’s CALSIM II model, which projects annual delivery quantities from the CVP taking into consideration historical hydrologic conditions, environmental restrictions and regulatory constraints over a 71-year period (see City of Tracy 2010 UWMP, Section 5 at pp. 41-45). The Multiple Dry Year period is considered to be the lowest average runoff recorded for a consecutive multiple year period (three years or more) for a watershed since 1903. In the Central Valley Basin, 1928-1934 and 1987-1992 were the two multiple dry year periods of lowest average runoff during the 20th Century. To be conservative, the City reduced the projected availability of its CVP water supplies below the CALSIM II model projection for multiple dry years. For example, the CALSIM II model projects 50 percent availability for the City’s CVP Contract supply with M&I reliability, but the City is assuming just 40 percent availability. This results in an overall projected water supply availability for the Multiple Dry Years scenario that the City projects to be lower than a “critically dry year” scenario. Accordingly, the City’s projection that water supplies will be more than sufficient to meet demand during a Multiple Dry Years scenario also applies to a “critically dry year” scenario.

7.1.2.2 Water Conservation

The water supply sufficiency conclusions for the Single Dry Year and Multiple Dry Years scenarios are conservative with respect to the demand side of these water-balance analyses. As explained in Section 5.5, for purposes of this WSA, the City assumes that water demand in Single Dry Years and in Multiple Dry Years will remain the same as demand in Normal Years. However, water conservation measures under the City’s adopted Water Conservation Plan and adopted Water Shortage Contingency Plan are anticipated to reduce water demand during Single Dry Years and in Multiple Dry Years (see City of Tracy 2010 UWMP, Section 5.5 at pp. 47-53 [describing Water Shortage Contingency Plan contents]; City of Tracy 2010 UWMP, Section 6 at pp. 55-61 [describing Water Conservation Plan]). For example, during the recent multiple year dry period from 2007-2009, the City’s implementation of conservation measures reduced existing water demand by up to approximately 13 percent (based on City water production for 2007-2009). This was in part due to the City’s implementation of water conservation measures. By assuming that water demand in Single Dry Years and Multiple Dry Years will not be reduced as a result of conservation measures, the City’s water-balance analyses likely overstate demand and understate the projected availability of surplus water supplies, making the WSA’s ultimate water supply sufficiency determination conservative.



7.2 Compliance with Court Decision

The City previously approved a Water Supply Assessment for the Ellis Project dated March 2008. In addition to analyzing water supply issues for Normal, Single Dry, and Multiple Dry years, the March 2008 WSA also analyzed a fourth scenario – the “extreme dry year.” As previously explained, such an analysis is not required to be included in WSAs under Water Code section 10910(c)(4) or otherwise, and is thus not included in this WSA. Further, because the City’s 2010 UWMP (unlike the prior 2005 UWMP) does not include an “extreme dry year” scenario, it would not be practical to try to include such a scenario in this WSA.

However, it should be noted that, in setting aside the City’s prior approval of the 2008 WSA, the Superior Court based its October 31, 2011 Decision in part on flaws which it found existed in the 2008 WSA’s analysis of the “extreme dry year” scenario, and specifically of the assumption the 2008 WSA made that water demand during an “extreme dry year” would be reduced by 10 percent as a result of water conservation measures. Specifically, the Decision found as follows:

“Table 21 of the WSA indicated that in an extreme drought year demand is 24,989 acre feet per year with a supply of 24,308 acre feet per year for a shortage of 681 acre feet per year. The City reduces this demand by unspecified ‘mandatory conservation measures’. TRAQC argues that this is not an adequate supply, but an unsupported assertion that demand will be less by simply providing less water and rationing. The City cannot avoid making a finding that the Water Supply would not be sufficient in an extreme drought year by referring to some unspecified reduction in demand due to unspecified conservation measures. The finding that water supply is adequate is not supported by substantial evidence.”

Table 21 of the 2008 WSA in fact determined that, as a result of water conservation measures, water demand during an extreme drought year would be reduced by 10 percent, from 24,989 af/yr to 22,490 af/yr. It also concluded that water supply during an “extreme dry year” would be slightly reduced (about 3.6 percent) from a “multiple dry year” – from 25,208 af/yr to 24,308 af/yr.

Table 19 of the current WSA is an updated version of Table 21 of the 2008 WSA. The figures in Table 19 represent current, up-to-date estimates of available water supplies to meet current demand plus future demand from future development with approved water supplies, plus full development of the Ellis Specific Plan. Table 19 also includes updated estimates for future water demand (as noted in Section 2.3.1, current estimates for future water demand are based upon water use factors that take into account reduced water use resulting from new building code requirements, improved water use efficiency, and improved water conservation measures) and use of these figures result in estimates for future water demand that are generally a bit smaller than what was estimated in the 2008 WSA based upon older data. (Table 19 is also different from Table 21 insofar as it separates out demand for recycled water from demand for potable water.)

As also explained earlier, Table 19 demonstrates that, during Multiple Dry years, potable water supply would be 25,250 af/yr, whereas total potable water demand would be 23,326 af/yr. Even if, during an “extreme dry year,” water supply were reduced by an additional 3.6 percent -- to



24,341 af/yr, that water supply would be sufficient to serve the demand of 23,326 af/yr, without any assumptions about further reduction in demand due to implementation of mandatory conservation measures. Indeed, as explained above, the WSA is very conservative in its estimate of future water demand, insofar as it does not assume any reduction in demand resulting from additional conservation measures imposed under the City's adopted Water Conservation Plan and adopted Water Shortage Contingency Plan. This WSA thus cures and avoids the defects which the Superior Court found to exist in the 2008 WSA with respect to its analysis of water supply and demand during dry years.

