Los Osos Community Plan

Draft Environmental Impact Report

State Clearinghouse Number 2015031090

Volume 2: EIR Appendices

Prepared for:
County of San Luis Obispo
Department of Planning and Building

July 2019

John F. Rickenbach Consulting
7675 Bella Vista Road
Atascadero, California 93422

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JFR
PLANNING AND ENVIRONMENTAL CONSULTING

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Notice of Preparation (NOP) and Responses

NOTICE OF PREPARATION – Draft Environmental Impact Report & Scoping Meeting Notice

SAN LUIS OBISPO COUNTY DEPARTMENT OF PLANNING AND BUILDING
976 OSOS STREET • ROOM 200 • SAN LUIS OBISPO • CALIFORNIA 93408 • (805) 781-5600
Promoting the Wise Use of Land • Helping to Build Great Communities

Date:	**March 20, 2015**
To:	**Responsible Agencies, Trustee Agencies and Interested Parties**
From:	**County of San Luis Obispo (Project Applicant) Department of Planning & Building 976 Osos St., Room 300 San Luis Obispo, CA 93408-2040**
Project Title:	**Notice of Preparation (NOP) of a Draft Environmental Impact Report for the Los Osos Community Plan and Notice of Scoping Meeting ED13-061**
NOP Responses Due By:	**April 20, 2015**
Scoping Meeting Date:	**April 13, 2015 at 6:00PM**

A Draft Environmental Impact Report (EIR) is proposed to evaluate the environmental effects from the Los Osos Community Plan.

This notice: (1) provides an overview of the proposed action and possible alternatives; (2) is soliciting comments from Responsible and Trustee Federal, State and local agencies on the County's intent to prepare a Draft EIR document; (3) is soliciting public participation in and notification of a Public Scoping Meeting and the initiation of a 60 day public scoping period relating to the scope of environmental issues and alternatives to be included in the Draft EIR document.

NOTICE OF PREPARATION - ENVIRONMENTAL DOCUMENTS

The County of San Luis Obispo will be the California Environmental Quality Act (CEQA) Lead Agency and will be preparing an integrated Draft Environmental Impact Report (EIR).

Contact Information. For Responsible and Trustee Federal, State and local agencies, please provide your comments, questions and responses by the NOP date specified above and address all inquiries to:

Kerry Brown
County of San Luis Obispo
Planning and Building Department
976 Osos Street, Room 300
San Luis Obispo, CA 93408
e-mail: kbrown@co.slo.ca.us

The County requests the views of your agency as to the scope and content of the environmental information which is relevant to your agency's statutory responsibilities in connection with the proposed project. Your agency will need to use the EIR document prepared by the County when considering your permit or other approval(s) for the project.

Please provide the following information at your earliest convenience, but not later than the comment period due date specified above.

1. NAME OF CONTACT PERSON. (Please include address, e-mail and telephone number)
2. PERMIT(S) or APPROVAL(S) AUTHORITY. Please provide a summary description of these and send a copy of the relevant sections of legislation, regulatory guidance, etc.
3. ENVIRONMENTAL INFORMATION. What environmental information must be addressed in the EIR document to enable your agency to use this documentation as a basis for your permit issuance or approval?
4. PERMIT STIPULATIONS/CONDITIONS. Please provide a list and description of standard stipulations (conditions) that your agency will apply to features of this project. Are there other conditions that have a high likelihood of application to a permit or approval for this project? If so, please list and describe.
5. ALTERNATIVES. What alternatives does your agency recommend be analyzed in the EIR?
6. REASONABLY FORESEEABLE PROJECTS, PROGRAMS or PLANS. Please name any future project, programs or plans that you think may have an overlapping influence with the project as proposed.
7. RELEVANT INFORMATION. Please provide references for any available, appropriate documentation you believe may be useful to the County in preparing the EIR. Reference to and/or inclusion of such documents in an electronic format would be appreciated.
8. FURTHER COMMENTS. Please provide any further comments or information that will help the County to scope the document and determine the appropriate level of environmental assessment.

The general project description, location, and the probable environmental effects are contained in the following materials.

Due to the time limits mandated by State law, your response must be sent at the earliest possible date, **but not later than the due date specified above**.

SCOPING MEETING
A public scoping meeting on the Draft EIR document will be held on **April 13, 2015** at **6:00PM** at the South Bay Community Center located at 2180 Palisades Avenue, Los Osos, California. The purpose of the public scoping meeting is to solicit the views of interested parties, responsible agencies, agencies with jurisdiction by law, trustee agencies and involved federal agencies, as to the appropriate scope and content of the Draft EIR document. Representatives from the County will be present to offer a summary of and answer questions regarding the proposed project. All inquiries about this process or written comments submitted should be made to Kerry Brown (see contact information above). **Written public comments will be due no later than April 20, 2015**.

PROJECT DESCRIPTION / PURPOSE
The purpose of this Los Osos Community Plan is to establish a vision for the future of Los Osos that will guide growth and development over the next 20 years. The vision described in this plan reflects the desires of the community, and the plan contains the policies, programs, standards, and guidelines to help achieve that vision.

Background

The original Estero Area Plan was certified by the Coastal Commission in 1988 and an update to the Plan began in 1996. The Estero Area Plan encompasses Los Osos, Cayucos, and the rural area (of Estero) entirely within the Coastal Zone. On November 2, 2004, the Board of Supervisors approved the Estero

Area Plan update for submittal to the California Coastal Commission. The update and associated amendments were submitted to the Coastal Commission at the end of December 2004 as part of Local Coastal Program Amendment No. 2-04.

Due to the outstanding issues in Los Osos, specifically lack of an approved communitywide Habitat Conservation Plan for Los Osos to deal with widespread environmentally sensitive habitat, a projected build-out in line with groundwater supply, and at that time (mid 2000's) uncertainty about a community-wide sewer system, the County modified the submittal to the Coastal Commission to remove the Los Osos urban area from the update.

Construction of the Los Osos Wastewater Project is currently underway. Before vacant parcels within the prohibition zone can hook up to the wastewater project, the County, as the applicant, is required to update the Estero Area Plan for the Urban Area of Los Osos (the 'Los Osos Community Plan'), to incorporate a sustainable build-out target supported by the safe yield of the groundwater basin, and integrate a Habitat Conservation Plan for long-term preservation of environmentally sensitive habitat areas throughout the community.

Project Location

The project boundaries are defined as the area within the urban reserve line of the community of Los Osos, and for water related issues: the Los Osos Groundwater Basin, which are within the Estero planning area. The Community Plan covers approximately 3,400 acres. The project is bounded by Morro Bay and the Estuary to the north, Los Osos Valley to the east and Montaña de Oro State Park to the west and south. Los Osos is an unincorporated community ten miles northwest of the City of San Luis Obispo and five miles south of the City of Morro Bay in San Luis Obispo County, California.

The Los Osos Community Plan

The project is to establish a Community Plan for the community of Los Osos, and update the Estero Area Plan, as needed, to establish the Community Plan. The Plan will be a comprehensive update of the community with a focus on protecting key resources as well as providing adequate infrastructure as new development occurs. Key elements of this Plan include:

1) Focus on infill development within the Urban Services Line
2) A land use plan
3) A circulation plan
4) Coastal access component
5) An implementation program
6) A Public Facilities Financing Plan
7) Revised development standards

The Community Plan is intended to guide growth and development for Los Osos for the next 20 years. The Community Plan will allocate land in specific land use categories for a range of uses to support the community. The Community Plan proposes policies, standards, programs, and guidelines to shape the future growth and development of the community. Proposed growth is contingent on available resources.

The Community Plan will include land use category changes, amend designations, and proposes new designations within the community. Proposed planning requirements will regulate development standards, such as the heights of structures, setbacks, lot coverage, density and intensity, open space, land uses, landscaping and tree planting, and parking and access requirements.

The Public Review Draft of the Los Osos Community Plan can be found on the County Planning and Building Department's web site:

http://www.slocounty.ca.gov/planning/loplan.htm

PROBABLE ENVIRONMENTAL EFFECT TOPICS

As required by CEQA, the Draft EIR will identify and evaluate any potentially significant adverse impacts, whether direct or indirect, that may result from the proposed project. The Draft EIR document will also determine whether mitigation measures and/or alternatives can be implemented that will mitigate those impacts to a level that is less than significant. The alternatives for analysis in the document may include, but not be limited to, variations in the level of expected future development within the approximately 3,560-acre planning area. All impacts will be evaluated against existing conditions in the study area as of the date of the issuance of this NOP.

The Draft EIR document will address the following environmental issues, including, but not limited to:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Zoning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Socioeconomic and Environmental Justice
- Transportation and Circulation
- Utilities and Service Systems

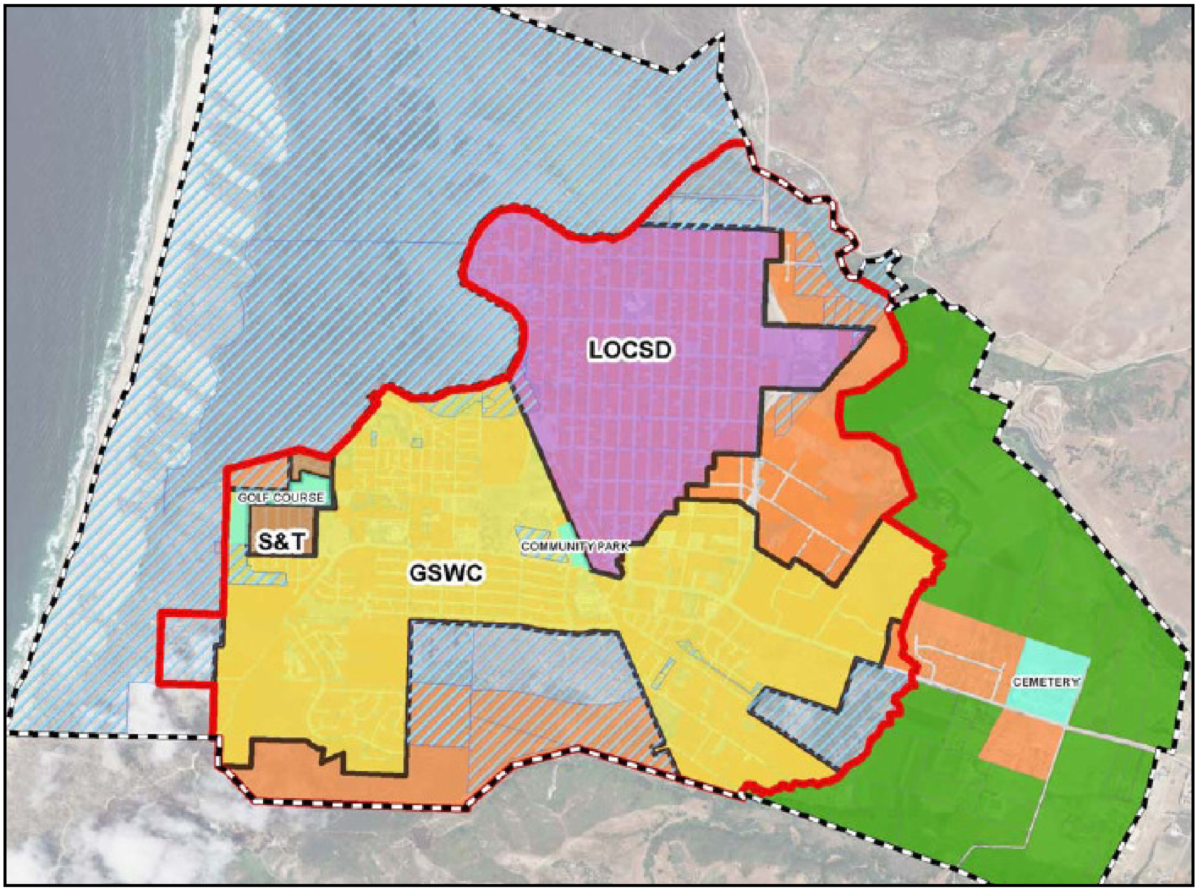
Additional Information: Additional information (such as color versions of attached figures) regarding this project may also be found at Planning's website: http://www.slocounty.ca.gov/planning.htm.

Attachments

Figure 1 – Map of the Los Osos Community
Figure 2 – Map of the Los Osos Groundwater Basin

FIGURE 1 – LOS OSOS COMMUNITY

FIGURE 2 – LOS OSOS GROUNDWATER BASIN



STATE OF CALIFORNIA—NATURAL RESOURCES AGENCY EDMUND G. BROWN JR., *GOVERNOR*

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May 21, 2015

Kerry Brown
San Luis Obispo County Planning and Building
County Government Center, Room 310
San Luis Obispo, CA 93408

Subject: ***Los Osos Community Plan Public Review Draft and Notice of Preparation for Draft Environmental Impact Report (SCH # 2015031090)***

Dear Ms. Brown:

Thank you for sending the Notice of Preparation (NOP) of a draft Environmental Impact Report (EIR) for the Draft Los Osos Community Plan (LOCP) for our review. As we understand it, the purpose of the LOCP is to establish a vision for the future of Los Osos that will guide growth and development over the next 20 years. The LOCP will thus contain the policies, programs, standards, and guidelines to help achieve that vision.

The LOCP will be an amendment to the County's Land Use Plan (LUP), which is a component of the County's certified Local Coastal Program (LCP), and will therefore require certification by the Coastal Commission.[1] In addition, as we understand it, portions of the Estero Area Plan would also be amended to ensure internal LCP consistency with the proposed LOCP, and those amendments would be submitted at that time as well.

After initial review, we offer the following preliminary comments, observations and suggestions on the Draft LOCP and the NOP. We look forward to reviewing the Draft EIR when it is released.

General comments:

Scope of Work. The County of San Luis Obispo, through the LOCP, has an opportunity to both shape future development and protect critical coastal resources in the community of Los Osos over the next 20 years and beyond. We are supportive of this effort, and we appreciate all of the work by the County and interested parties to move towards updating the LCP, including efforts related to the Los Osos Habitat Conservation Plan (HCP), the Los Osos Basin Plan (Basin Plan), and the Los Osos community sewer system (LOWWP).

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1 The standard of review for an LUP amendment is that it must conform to the requirements of Chapter 3 of the Coastal Act.

In addition, the LOCP gives the County the opportunity to evaluate Los Osos both on a community-wide basis and also on a finer-scale parcel-by-parcel basis to understand where future development is and is not appropriate, including determining what areas should be designated as open space to provide an increased Los Osos "greenbelt." The LOCP also provides an opportunity to make adjustments to the urban services line (USL), the urban reserve line (URL), and public service area boundaries to help ensure that development is concentrated in appropriate areas and that sensitive habitats are protected from development, as is required by the Coastal Act.

In general, we believe that the priority at this stage is to identify the urban core for Los Osos, including in relation to the USL, the URL, and public service area boundaries so it is clear for all parties moving forward where development is intended to be concentrated in Los Osos, and where development is intended to be discouraged. This exercise then allows for the DEIR to appropriately evaluate the potential impacts from such development, including in relation to the HCP and what it is intended to cover. In this sense, we note that protection of Environmentally Sensitive Habitat Areas (ESHA) in Los Osos is integrally related to where services (including water and wastewater) are allowed and provided, where the USL and URL are located, and that thoughtful evaluation of the locations of these lines is critical.

Urban Services Line and Urban Reserve Line. The USL should be used to identify the urban core of Los Osos in which development should be concentrated as much as possible, including in terms of infill areas. Thus, we believe that the USL should be drawn, in general, around presently developed areas and potential infill areas associated with these developed areas. The URL (i.e., the area between the USL line and the URL line) should *only* encompass the area where a similar scale of development would be appropriate in the future We are not supportive of amended USL and/or URL lines that do other than this. The identification of the appropriate USL and URL lines needs to take into account areas where development would be constrained or precluded, including based on habitat constraints (e.g., lots that contain wetlands, riparian, central maritime chaparral, oak woodland, and/or other environmentally sensitive habitat area (ESHA), etc.), visual impacts, water and sewer service constraints, etc.). If there are determined to be areas, based on this analysis, that shouldn't be developed because they can't meet LCP and Coastal Act requirements, then these areas should either be re-designated to open space (or some other similar land use designation) and/or moved outside of the USL/URL (and re-designated). Public service area boundaries also need to be identified with these same constraints in mind.

The County has proposed to adjust the USL and URL lines in several areas in the LOCP. However, there appear to be at least four additional main areas where the EIR should evaluate the potential to further adjust the USL and/or URL and/or redesignate the land use category of certain parcels to facilitate incorporation into the greenbelt, including due to the presence of the above listed habitat and development constraints:

1. **Morro Bay Frontage.** All areas within the identified USL that front upon Morro Bay between 10th Street (beginning at the Elfin Forest) to the north and continuing to the end of Butte Drive to the southwest.

2. **Southwest Los Osos.** All undeveloped areas within the URL with a land use category of Residential Suburban located between Sea Wind Way to the north and the Bayview Unit of the Morro Dunes Ecological Reserve to the east, including three undeveloped parcels west of the Broderson site.

3. **East Los Osos.** All undeveloped areas within the URL between Los Osos Valley Boulevard to the south and Los Osos Creek to the north. These include some properties in the Residential Suburban and Residential Rural land use categories.

4. **High School.** All undeveloped areas immediately to the north and east of Los Osos High School within the URL and within the Residential Suburban land use category.

There may be other areas that should also be evaluated, but at a gross scale, these seem the most obvious to us at this time. Further iterations should refine the boundaries at an even finer scale, and thus there are likely other areas and parcels that likewise need to be so evaluated.