The Statement of Decision dated October 31, 2011 regarding the petition against the Original Ellis Development Agreement and Original Ellis WSA, indicated that "not all projects were included in the [Original Ellis] WSA" and specifically referred to 206 Residential Growth Allotments (RGAs) that were projected for the downtown and not included in the Original Ellis WSA. It should be noted that the Original Ellis WSA preceded the development of the Downtown Specific Plan, and the adoption of the Downtown Specific Plan WSA in April 2009. Therefore, the RGAs associated with the Downtown Specific Plan were not included in the Original Ellis WSA. However, the water demand associated with the Downtown Specific Plan (185 af/yr) is included in the City's 2010 UWMP (adopted by the Tracy City Council in May 2011) as one of the Development Projects with Approved Water Supply (see Table 8), and is therefore included in this Revised Ellis WSA. This WSA thus cures and avoids the defects which the Superior Court found to exist in the 2008 WSA with respect to the exclusion of the downtown RGAs.



8.0 WATER SUPPLY ASSESSMENT APPROVAL PROCESS

10910 (g)(1) Subject to paragraph (2), the governing body of each public water system shall submit the assessment to the city or county not later than 90 days from the date on which the request was received. The governing body of each public water system, or the city or county if either is required to comply with this act pursuant to subdivision (b), shall approve the assessment prepared pursuant to this section at a regular or special meeting.

10911 (b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

The Tracy City Council must approve this Revised Ellis WSA at a regular or special meeting. Furthermore, the City must include this Revised Ellis WSA in the Draft Environmental Impact Report (EIR) being prepared for the Proposed Project.

The Proposed Project, with its 2,250 proposed residential dwelling units, is also subject to the requirements of SB 221 (Government Code section 66473.7). SB 221 applies to residential development projects of more than 500 dwelling units and requires that the water supplier (the City) provide a written verification that the water supply for the Proposed Project is sufficient. Such a written verification must be provided before a final subdivision map for the Proposed Project may be approved.



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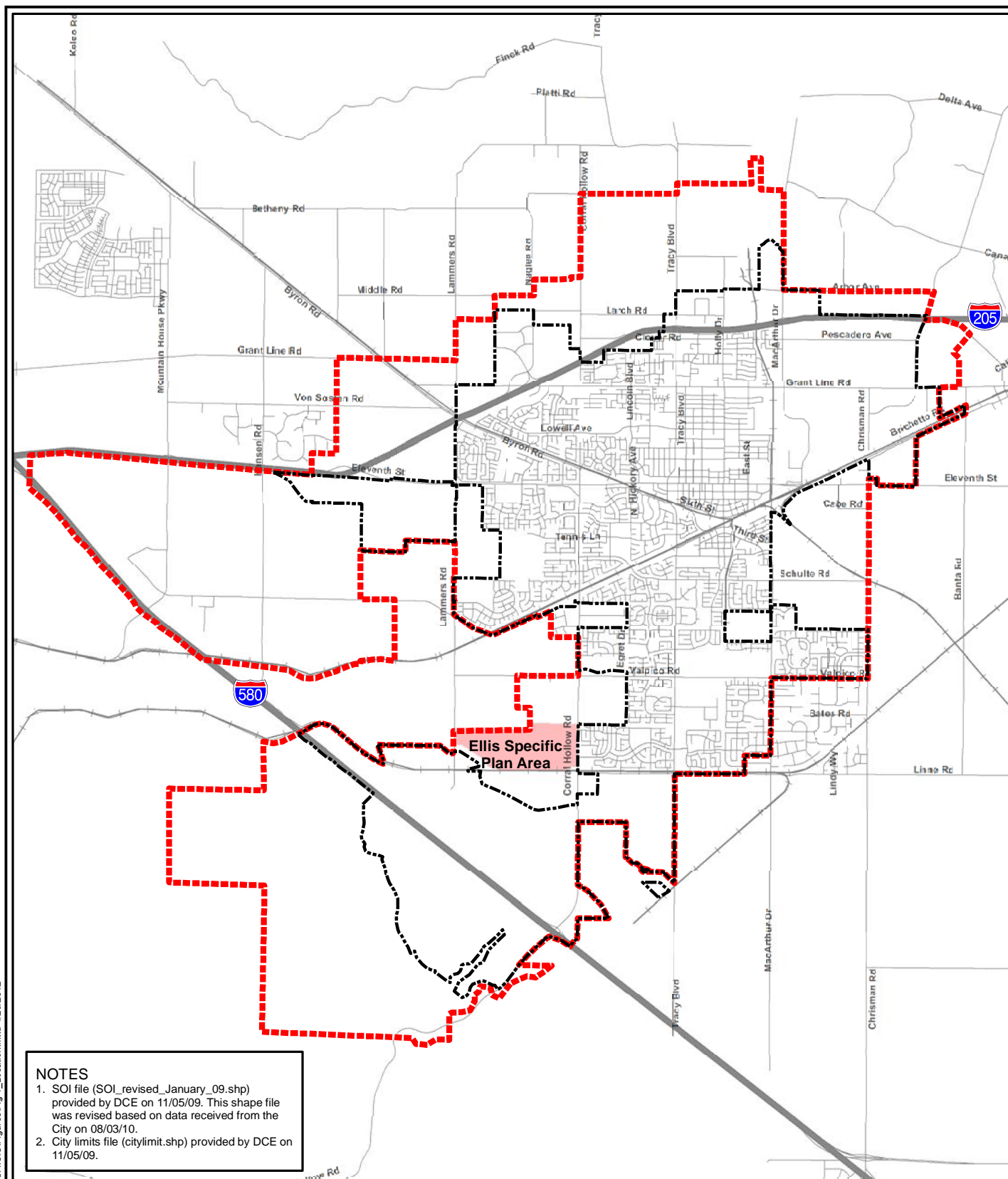
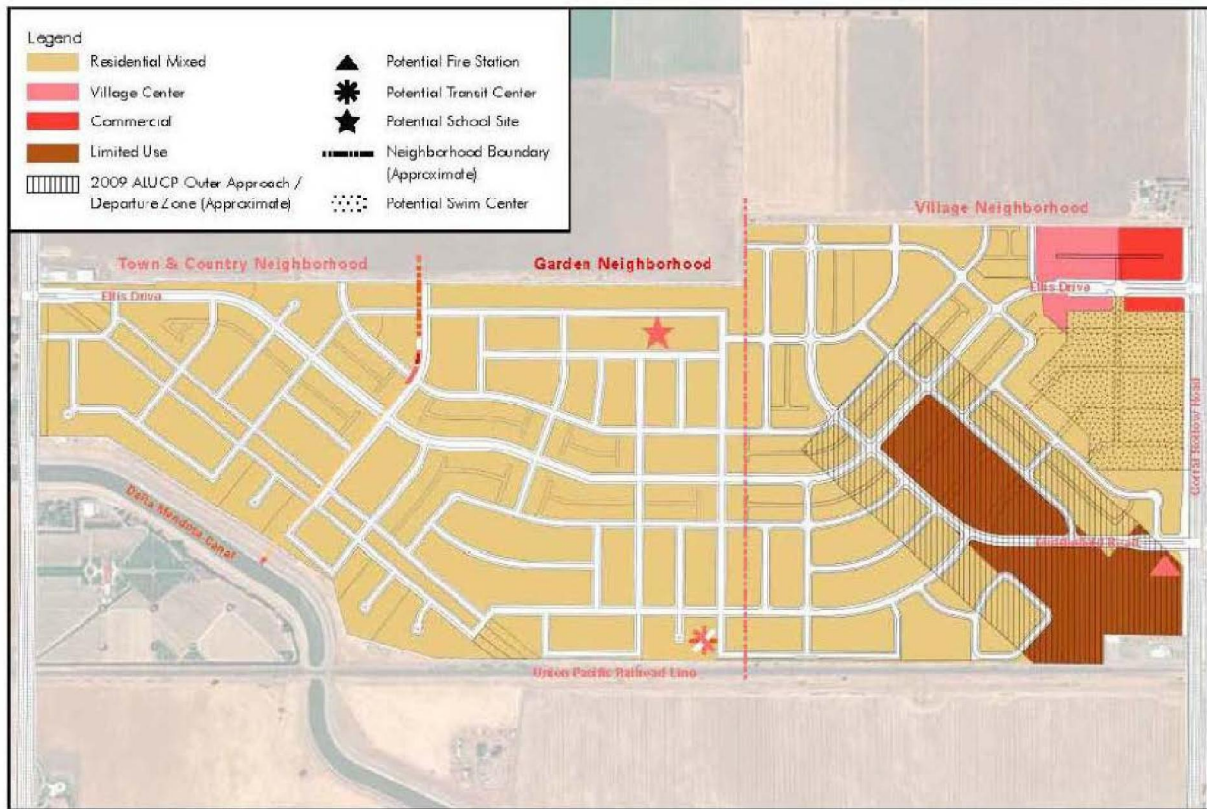