To inform this analysis, the EIR should clearly identify all existing and proposed relevant boundary lines located in Los Osos that may affect the USL and URL adjustments, including all relevant habitat areas and development maps that may be applicable to the planning process. These should, at a minimum, include the existing and proposed URL and USL, the current sewer prohibition zone area, the new wastewater service area (and any potential areas of inclusion in the future), and both the "South Bay Urban Area" and the "Los Osos Greenbelt," referenced in County Condition #92 of CDP A-3-SLO-09-055/069. Relevant habitat and development maps that should be included, at a minimum, may include those identifying Los Osos's protected lands, undeveloped parcels, vegetation and land cover, and parcel development status.

Habitat Conservation Plan. It is our understanding that the Los Osos HCP's planning area is currently coterminous with the community's URL. In regards to the appropriate planning area for the HCP, Condition 92 of the LOWWP provides some insight. First, this condition requires that an HCP shall be prepared and implemented for the long-term preservation of habitat remaining *within the Los Osos Greenbelt, including habitat remaining on individual vacant lots.* Second, the HCP must identify the habitat resources and the quality of those resources *on the remaining vacant properties within the South Bay Urban Area and Los Osos Greenbelt.* Third, the HCP must specify measures to avoid and minimize impacts to ESHA from buildout of *the Service area.* With the above known, Commission staff is unclear whether the HCP planning area is physically located in the most appropriate spot for LCP and CDP purposes, and as required by Condition 92.

Currently, new development outside the USL is not allowable due to lack of adequate water services (LCP Public Works Policy 1) necessary to serve proposed development*, given the already outstanding commitments to existing lots within the USL.* In addition, development outside the USL is only allowed if the proposed development: 1) is serviced by adequate private on-site water and waste disposal systems; and 2) reflects an environmentally preferable alternative.

Because there is no clear date certain as to when the County or the Commission would be able to make the required findings (based on the HCP, the Basin Plan, the LOCP, etc.) to allow new development, we recommend limiting the HCP review area to those areas and parcels within the USL that would constitute urban infill development, with mitigation for future infill development occurring in the form of retiring parcels within the URL and thus helping to enlarge the greenbelt.

Environmentally Sensitive Habitat Area. Commission and County staff have been analyzing development proposals in Los Osos for some time under the premise that all of Los Osos is generally considered ESHA due to the presence of the federally listed Morro Shoulderband snail. However, there is not currently a certified Sensitive Resource Area (SRA) combining designation or Environmentally Sensitive Habitat (Terrestrial Habitat) designation over the entirety of Los Osos for the purposes of protecting this snail. Thus, there has not been a "mapped ESHA" designation for Los Osos in this regard.

Currently, because there is no mapped ESHA for the snail, the County (or Commission staff on appeal) would analyze the site for ESHA as part of the CDP application or appeal process. Projects located within ESHA are limited to ensure no significant disruption to the resource, absent a takings analysis. As part of the LOCP, the County is proposing a new "Los Osos Ecosystem" SRA, which would designate mapped ESHA for the area between the USL and the URL. Instead of specifically singling out the snail, this new SRA and ESH (TH) designation would aim to protect the three most prominent communities that support a diversity of native plant species and a number of rare, endangered, or threatened species of plants and animals, including the Morro Shoulderband snail and the Morro Bay kangaroo rat. However, as part of the proposed LOCP, there would continue to be no mapped ESHA within the USL. We do not support this approach, and believe that the LOCP provides the most opportune time to map ESHA overall. If the County wishes to specifically *not* map ESHA within the USL, an analysis as to why this area would not raise to the level of ESHA will have to be undertaken and supported in the EIR.

Additionally, as part of the proposed LCP amendment, the County is proposing to remove mention of the Los Osos Dune Sands SRA and to delete Figure 6-3 from the Estero Area Plan (EAP). The EIR should explain the current LCP status of the Los Osos Dune Sands SRA both inside Los Osos and outside the URL boundary. In other words, if the Los Osos Dune Sands SRA is not certified for the Los Osos area, but is certified for areas outside of Los Osos, then both the text and Figure 6-3 in the EAP should be updated to reflect this and should not be removed.

Adequate Services
Los Osos Basin Plan/Water. Much of the future development potential (including additional dwelling units) in Los Osos, as identified in the LOCP's Chapter 7 Planning Area Standards, is based upon the implementation and success of several *Programs* described in the required Basin Management Plan (Basin Plan). However, Special Condition #5 of CDP A-3-SLO-09-055/069

for the Los Osos Wastewater Project (LOWWP) required a Recycled Water Management Plan (RWMP). The approved RWMP includes a Recycled Water Reuse Program, Water Conservation Program, Monitoring Program, and Reporting and Adaptive Management Program. The components of the RWMP, including plans for water reuse, conservation and monitoring, were designed to be complementary with the Basin Plan. However, given that the RWMP is not mentioned in the LOCP, it is not clear how the RWMP's provisions are addressed in the LOCP. In addition, the County Board of Supervisors recently approved the Water Conservation Implementation Plan (WCIP). The WCIP outlines the actions to achieve the measures of the Water Conservation Program, which is part of the RWMP. Thus, the EIR should analyze how the LOCP is consistent with the Basin Plan, the RWMP and the WCIP, and how these plans will effectively work together to rectify the current identified water quality and quantity problems in Los Osos, and provide the basis for future development through the LOCP standards. Lastly, we are also unclear how the status of the County's two water conservation ordinances[2] for Los Osos (particularly the County's 2:1 retrofit condition requirement for new development in Los Osos) will change with the proposed LOCP. This needs to be clarified.

In addition, while the LOCP speaks to the Basin Plan and bases the number of new dwelling units on the successful completion, implementation, and effectiveness of its stated *Programs,* Special Condition #6 of CDP A-3-SLO-09-055/069 requires that adequate water must be available to support new development *without adverse impacts to ground and surface waters, including wetlands and all related habitats.* Thus, we would suggest that this condition, which was necessary for project consistency with LCP Public Works Policy 1, be a fundamental requirement of the Community Standards section of the LOCP.[3]

Thus, we would suggest that this section be revised to ensure adequate services (including wastewater treatment) are available for new development. Sample language could include, for example:

> *Development shall not be approved unless it can be demonstrated, in writing and supported by substantial evidence, that it will be served with adequate and sustainable water supplies and wastewater treatment facilities, consistent with the subsections below:*
>
> a. *Development receiving water from a water system operator and/or wastewater from a public/community sewer system shall only be approved if there is: (i) sufficient water and wastewater public works capacity within the system to serve the development given the outstanding commitments by the service provider; such water service shall not adversely*

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2 These include Title 8 of the County Code, which requires retrofitting of structures with water saving plumbing fixtures upon sale, and Title 19, which requires new development to retrofit water fixtures in existing buildings in order to save twice the water that the new development will use. It is expected that retrofitting opportunities for Title 19 compliance will diminish over time as the Water Conservation Implementation Plan proceeds. This will also have an effect on the Title 8 retrofit, as all of the wastewater service area, where most of the retrofit opportunities exist, will have compliant toilets.

3 "Verification of water and sewer service" (e.g., a letter from the applicable water purveyor), as described in proposed Section 7.3B1, could be an application content requirement (e.g., within proposed Section 7.3E2a), or included as described above.

impact coastal resources including streams, riparian habitats, and wetlands and shall not adversely impact water supply available for existing and continued agricultural production or for other priority land uses (e.g., coastal-dependent uses, public recreation, essential public services, visitor-serving uses and commercial recreation uses); and, (ii) evidence that the entity providing the service can provide such service for the development. Such evidence may include a will-serve letter from the service provider.

b. *An application for development receiving water from a well shall include a report prepared by a California Registered Geologist or Registered Civil Engineer which demonstrates, to the satisfaction of the Director, that:*

1) The sustainable yield of the well meets the LCP-required sustained pumping rate (minimum of xx gallons per minute) and must be equal to or exceed the project's estimated water demand.

2) The water quality meets safe drinking water standards.

3) The extraction shall not adversely impact other wells located within 300 feet of the proposed well; shall not adversely impact adjacent coastal resources including streams, riparian habitats, and wetlands; and shall not adversely impact water supply available for existing and continued agricultural production or for other priority land uses (e.g., coastal-dependent uses, public recreation, essential public services, visitor-serving uses and commercial recreation uses).

Basin Plan Success. The Los Osos Groundwater Basin section (7.3D1 through D4) of the LOCP outlines and describes the review process for "effectiveness" of programs listed in the Basin Plan. The EIR should more clearly define and describe the success criteria for these programs, since the successful implementation and effectiveness of these programs will be critical to allowing the County and the Coastal Commission (on appeal) to find that adequate water services exist to allow for new development, without adverse impacts to ground and surface waters, including wetlands and all related habitats.

Exemption. Finally, we do not support an exemption to the Basin Plan program standards for new development, as written in Section 7.3D4. As mentioned above, the LCP currently requires that proposed new development demonstrate conclusively that adequate and sustainable water and sewer capacity are available to support such development without adverse impacts to ground and surface water, including wetland and all related habitats (Public Works Policy 1). Thus, it is unclear whether this evidence could be found by the County without knowing the effectiveness (as measured by success criteria) of the Basin Plan programs. In other words, evidence that the Basin Plan programs have been successfully implemented will need to be demonstrated in order to find that a particular project is consistent with the requirements of Public Works Policy 1.

Additional Specific Comments*:*

1. Page 1-5 Introduction:

   "A Local Coastal Program includes both a land use plan (e.g. the Land Use and Circulation Element) and an implementation plan (e.g. Planning Area Standards and the Coastal Zone Land Use Ordinance)." This statement is not quite right. The County's LUP is defined as the Coastal Plan Policies, the Framework for Planning, and the four Area Plans (including their Standards); the County's IP is defined solely as the CZLUO. If the County somehow defines its LUP and IP differently from the description above, then we need to resolve any such differences as soon as possible

2. Page 2-3 Community Plan Policies:

   "… the County has certified this basin to have a Level of Severity III. This means that the basin is at or approaching overdraft conditions." Level III indicates that the demand for a resource, in this case water, **equals or exceeds** the supply. The word "approaching" should be replaced with "exceeding."

3. Page 2-4 Community Plan Policies:

   "In order to ensure that growth does not result in further impacts upon the basin, the County proposes to use the Growth Management Ordinance as a tool for metering out construction permits." Please provide additional detail on this use of the Growth Management Ordinance as a tool, in relation to water resources.

4. Pages 2-7 through 2-14 Community Plan Policies:

   "The following tables summarize existing policy language in the Local Coastal Program that is applicable to the community of Los Osos." In general, we are uncomfortable with Tables 2.4.1 through 2.4.6 because they include some LCP policies but not all LCP policies that are "applicable." While the tables state that the policy list is not exhaustive, this type of policy chart is subjective and can confuse the public by appearing to give more weight to those policies that are referenced in the tables. For example, LCP ESHA Policies 2 and 3, while not included in this LOCP tables, are critically important requirements of the LCP. The former requires the Applicant to demonstrate that development will have no significant impact sensitive habitats and be consistent with the biological continuance of the habitat, and the latter requires restoration of damaged habitats. We recommend that these tables either be amended to include *all* applicable polices of the LCP, or that they be removed.

   In addition, it appears that several of the applicable policies cited in the tables are not part of the certified the LCP, as the tables' introductory paragraph states, including those policies found within the Agricultural Element, the Conservation and Open Space

Element, the Economic Element, and the Parks and Recreation Element. If it is the County's intent to include these policies in the LOCP, and thus to include them in the LCP amendment to certify them, then that should be explained.

5. Pages 2-14 through 2-26 Community Plan Policies:

Community Plan Policies and Programs. This section appears to include *new* policies and programs that would be applicable to the County's CDP application review process and the Commission's appeal review process. However it is unclear if this is the County's intent. Instead of policies that development is required to be consistent with, these policies and programs seem to read more as guidelines to which the County would using to guide development in Los Osos in general. Either way, the EIR should analyze how these policies and programs would apply to new development and how they would be weighed against other LCP policies, including those in Chapter 7 of the LOCP. Table 2-2, which outlines how these Chapter 2 policies would be implemented, should be similarly clarified.

6. Page 3-8 Land Use Descriptions and Settings:

3.4.2 Midtown Area (PF, REC). Per Special Condition 3 of CDP A-3-SLO-09-055/069, the Midtown site is required to be a "self-sustaining natural habitat… in perpetuity" and through a deed restriction, "all non-resource dependent development, other than that associated with the approved project and consistent with the Habitat Management Plan" is prohibited. Thus, this section should be revised to remove all listed uses that are inconsistent with the requirements of this condition.

7. Page 4-4 Environmental Resources:

"Other SRAs are for areas enabling scenic vistas to and along the coast that help assure public visual access to the coast." We are unable to locate identified SRAs within the LOCP that specifically address or require visual resource protection. In fact, only the Morro Bay Shoreline (SRA) on page 4-5 includes the word "scenic." If there are particular stand-alone visual SRAs that should be included in the LOCP for development review and approval purposes, please include them in this section. Alternatively, if the Morro Bay Shoreline (SRA), for example, is intended to enable scenic vistas to and along the coast, then this intent should be clarified and expanded upon.

"Areas with ecologically sensitive features that are listed in Chapter 7, Section 7.4 of this plan are considered SRAs, even if they are not so designated on the official maps of the Land Use Element." This sentence refers to the Morro Bay Shoreline (SRA) for: 1) Residential Density, New Land Divisions; and 2) Wetland Setbacks, and the new proposed Los Osos Ecosystem (SRA) for Required Finding. It is unclear whether the Morro Bay Shoreline (SRA) and the Los Osos Ecosystem (SRA) are both not designated

on the official maps or if it is just one of the two. Regardless, we strongly suggest that the County update the official maps to identify these two SRAs.

8. Pages 6-1 through 6-14 Coastal Access:

In general, this entire section appears to be out of date and missing critical information. We can assist in updating this section, if the County desires, but the entire section should be brought up to date to reflect the current state of public access in Los Osos, including adding additional existing public access sites and accepted easements to applicable figures and tables, and rephrasing certain coastal access terminology to better describe the state of coastal access and coastal access opportunities in Los Osos. This is the time to take a close look at the existing access and plan for future access opportunities, including ensuring that the California Coastal Trail (CCT) is located along the shoreline, and within sight, smell, and earshot of the coast. Specific comments include:

a. Page 6-1. The first sentence should include the underlined: "…the California Constitution affirms the public's right of access to and along the state's navigable waters…"

b. Table 6-1. As we have suggested above for Sections 2.4.1 through 2.4.6, Table 6-1 should either include the entire list of *all* coastal access policies or be eliminated entirely.

c. Page 6-3: Overview of Existing and Potential Coastal Access. Section 6.4 should be reworded and updated. We are unclear about a number of things in this section. First, what is the difference between a "lateral" accessway and "major lateral trails"? Where are the "major lateral trails along the shoreline?" Our understanding is that the CCT in Los Osos does not in fact run along the shoreline (as it should) but along inland streets from South Bay Boulevard to the northeast to Pecho Valley Road to the southwest. Secondly, it is our understanding that all Offers to Dedicate (OTDs) have been accepted in Los Osos so they *are* easements. If this is true, the important thing now is to identify *open* easements versus easements that need *opening*, or improvements. Lastly, the last sentence identifies Appendix C which we believe is a typo. Regardless, "Appendix C" or some other chart (e.g. Table 6-2) should detail "an inventory of public access easements and their status," not ~~offers to dedicate for lateral and vertical access to the coast~~.

d. Page 6-6: Management Objectives. Section 6.5 should be updated to remove mention of "highway pull-outs," remove the Coastal Conservancy from the list of non-profit organizations (they are a State coastal management agency), and to better describe the "key coastal access site" that the Audubon Society manages. In addition, a key bullet is missing from the list of coastal accessway oversight responsibilities of County Parks, and that is to "open the easements."

9. Pages 7-6 through 7-7 Planning Area Standards:

H. Shoreline Development. As previously mentioned, we believe this section should be tailored specifically to the unique Bay-fronting nature of Los Osos. This would include specific application requirements for new development or expansion of existing uses proposed on or adjacent to Morro Bay. References to "the beach," "shoreline protective device" and "bluff" should be reviewed for accuracy and analyzed as part of the EIR to, at a minimum, their exact locations. We are unclear which lots would require bluff setbacks for new development, or where a "beach" is located in Los Osos. Shoreline protective devices should continue to be prohibited for all new development through a conditioned deed restriction. We are available to help with this section.

Pages 7-19 through 7-53: 7.5 Land Use Category Standards. Please provide clarity on what, if any, changes are proposed in this section from the currently certified language within the Estero Area Plan.

Thank you for the opportunity to provide preliminary comments on the Public Review Draft of the LOCP and the NOP for EIR purposes.

If you have any questions or would like to discuss the LOCP, the NOP, or these comments, please feel free to contact me at (831) 427-4863 or daniel.robinson@coastal.ca.gov

Regards,

Daniel Robinson
Coastal Planner
Central Coast District Office

cc: State Clearinghouse

SLO COUNTY apcd | Air Pollution Control District
San Luis Obispo County

April 20, 2015

Kerry Brown
County of San Luis Obispo
976 Osos Street, Room 300
San Luis Obispo, CA 93401

SUBJECT: APCD Comments Regarding the Los Osos Community Plan

Dear Ms. Brown,

Thank you for including the San Luis Obispo County Air Pollution Control District (APCD) in the environmental review process. We have completed our review of the proposed project for the community of Los Osos. The Los Osos Community Plan is being developed to establish a vision for the future of Los Osos that will guide growth and development over the next 20 years. The vision described in this plan reflects the desires of the community and the plan contains the policies, programs, standards, and guideline to help achieve that vision.