FIGURE 1

City of Tracy
Revised Water Supply Assessment
for the Ellis Specific Plan

PROJECT LOCATION



NOTES

1. Source: Surland Companies, July 2012

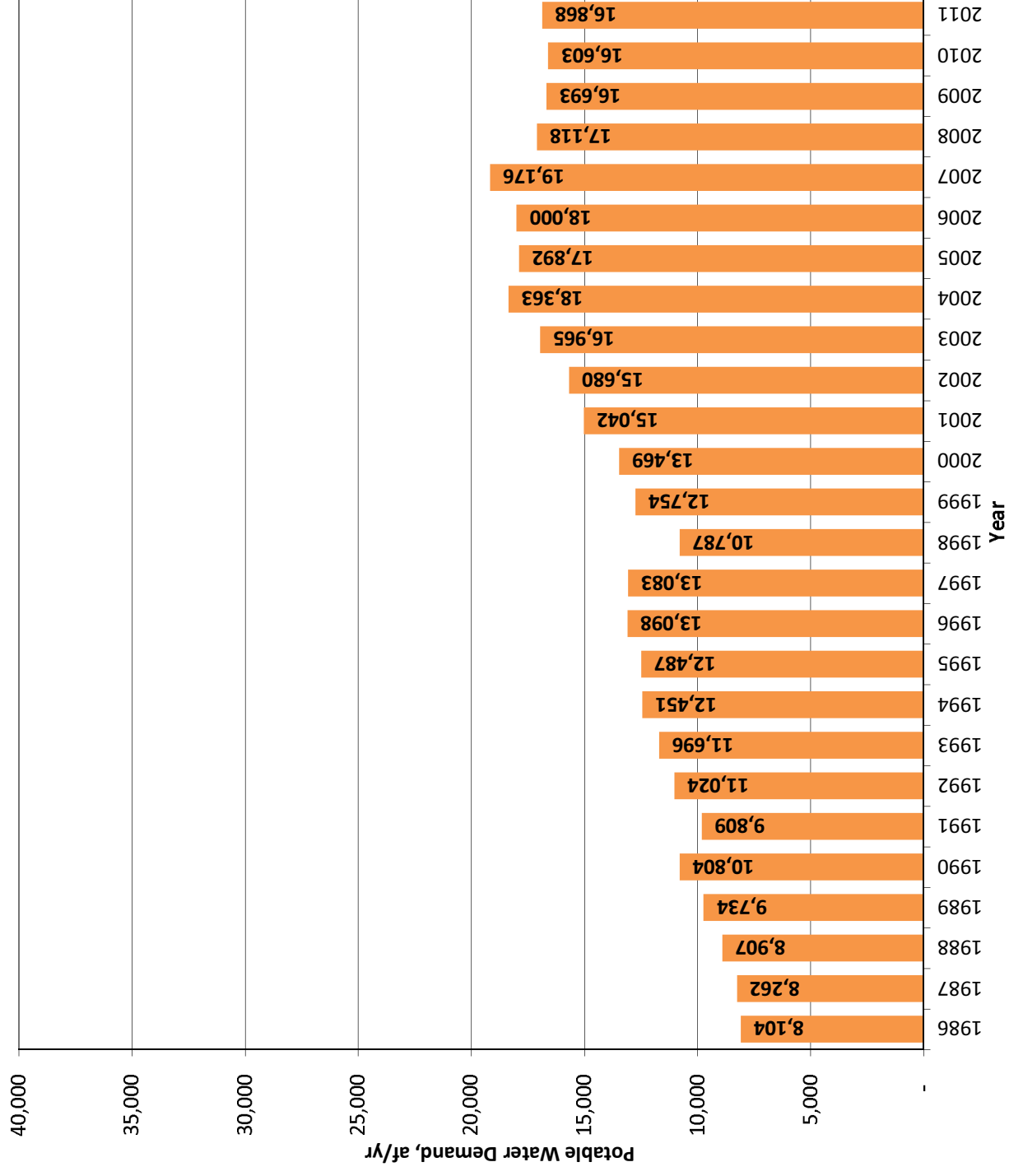
FIGURE 2

**City of Tracy
Revised Water Supply Assessment
for the Ellis Specific Plan**

**PROPOSED ELLIS SPECIFIC
PLAN LAND USE**



Figure 3. City of Tracy Historical Potable Water Demand



Legend:

■ Historical Potable Water Demand

Notes:

(1) Source: City of Tracy Water Inventory Reports, Annual Production Reports, and Table 6 Current and Historical Potable Water Demand by Water Demand Sector of the City of Tracy 2010 UWMP, May 2011.