The project boundaries are defined as the area within the urban reserve line of the community of Los Osos, which is within the Estero planning area. The Community Plan covers approximately 3,400 acres. The project is bounded by Morro Bay and the Estuary to the north, Los Osos Valley to the east and Montana de Oro State Park to the west and south.

The Plan will be a comprehensive update of the community with a focus on protecting key resources as well as providing adequate infrastructure as new development occurs. Key elements will include; 1) Focus on infill development within the URL, 2) a land use plan, 3) a circulation plan, 4) coastal access component, 5) an implementation program, 6) a Public Facilities Financing Plan, and, 7) revised development standards.

The following are APCD comments that are pertinent to this project.

1. Contact Person:

Meghan Field & Vince Kirkhuff
Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401
(805) 781-5912

2. Permit(s) or Approval(s) Authority:

Portable equipment used during construction activities may require statewide registration or an APCD permit. Additionally, some future developments (i.e. gas stations, auto body and paint shops, etc.) may require APCD permits and applicants will need to apply for an Authority to Construct. Please contact our Engineering Division at (805) 781-5912 prior to final permit approval of these types of projects by your agency.

Demolition and remodeling activities have potential negative air quality impacts, including issues surrounding proper demolition and disposal of asbestos containing material (ACM). Demolition and remodeling projects are subject to the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (NESHAP), which includes but is not limited to: 1) notification requirements to the APCD, 2) asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM. Please contact Tim Fuhs of the APCD Enforcement Division at 781-5912 prior to final approval of these types of projects by your agency.

3. Environmental Information:

The potential air quality impacts from construction and operational phases of the Community Plan should be assessed in the EIR. The Community Plan under development has the potential for significant impacts to local air emissions, ambient air quality, sensitive receptors, and the implementation of the Clean Air Plan (CAP). A complete air quality analysis should be included in the DEIR to adequately evaluate the overall air quality impacts associated with implementation of the proposed Community Plan. This analysis should address both short-term (construction) and long-term (operational) emissions impacts (including traditional air pollutants and greenhouse gas emissions). The following is an outline of items that should be included in the analysis:

a) A description of existing air quality and emissions in the impact area, including the attainment status of the APCD relative to State and Federal air quality standards and any existing regulatory restrictions to development. The most recent CAP should be consulted for applicable information and the APCD should be consulted to determine if there is more up to date information available.

b) A detailed quantitative air emissions analysis at the project scale is not relevant at this time.

c) A qualitative analysis of the air quality impacts should be conducted. A consistency analysis with the CAP will determine if the emissions resulting from development under the Community Plan will be consistent with the emissions projected in the CAP, as described in item 6 of this letter. The qualitative analysis should be based upon criteria such as prevention of urban sprawl and reduced dependence on automobiles. A finding of Class I impacts could be determined qualitatively. The DEIR author should contact the APCD if additional information and guidance is required. All assumptions used should be fully documented in an appendix to the DEIR.

- To aid in the air quality analysis, the traffic study should include the total daily traffic volumes projected. The traffic study results can be used in the qualitative analysis by providing a tool for comparing trip generation between different alternatives and evaluating effectiveness of mitigation methods for reducing traffic impacts.

d) The DEIR should include a range of alternatives that could effectively minimize air quality impacts. A consistency analysis should be performed for each of the proposed alternatives identified, as described above. A qualitative analysis of the air quality impacts should be generated for each of the proposed alternatives. Examples include but are not limited to:

- Flexible zoning to promote mixed use and design standards that protect mixed use.
- Increase the amount of neighborhood scale mixed use.
- Additional density beyond proposed zoning allowances.
- Design standards that require narrow streets and minimum front setbacks on structures.
- Limiting the size of each arterial through the development. This reduces the need for noise barriers such as cinder block walls along roadways, decreases roadway widths, and slows the speed of traffic, creating an atmosphere that encourages walking and bicycling.

e) Mitigation measures to reduce or avoid significant air quality impacts should be recommended. (or) Mitigation measures to reduce air quality impacts from construction and operational phases to a level of insignificance should be specified.

If you would like to receive a copy of an example of a recommended format for the qualitative analysis section on air emissions impacts, contact the APCD Planning Division at 781-5912.

4. Permit Stipulations/Conditions:

It is recommended that you refer to the "CEQA Air Quality Handbook" (the Handbook). If you do not have a copy, it can be accessed on the APCD web page (www.slocleanair.org) in the Business Assistance section, listed under Regulations, or a hardcopy can be requested by contacting the APCD. The Handbook provides information on mitigating emissions from development (Section 5) which should be referenced in the DEIR.

5. Alternatives:

Any alternatives described in the DEIR should involve the same level of air quality analysis as described in bullet items 3.c and 3.d listed above.

6. Reasonably Foreseeable Projects, Programs or Plans:

The most appropriate standard for assessing the significance of potential air quality impacts for Community Plan EIRs is the preparation of a consistency analysis where the proposed project is evaluated against the land use goals, policies, and population projections contained in the CAP. The rationale for requiring the preparation of a consistency analysis is to ensure that the attainment projections developed by the APCD are met and maintained. Failure to comply with the CAP could result in long term air quality impacts. Inability to maintain compliance with the state ozone standard could bear potential negative economic implications for the county's residents and business community. The APCD's CEQA Air Quality Handbook provides guidance for preparing the consistency analysis and recommends evaluation of the following questions:

a) Are the population projections used in the plan or project equal to or less than those used in the most recent CAP for the same area?

b) Is the rate of increase in vehicle trips and miles traveled less than or equal to the rate of population growth for the same area?

c) Have all applicable land use and transportation control measures from the CAP been included in the plan or project to the maximum extent feasible?

The land use and circulation policy areas contained in Appendix E of the APCD's CAP are crucial to the consistency analysis and should be specifically addressed in the DEIR. Implementation of these land use planning strategies is the best way to mitigate air quality impacts at the Community Plan scale.

These land use planning strategies are:

- Planning Compact Communities
- Providing for Mixed Land Use
- Balancing Jobs and Housing
- Circulation Management Policies and Programs
    - Promoting Accessibility in the Transportation System
    - Promoting Walking and Bicycling
    - Parking Management
    - Transportation Demand Management
    - Communication, Coordination and Monitoring

The formation of compact, pedestrian friendly and more economically self-sufficient communities will reduce automobile trip generation rates and trip lengths.

7. Relevant Information:

As mentioned earlier, the Handbook should be referenced in the EIR for determining the significance of impacts and level of mitigation recommended.

8. Further Comments:

GENERAL COMMENTS

As a commenting agency in the California Environmental Quality Act (CEQA) review process for a project, the APCD assesses air pollution impacts from both the construction and operational phases of a project, with separate significant thresholds for each. **Please address the action items contained in this letter that are highlighted by bold and underlined text**.

Demolition Activities

Demolition activities can have potential negative air quality impacts, including issues surrounding proper handling, demolition, and disposal of asbestos containing material (ACM). Asbestos containing materials could be encountered during demolition or remodeling of existing buildings. Asbestos can also be found in utility pipes/pipelines (transite pipes or insulation on pipes). **If utility pipelines are scheduled for removal or relocation; or building(s) are removed or renovated this project may be subject to various regulatory jurisdictions, including the requirements stipulated in the National Emission Standard for Hazardous Air Pollutants (40CFR61, Subpart M - asbestos NESHAP).** These requirements include but are not limited to: 1) notification requirements to the District, 2) asbestos survey conducted by a Certified Asbestos Inspector, and, 3) applicable removal and disposal requirements of identified ACM. Please contact the APCD Compliance Division at 781-5912 for further information.

Naturally Occurring Asbestos

Los Osos is located in a candidate area for Naturally Occurring Asbestos (NOA), which has been identified as a toxic air contaminant by the California Air Resources Board (ARB). Under the ARB Air Toxics Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations, **prior to any grading activities as part of this community plan, the project proponents shall ensure that a geologic evaluation is conducted to determine if NOA is present within the area that will be disturbed. If NOA is not present, an exemption request must be filed with the District (see Attachment 1). If NOA is found at the site, the applicant must comply with all requirements outlined in the Asbestos ATCM.** This may include development of an Asbestos Dust Mitigation Plan and an Asbestos Health and Safety Program for approval by the APCD. Please refer to the APCD web page at *http://www.slocleanair.org/business/asbestos.asp* for more information or contact the APCD Enforcement Division at 781-5912.

Construction Permit Requirements

We are unsure of the types of equipment that may be present during the project's construction phase. Portable equipment, 50 horsepower (hp) or greater, used during construction activities will require California statewide portable equipment registration (issued by the California Air Resources Board) or an APCD permit. The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive. For a more detailed listing, refer to page A-5 in the District's CEQA Handbook.

- Power screens, conveyors, diesel engines, and/or crushers;
- Portable generators and equipment with engines that are 50 hp or greater;
- IC engines;
- Unconfined abrasive blasting operations;
- Concrete batch plants;

- Rock and pavement crushing;
- Tub grinders; and
- Trommel screens.

To minimize potential delays, prior to the start of the project, please contact the APCD Engineering Division at (805) 781-5912 for specific information regarding permitting requirements.

Operational Phase of Projects

Mixed Use Incompatibility

As individual projects move forward it is important to keep in mind that some uses may not be compatible and could result in potential nuisance problems (i.e. odors and/or dust). Therefore, it is essential that individual uses be carefully evaluated prior to issuance of an APCD use permit. The following uses could be problematic if residential quarters are included in the same building.

- Nail Salons
- Dry-cleaners
- Coffee Roasters
- Gasoline Stations
- Furniture refurbishing/refinishing
- Any type of Spray Paint Operation

To minimize potential delays, prior to the start of the project, please contact the APCD Engineering Division at (805) 781-5912 for specific information regarding permitting requirements.

Operational Permit Requirements

Based on the information provided, we are unsure of the types of equipment that may occur under the plan. Operational sources may require APCD permits. The following list is provided as a guide to equipment and operations that may have permitting requirements, but should not be viewed as exclusive. For a more detailed listing, refer to page A-5 in the District's CEQA Handbook.

- New wineries or expanding wineries with the capacity of 26,000 gallons per year or more require a Permit to Operate for fermentation and storage of wine;
- Portable generators and equipment with engines that are 50 hp or greater;
- Chemical product processing and or manufacturing;
- Electrical generation plants or the use of standby generator;
- Food and beverage preparation (primarily coffee roasters);
- Furniture and fixture products;
- Metal industries, fabrication;
- Small scale manufacturing;
- Auto and vehicle repair and painting facilities;
- Fuel dealers;
- Dry cleaning;
- Pipelines;
- Public utility facilities;
- Boilers;

- Internal combustion engines;
- Sterilization units(s) using ethylene oxide and incinerator(s);
- Cogeneration facilities;
- Unconfined abrasive blasting operations;
- Concrete batch plants;
- Rock and pavement crushing;
- Tub grinders; and
- Trommel screens.

To minimize potential delays, prior to the start of the project, please contact the APCD Engineering Division at (805) 781-5912 for specific information regarding permitting requirements.

Again, thank you for the opportunity to comment on this proposal. If you have any questions or comments, feel free to contact me at 781-5912.

Sincerely,

Meghan Field
Air Quality Specialist

MDF/vjk/arr

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April 30, 2015

Kerry Brown
County of San Luis Obispo
Planning and Building Department
976 Osos Street, Room 300
San Luis Obispo, CA 93408

SLOCOG appreciates the opportunity to comment on the Los Osos Community Plan Draft Environmental Impact Report (EIR) scoping. SLOCOG is also providing initial comments on the draft plan document.

Environmental Impact Report scoping comments

The plan has a goal of focusing on infill and mixed use development. The EIR should assess how increased density, intensity, and mixed uses affect vehicle miles traveled (VMT), air pollutants and greenhouse gas (GHG) emissions.

As noted in Appendix D, Table D-6, almost three-fourths of Los Osos's working residents work outside of Los Osos. This suggests a jobs-housing imbalance which impacts VMT. Non-commuting trip mode and length are also affected, to the extent that shopping, leisure, and other destinations are not available locally in Los Osos.

The plan's recommendations will have an effect on future traffic volumes on arterials such as Los Osos Valley Rd. and South Bay Blvd. The extent to which the plan incorporates mixed use and infill development recommendations, complete streets, better street connectivity, enhanced transit service, and TDM will influence those future volumes.

Initial comments on draft plan

Land use and sustainable communities

1. SLOCOG supports LOCP Goal 5, Focus on Infill and Mixed Use Development. SLOCOG's 2014 RTP supports compact, mixed use and infill development in Target Development Areas (Ch. 2, Sustainable Communities Strategy, Policy 5).
2. The Midtown [Sec. 7-5 (F)] and Morro Shores [Sec. 7-5 (J)] areas present opportunities for well-planned development within the Urban Reserve Line that supports regional goals and policies, such as SCS Policy 5.
3. SLOCOG supports economic development (SCS Policy 8) through land use policies that create a thriving commercial note/hub, promote the visitor opportunities in the surrounding area (e.g. interpretive center for surrounding parks), and promote the area's history.

Regional growth forecast

4. **Table D-3: Population Projections.** Add the other 5-year increments to this table (2020, 2025, 2030) for a more complete picture of population projections for Los Osos (Table D-3 on page D-4). To make this table easier to read, provide a column and calculate "Change in Population", so that the reader does not need to do the math (i.e., 18,607 minus 13,908 = 4,699 … "change in population from 2010 to 2035", etc.).
5. **Calculate and provide estimated housing need.** Based on a population per household rate of 2.38 persons per occupied dwelling unit and an 8 percent vacancy rate (for Los Osos), the estimated population increase of 4,700 (from 2010 to 2035) would necessitate approximately 2,146 new homes (assuming the household size and vacancy rate remain constant).

   The math:

   - 4,700 persons (population increase, 2010 to 2035) divided by 2.38 persons (per occupied dwelling unit) = 1,975 new occupied housing units in 2035 (*assuming household size remains constant*)
   - 1,975 (occupied housing units) divided by 0.92 (housing occupancy rate) = 2,147 total new housing needed by 2035 (*assuming vacancy rate remains constant*)

   Please calculate and provide the estimated housing need for the Los Osos community for the planning horizon year of 2035. Please calculate the estimated number of new housing need per year (based on the above math, this would be about 86 new housing units per year).

   The math: 2,147 new housing units needed / 25 years = ~86 new units/year from 2010 to 2035)
6. **Population Projections for Los Osos.** Although the population projections included in Appendix D reference SLOCOG's *2040 Regional Growth Forecast*, SLOCOG staff is skeptical of the significant growth estimated for the community of Los Osos from 2010 to 2035 (*Note: The SLOCOG growth forecast is developed with the inclusion of population, housing, and employment*

estimates for the seven cities and the unincorporated area as a whole; SLOCOG staff then requests that County Planning staff provide detailed population projection figures for the County urban communities, villages, and rural planning areas to disaggregate the unincorporated area population projection. There was no process in place for SLOCOG staff to review and comment on the population projections provided by County staff; SLOCOG staff may consider changes to how the next Regional Growth Forecast is developed).

Los Osos has lost population during each of the last two decades; from 1990 to 2000, the population in Los Osos declined by 0.2 percent; from 2000 to 2010, the population declined by 3.1 percent (see Table D-1 on page D-2). Certainly the loss of population in Los Osos can largely be attributed to a residential building moratorium covering much of the community (due to the lack of a community-wide sewer system). SLOCOG staff recognizes that a completed sewer system will likely allow Los Osos to accommodate additional residential and commercial growth in the community, but given the very limited level of growth in population and housing across the San Luis Obispo region in the past 5+ years, SLOCOG does not believe there will be an average of 86 new housing units constructed per year from 2010 to 2035 in Los Osos. Consider a downward revision of the population projections for the Los Osos community over the planning horizon (to 2035).

Transit and park-and-ride

7. SLOCOG supports Sec. 5.2.3 recommending increased local and regional transit service frequency, service span, and service area; recommending an appropriately-located, well-designed, and accessible park-and-ride lot; and improved bus stop amenities and access.
8. Consider a recommendation for future direct regional transit service to San Luis Obispo. This service is identified as a need on p. 5-13 of the 2014 RTP.
9. SLOCOG supports the inclusion of TDM measures in Sec. 5.3.1. TDM is covered in depth as a way to maximize system efficiency in Ch. 3 of the 2014 RTP, and is also recommended in the 2014 RTP, Ch. 4 – Highways, Streets, and Roads, Strategy 6.

Active Transportation

10. SLOCOG supports the complete streets language on pp. 5-2 and 5-4 to guide Chapter 5's recommendations. This is consistent with 2014 RTP, Ch. 4/HSR, Policy 6. The plan should recommend appropriate complete streets improvements on collector roads, e.g. in Table 5-3.
11. SLOCOG supports multimodal improvements on Los Osos Valley Road. Streetscape enhancements consistent with the Draft LOVR Corridor Study are included in the 2014 RTP, Chapter 6. A road diet to reduce the number of auto lanes on LOVR west of South Bay Blvd. should be evaluated. It is suggested that bike facilities should be designed to separate users from traffic, and pedestrian features, such as crosswalks, should be designed to maximize safety

and comfort. Traffic speed and unsafe pedestrian crossings on LOVR are identified as a need in Table 5-2.

12. SLOCOG supports Safe Routes to School improvements that provide safer and more convenient ways for students to walk and bike to school, minimizing exposure to fast-moving motor vehicle traffic. For example:
    a. Bicycle and pedestrian improvements on El Morro Ave. to provide safer facilities for walking and cycling to Baywood Elementary School, the El Morro Bike Trail, and the RTA Route 12 bus stop at the corner of 7th St.
    b. Improvements for walking and cycling to Monarch Grove Elementary School, including extension of the sidepath on the north side of Pecho Valley Rd. from Monarch Ln. to the school and crossing improvements at Montana Way. There is a 40 mph speed limit outside of the school zone on Pecho Valley Rd., and the curve starting at Pecho Rd. may limit sight distance.