Figure 4. City of Tracy Historical and Projected Future Water Demand

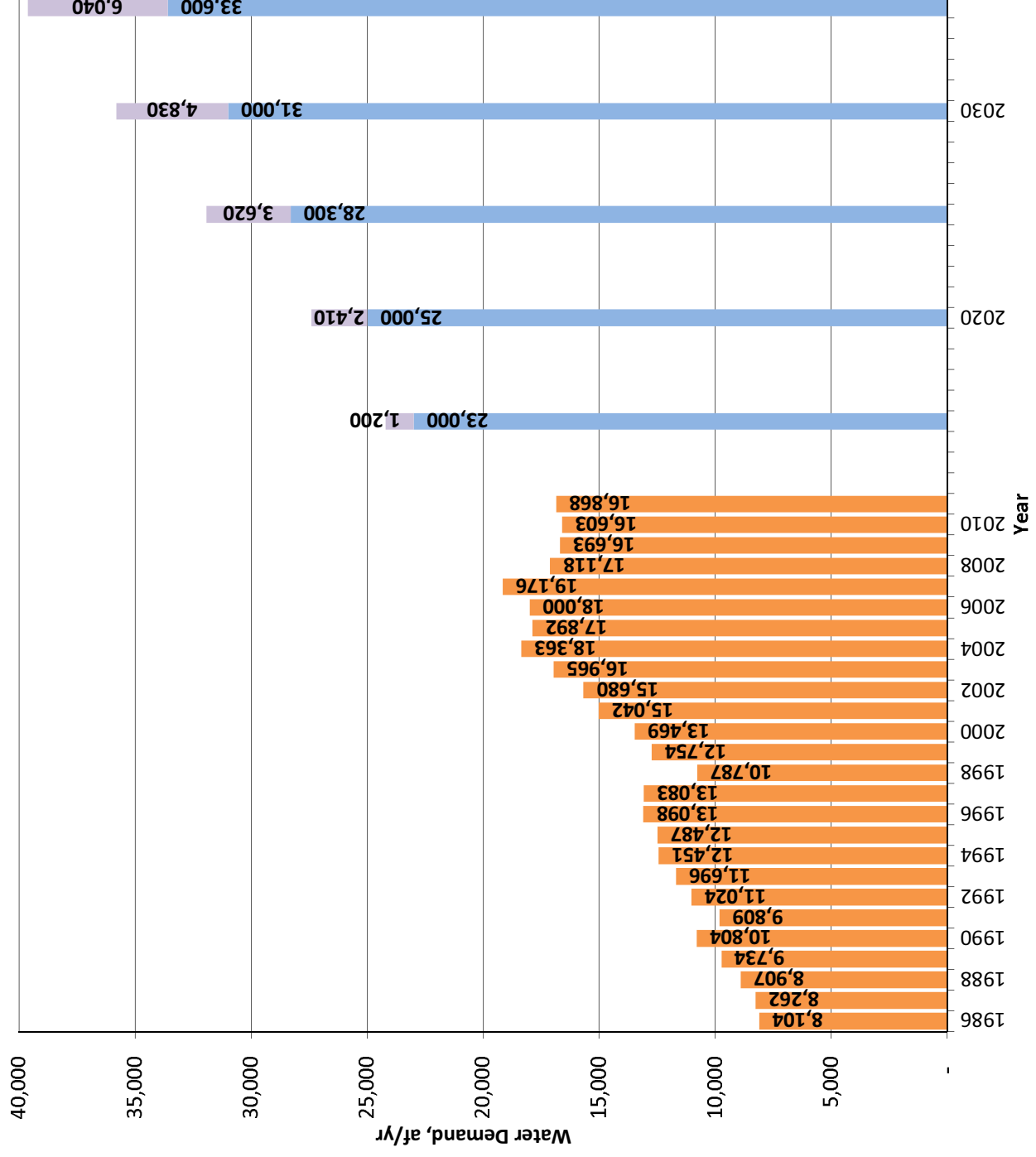
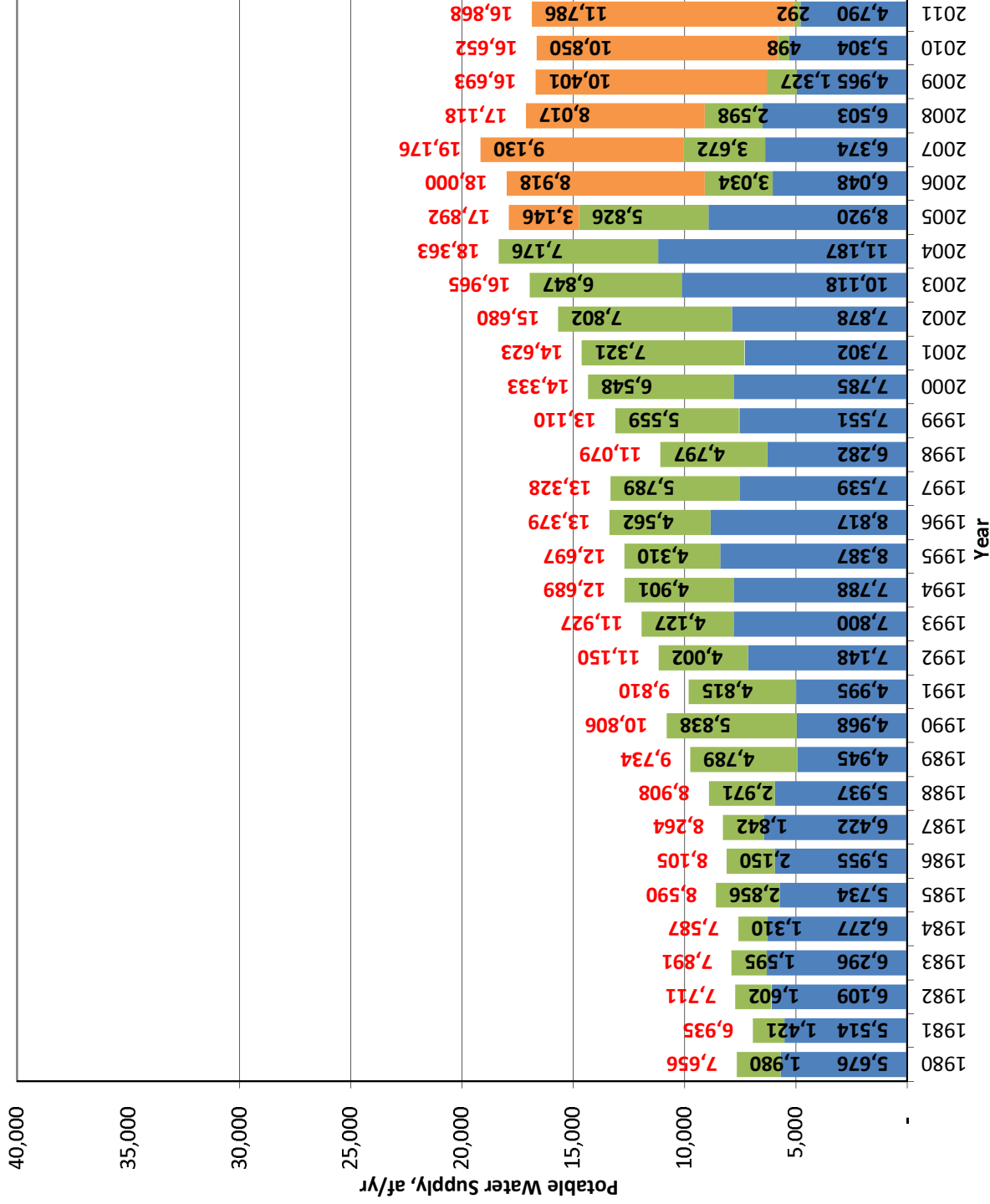


Figure 5. City of Tracy Projected Future Potable Water Demand by Development Stage



Figure 6. City of Tracy Historical Potable Water Supplies



Legend:

- SSJID (SCWSP)
- Groundwater
- CVP Deliveries

Total Potable Water Supply

Notes:

(1) Source: City of Tracy Annual Water Delivery Schedule (1998-2004). 2005-2010 data based on Table 11 of City of Tracy 2010 UWMP, May 2011. 2011 data based on City production data.

(2) Data for 1980 to 1997 based on historical City groundwater pumpage and CVP deliveries.