Other

13. Plan for future fiber optic connections by recommended that conduit be placed as part of infrastructure projects, as appropriate.

Please contact me if you have any questions at jbrubaker@slocog.org or 805-788-2104.

Sincerely,

Jeff Brubaker
Transportation Planner

Cc: Richard Murphy
Ronald L. DeCarli
James Worthley
Geoffrey Chiapella

County of San Luis Obispo
PARKS & RECREATION
Nick Franco, Director

THINK OUTSIDE!

April 29, 2015

San Luis Obispo County Planning and Building Department
967 Osos Street
San Luis Obispo, Ca 93408

RE: San Luis Obispo County Department of Parks and Recreation's review of the Los Osos Community Plan Public Review Draft

Thank you for the opportunity to review this Community Plan. The plan appears to be well-organized and researched. Our comments are minimal:

Section	Plan Text	Recommended Action
Throughout document	Provide landscaped medians, landscaped streetscapes, landscaped pedestrian areas and trees.	Consider limiting where landscaping is required. The water shortage in Los Osos is at Level of Severity III and it will be years until resolved. Landscaping is not a good use of the community's limited water supply.
2.2.4	The nearby State Parks also support passive recreation	The nearby State Parks also support active recreation: swimming, surfing, paddle boarding, kayaking and golf, to name a few.
2.2.4	There is little active parkland	Please note that although there is little active "parkland," there are many opportunities for active recreation. All three schools have sports fields that are open to the public and nearby State Parks offer active recreation.
2.4.3	Park and Recreation Element Policies	Attached are Policies from the Park and Recreation Element that are relevant to the Draft Community Plan. Please consider including these in your document.

Thank you for the fine work done so far in completion of this plan. Please feel free to call me to discuss any of our comments or any other topics related to this Community Plan. You can reach me at 805/781-4089.

Sincerely,

Elizabeth Kavanaugh

Elizabeth Kavanaugh, Parks and Trails Planner

Attachment – Park and Recreation Element Policies to be considered for inclusion in the Los Osos Community Plan.

Parks Goal, Objective, and Policies

GOAL #1: An equitable and quality public park system within San Luis Obispo County.

OBJECTIVE A: Maintain and improve as well as provide new and expanded parks and recreation within the County consistent with Chapter 8 Parks and Recreation Project List, and the County's available funding.

POLICIES:

2.1 Provide parks which are aesthetic and consistent with community needs.

2.2 When acquiring parkland or considering the acceptance of a parkland donation give first priority to sites that would:

1. Augment needed park or recreation opportunities as defined in this Element.
2. Serve a good mix of users at a reasonable cost.
3. Provide an appreciable amount of parkland or recreation as a result of being adjacent to a compatible site, such as a school.
4. Allow development in a reasonable time period. The County should not obtain lands that have extensive permit and mitigation requirements that may conflict with the project's proposed use(s) or County policy.
5. Serve an important existing or future need. The site should be able to be developed consistent with that need.
6. Accommodate planned uses in terms of size, location, and existing constraints. The property should be largely devoid of constraints or hazards.
7. Adequately accommodate long-term maintenance.
8. Concentrate park acquisition efforts on sites larger than ten acres, except when (a) the proposal is for a linear park connecting important community components or providing key alternative transportation (such as a link between two schools), (b) a proposed park provides the only available park site in a community, (c) another agency will provide maintenance for the park, or (d) a smaller parcel has outstanding characteristics or unique features.

In general, projects that meet these criteria will be given a high priority.

2.3 When developing parkland:

1. Prepare adequate studies to determine site constraints.
2. Prepare and implement a master plan for the site.
3. Provide reasonable buffers between existing uses and the new park facilities in order to reduce impacts.
4. Use joint use opportunities and adopt-a-park programs as they are available.

2.4 Preserve County parkland for active and passive recreation. Community facilities, which have little to no recreational component, shall be placed outside of an existing or proposed park.

2.5 Encourage private development of parklands and facilities, to assist with meeting park needs.

Recreation Goal, Objectives and Policies

GOAL #2: Recreation that serves the County's residents and visitors, various age groups, varying economic situations and physical abilities.

GENERAL RECREATION:

OBJECTIVE B: Provide new and expanded recreation within the County consistent with Chapter 8 Parks and Recreation Project List, and the County's available funding.

POLICIES:

3.1 To provide an equitable distribution of recreation throughout the County, County Parks should attempt to provide new or expanded recreation (as a first priority) in those Planning Areas that have:

1. Experienced faster growth rates.
2. Very limited existing park acreage and/or recreation opportunities in relation to population density. When assessing existing park acreage and/or recreation opportunities consider parks and recreation offered by all entities provided that entity offers comparable service to the County's unincorporated population.

3.2 Provide recreation at the County's parks consistent with community needs.

3.3 Seek joint use agreements, volunteer and other partnership opportunities to augment recreational services and reduce project costs.

3.4 When considering the acceptance or development of capital intensive recreational facilities such as community centers, indoor sports centers, and aquatic centers, attempt to get numerous entities involved to split the cost of acquisition, design, development, and maintenance.

3.5 Provide recreation programs at the County's owned or leased facilities which provide adequate cost recovery.

3.6 Recognize that many legitimate recreation activities are possible even through they may not be provided by the County. From bowling alleys to off-road vehicle courses, private enterprise offers a greater potential to supply various recreation needs. The County will work to assist private enterprise in providing these activities while at the same time it will work to ensure that they are appropriately located so as not to necessarily impact the environment or negatively burden surrounding land uses.

Funding Acquisition, Development & Maintenance Goals, Objectives, and Policies

GOAL #6: A variety of funding sources to expand, acquire, develop, and maintain the County's parks, recreation opportunities and natural areas.

OBJECTIVE H: Develop a funding mechanism that provides for acquisition, development and maintenance of parks, recreation, natural areas, and coastal access, taking advantage of collaborative agreements and volunteers.

POLICIES:

6.1 List projects in the County's Capital Improvement Program.

6.2 Develop a funding program that balances community need with available revenues. Use an economic consultant to review existing costs and provide recommendations for a viable funding program. This program should consider the formation of a parks district.

6.3 The County should enact and maintain an ordinance pursuant to the Quimby Act that will require a dedication of land and/or payment of fees in lieu thereof, for park and recreational purposes as a condition to the approval of a tentative tract or parcel map for residential subdivisions.

MAINTENANCE

GOAL #7: High quality park maintenance that is cost effective and environmentally sensitive.

OBJECTIVE I: Provide new or expanded public facilities consistent with available maintenance funding.

POLICIES:

6.4 Prior to accepting or developing a new park, County Parks shall determine the long-term maintenance and operating costs associated with the proposed project. The County shall not develop the park until adequate funds are available for maintenance.

6.5 Ensure that County parks receive a net benefit to the County park and recreation system when a park or recreation facility is impacted by private or quasi-public infrastructure and other easements.

6.6 Require new development adjacent to parks, recreation and natural areas to be designed to function with and enhance park resources. Adjacent, new private development should not detract from or use adjacent park or natural area resources for their own private use.

6.7 Conduct project maintenance consistent with a facility's master plan.

6.8 When maintaining park, recreation and natural area facilities attempt to minimize signs and other structures that may impact the aesthetics of the facility.

6.9 County Parks should not undertake maintenance responsibilities better handled by another body. For example, facilities within private development (such as mini-parks, basin parks, mitigation areas, open space, and short segments of trails) shall be maintained by a homeowner's association or a similar entity.

6.10 If County maintenance funding is inadequate to provide all park types, concentrate new park acquisition on regional park lands since these parks serve the largest number of users and are the least costly for the County to maintain.

6.11 Use methods within County Parks` facilities that reduce maintenance costs, such as the use of drought tolerant landscaping, solar oriented structures, structures with natural lighting during daylight hours, and stainless steel fixtures which have a longer lifetime and are more resilient to vandalism.

6.12 Continue to assess ways of providing additional maintenance funding including:

1. The periodic review of user fees.
2. Ways to cut staff time.
3. Additional ways to manage and use volunteers.
4. Assessing options such as the formation of a parks district.

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August 25, 2015

Kerry Brown, Dept. of Planning and Building
976 Osos Street, Room 300
San Luis Obispo, CA 93408

RE: Revisions to the LOCP

Dear Ms. Brown,

The current draft of the Los Osos Community Plan, Chapter 7.3 "Communitywide Standards" Parts A through D, will allow unsustainable development over the Los Osos Basin for the reasons we explain below. The standards do not comply with the Local Coastal Policy (LCP) and Coastal Zone Land Use Ordinance.

> **Policy 1: Preservation of Groundwater Basins.** The long-term integrity of groundwater basins within the coastal zone shall be protected. The safe yield of the groundwater basin, including return and retained water, shall not be exceeded except as part of a conjunctive use or resource management program which assures that the biological productivity of aquatic habitats are not significantly adversely impacted. [THIS POLICY SHALL BE IMPLEMENTED AS A STANDARD.]