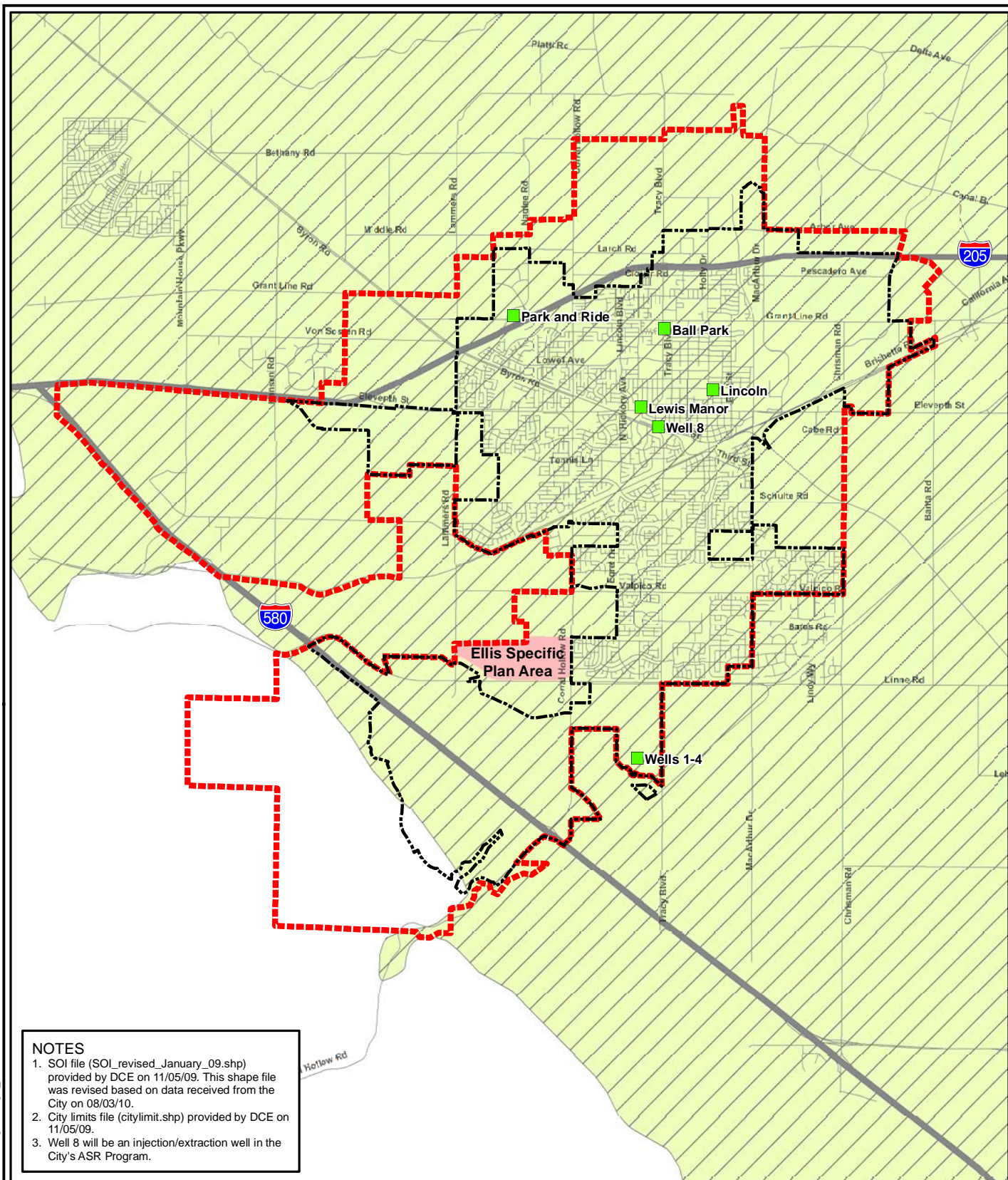


FIGURE 7

**City of Tracy
Revised Water Supply Assessment
for the Ellis Specific Plan**

**GROUNDWATER BASIN
AND WELL LOCATIONS**

Figure 8. City of Tracy Future Potable Water Supply vs. Demand in Normal Years

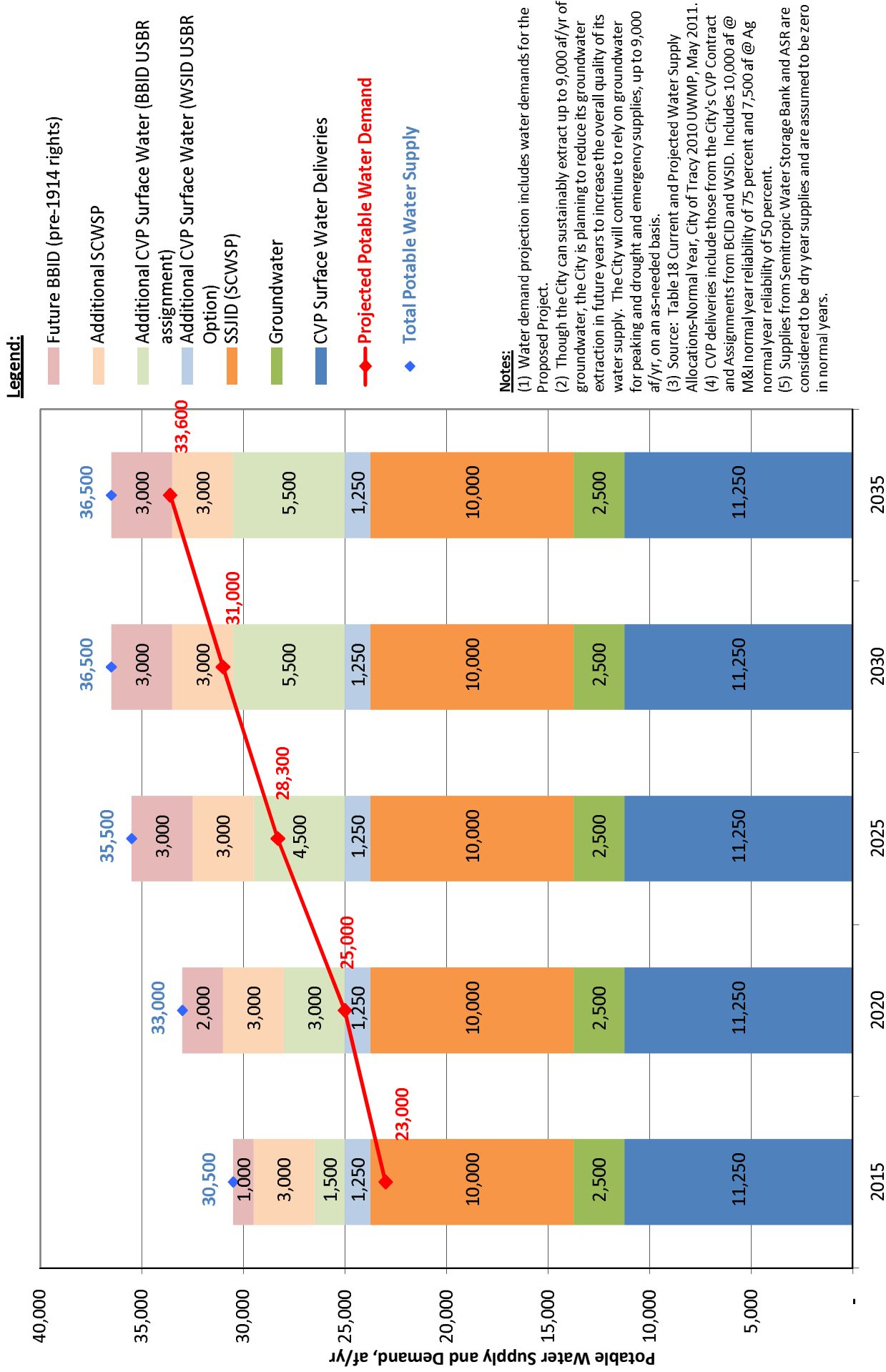
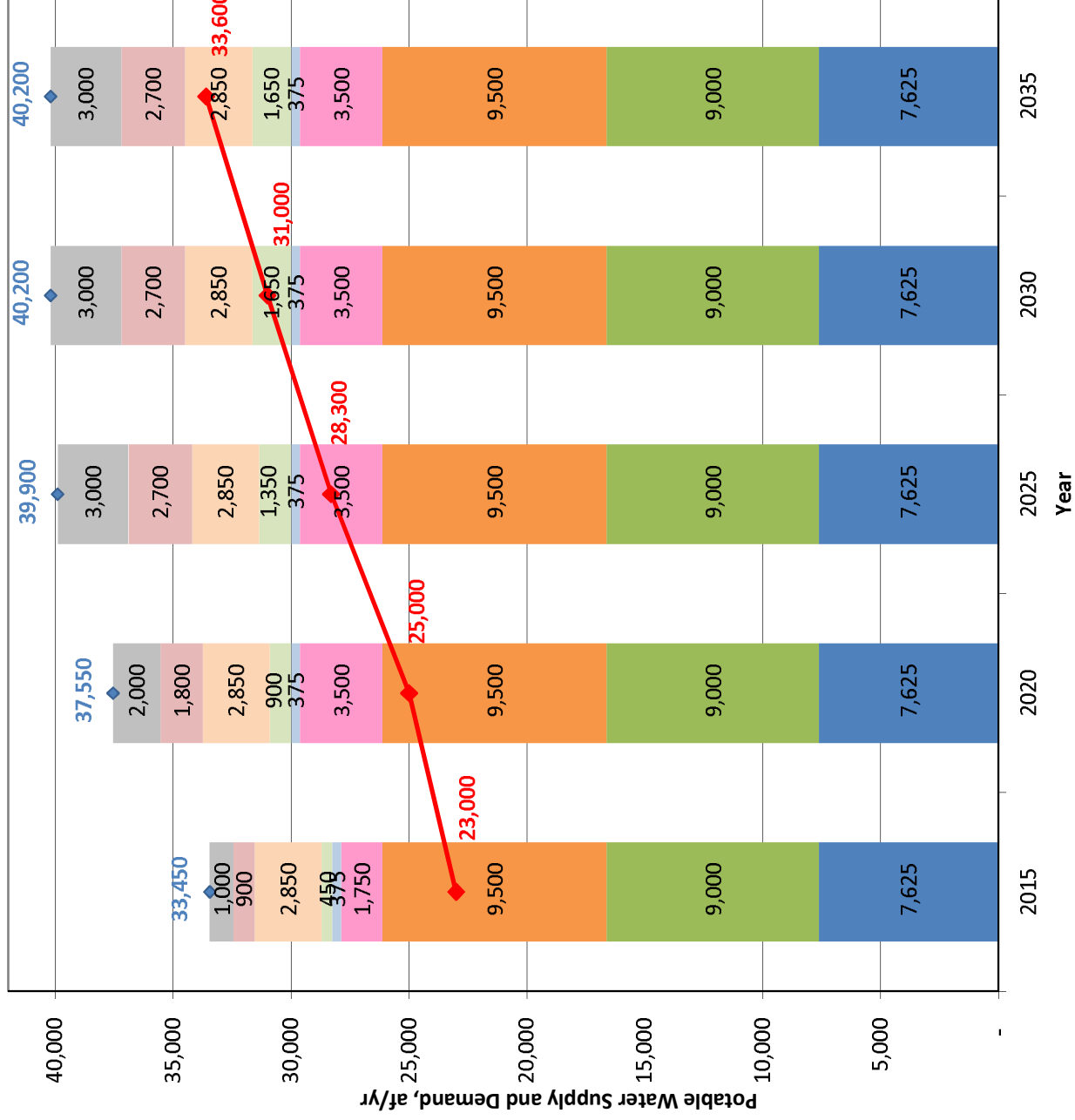


Figure 9. City of Tracy Future Potable Water Supply vs. Demand in a Single Dry Year

Legend:

- Future ASR Water Banking
- Future BBID (pre-1914 rights)
- Additional SCWSP
- Additional CVP Surface Water (BBID USBR assignment)
- Additional CVP Surface Water (WSID USBR Option)
- Semiotropic Water Storage Bank
- SSJID (SCWSP)
- Groundwater
- CVP Surface Water Deliveries
- Projected Potable Water Demand
- Total Potable Water Supply



Notes:

- (1) Though the City can sustainably extract up to 9,000 af/yr of groundwater, the City is planning to increase the overall quality of its water extraction in future years to increase the overall quality of its water supply. The City will continue to rely on groundwater for peaking and drought and emergency supplies, up to 9,000 af/yr, on an as-needed basis.
- (2) Source: Table 19 Current and Projected Water Supply Allocations-Single Dry Year, City of Tracy 2010 UWMP, May 2011.
- (3) CVP deliveries include those from the City's CVP Contract and Assignments from BCID and WSID. Includes 10,000 af @ M&I single dry year reliability of 65 percent and 7,500 af @ Ag single dry year reliability of 15 percent.
- (4) In 2012, the City entered into a permanent agreement with Semiotropic Water Storage Bank which provides for up to 10,500 af of storage for the City of Tracy in the Semiotropic Water Storage Bank, allowing for annual withdrawals of up to 3,500 af/yr when needed (as shown on this figure for a single dry year).

Figure 10. City of Tracy Future Potable Water Supply vs. Demand in Multiple Dry Years



Figure 11. City of Tracy Existing Potable Water Supplies vs. Demand

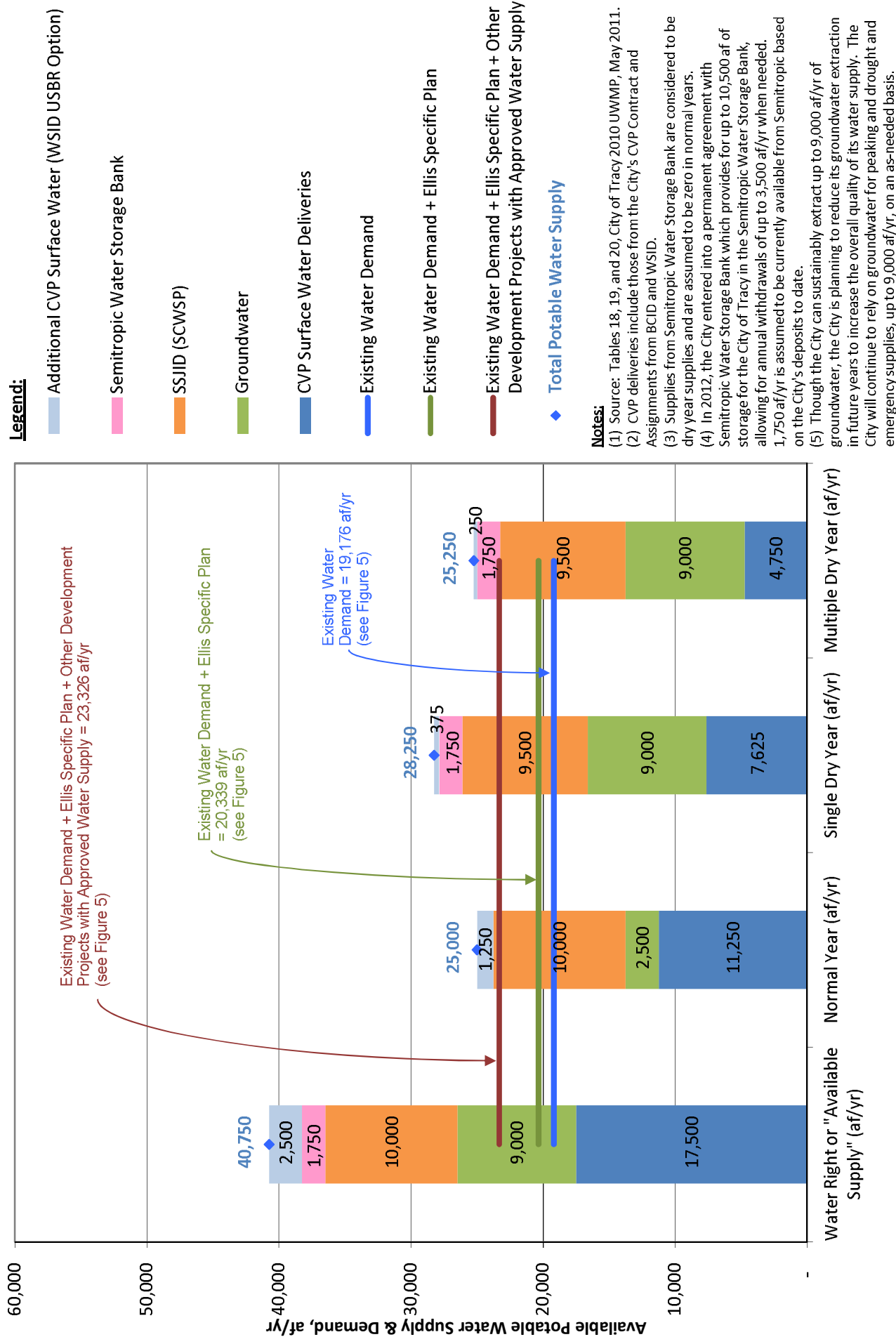


Figure 12. City of Tracy Existing and Additional Planned Future Potable Water Supplies at Year 2035 vs. Demand

Legend:

- Future ASR Water Banking
- Future BBID (pre-1914 rights)
- Additional SCWSP Supplies
- Additional CVP Surface Water (BBID USBR assignment)
- Additional CVP Surface Water (WSID USBR Option)
- Semitropic Water Storage Bank
- SSJID (SCWSP)
- Groundwater
- CVP Surface Water Deliveries
- Existing Water Demand
- Existing Water Demand + Ellis Specific Plan
- Existing Water Demand + Ellis Specific Plan + Other Development Projects with Approved Water Supply
- Projected Future Water Demand (Year 2035)

◆ Total Potable Water Supply

Notes:

See notes on Figure 11.