> **CZLUO Section 23.04.430: Availability of Water Supply and Sewage Disposal Services.** A land use permit for new development that requires water or disposal of sewage shall not be approved unless the applicable approval body determines that there is adequate water and sewage disposal capacity ~~available to serve the proposed development, as provided by this~~ section. Subsections a. and b. of this section give priority to infilling development within the urban service line over development proposed between the USL and URL. In communities with limited water and sewage disposal service capacities as defined by Resource Management System alert levels II or III:
>
> a. A land use permit for development to be located between an urban services line and urban reserve line shall not be approved unless the approval body first finds that the capacities of available water supply and sewage disposal services are sufficient to accommodate both existing development, and allowed development on presently-vacant parcels within the urban services line.
>
> Development outside the urban services line shall be approved only if it can be served by adequate on-site water and sewage disposal systems, except that development of a single-family dwelling on an existing parcel may connect to a community water system if such service

exists adjacent to the subject parcel and lateral connection can be accomplished without trunk line extension.

(The emphases above are added.)

Chapter 7.3 of the LOCP also doesn't conform to Special Condition 6 of the LOWWP Coastal Development Permit:

6. Wastewater Service to Undeveloped Properties. Wastewater service to undeveloped properties within the service area shall be prohibited unless and until the Estero Area Plan is amended to identify appropriate and sustainable buildout limits, and any appropriate mechanisms to stay within such limits, based on conclusive evidence indicating that adequate water is available to support development of such properties without adverse impacts to ground and surface waters, including wetlands and all related habitats.

(Emphasis added.)

The primary reason the current draft of the LOCP does not conform to these policies and requirements is that it will allow further development over the Los Osos Basin without first establishing that the Basin can support that development. The Los Osos Basin has a severe seawater intrusion problem that has rendered much of the Basin unusable for drinking water over the last 40 years. A 2014 seawater update revealed that intrusion accelerated since 2005 despite large cutbacks in pumping, and there is no physical evidence at this point to show seawater intrusion can be stopped or the Basin become a sustainable water source for the current population. This is particularly true with the severe drought and increasing signs of climate change (e.g., reduced rainfall, higher temperatures and sea level rise).

The LOCP, as written, would allow County officials to approve building based on modeling, predictions of yield increases and program benefits rather than actual physical evidence (i.e., well tests over time). *Los Osos Groundwater Basin Plan* (Basin Plan). All development ultimately increases water demand by hardening demand above existing conservation levels. Reversing the seawater intrusion to preserve the Basin requires that all existing residents and businesses must conserve as much as possible.

Modeling has overestimated safe yields by 40% and underestimated the rate of seawater intrusion by more than 400% since its first use in the 1980's. Current Basin Plan modeling continues to have substantial potential for error. Based on rainfall reduction from the present drought, the USEPA Climate Change Evaluation of the Basin in 2013 and a review of modeling uncertainties done by one of the model's authors in 2010, modeling uncertainties can result in overestimates of safe yields and program benefits by 50% or more. Thus, reliance on the current model could result in further harm and possible loss of the Basin. The Basin Plan points out that the harmful effects of overestimating yield may not be seen until it is too late to do anything about it (see Page 137).

We've included relevant sections of the LOCP, with underlined text showing wording that should be deleted. If there are any sections with similar wording/provisions, they should also be changed/deleted as needed to support the standard we recommend based on physical evidence the Basin has sufficient water to sustainably support that development. We note that the introduction to Chapter 7 indicates that the standards will trump the Coastal Zone Land Use Ordinance (CZLUO) if a conflict exists.

7.3 Communitywide Standards

The following standards apply throughout the Los Osos urban area in all land use categories.

B. Resource Capacity and Service Availability.

2. Water and Wastewater Service Capacity, Land Divisions. New land divisions, other than condominium conversions, shall not be approved unless the Review Authority makes the following findings:

b. The development can be accommodated by the sustainable yield of the Los Osos Groundwater Basin without causing seawater intrusion, as identified in the Basin Plan for the Los Osos Groundwater Basin.

(Note: This wording is vague and allows unsustainable development since the wording could be interpreted to mean the proposed development does not cause "new" or "further" seawater intrusion into the Basin, e.g., "water neutral" development. The wording also allows unsustainable development by referring to "sustainable yield...as identified in the Basin Plan." In the Basin Plan the "sustainable yield" for the Basin (and for different program combinations) is estimated by Basin modeling. However, modeling overstates sustainable yield due to a flawed definition and a failure to account for impacts and uncertainties in modeling that can reduce yields. "Sustainable yield" as defined in the Basin Plan allows seawater intrusion to advance further, and the Basin Plan recommends subtracting 20% from estimates to reverse seawater intrusion. The Basin Plan also claims the same 20% reduction in estimates will account for uncertainties. However, that same 20% cannot do both—define a true sustainable yield and account for uncertainties. At least another 20% would have to be subtracted to account for uncertainties (assuming the Basin Plan's arbitrary estimate of 20% is accurate). In fact, a review of the model in 2010 indicated modeling can *overstate sustainable yields by 50% or more. The failure of the Basin Plan "sustainable yield" to identify a condition that does not result in undesirable effects (the definition of "sustainable yield") is clearly shown by present conditions. Total Basin production now is at about the current estimated "sustainable yield" of 2570 AFY (with Infrastructure Program A in place); however, seawater intrusion is continuing to move rapidly inland with no signs of slowing (See Page 285 of Basin Plan).*

D. Los Osos Groundwater Basin.

1. Basin Plan compliance. Development of land uses that use water from the Los Osos Groundwater Basin shall be prohibited until the Board of Supervisors determines that ~~successful~~ completion and implementation of specific programs identified in the Los Osos Basin Plan ("Basin Plan") have occurred. The following programs from the Basin Plan must be successfully completed and implemented to address existing resource constraints prior to development of new dwelling units or commercial uses:

c. Program "M" – Groundwater Monitoring

d. Program "E" – Urban Efficiency

e. Program "U" – Urban Water Reinvestment

f. Program "A" – Infrastructure Program A

g. Program "P" – Wellhead Protection

h. At least one of the following additional programs:

- Program "B" – Infrastructure Program B
- Program "C" – Infrastructure Program C
- Program "S" – Supplemental Water Program

(Note: The benefits of these programs (e.g., a reduction in water use with the Urban Efficiency program) does not assure new development will have a sustainable water supply since the sustainable yield of the Basin will not be known until seawater intrusion is stopped and reversed. Program B (moving more pumping to the Upper Aquifer) and Program C (moving more pumping inland) are predicted to increase yields, but the prediction is based on modeling, with predicted increases easily offset by uncertainties. Regarding Program S, Supplemental Water, the Basin Plan defines it as rainwater/stormwater capture and reuse or desalination (see Page 247). The Basin Plan rejects the first option, so Program S would most likely be desalination. Allowing new development upon completion of a desalination facility does not avoid unsustainable growth because the sustainable yield of the Basin and its ability to support the current population is still not established. In fact, the present population may require 250 AFY of additional water for a sustainable Basin—especially with the drought and potential for future droughts (climate change). If Basin sustainability is not established before new development is allowed—and seawater intrusion continues to advance—the Basin could be lost. Replacing the Basin with desalinated water may not be feasible economically or otherwise. The Basin Plan estimates that a facility to replace just one aquifer (Zone D) would cost over $100 million.)

2. **Amendments to Title 26.** Development of new dwelling units that require water from the Los Osos Groundwater basin (sic) shall be prohibited until 1) a growth limitation for the Los Osos Groundwater Basin is established in Section 26.01.070.k of the Growth Management Ordinance to reflect current basin conditions and the successful completion of the programs identified in the Basin Plan and 2) the Board of Supervisors determines that the specific programs identified in the Basin Plan and required by these standards as a prerequisite for additional development have been successfully completed and implemented and are effective, as follows.

   i. The Basin Plan program(s) shall be completed to the satisfaction of the Director of Public Works, in consultation with the Los Osos Groundwater Basin Watermaster.

   j. As part of the review for Basin Plan effectiveness, the County shall consider data collected as part of the Groundwater Monitoring program (Program "M"). If the data indicate that completed programs have not been effective in reducing groundwater demand, increasing the perennial safe yield or facilitating seawater retreat as predicted in the Basin Plan, then the development of new residential units shall be limited accordingly.

(Note: This language does not require the County to make decisions solely on the basis of data (e.g., well tests). It requires simply that the County "consider" data "As part of the review." It also does not require the County to deny approval of development if data show no benefits from programs--the County only has to limit "new residential units." Thus, the language allows the County to approve development with any signs of program success (e.g., evidence that some reduced water use has resulted from conservation). Moreover, it allows County supervisors to approve significant development even without signs of program success--if they believe programs have the potential to reduce seawater intrusion ("have been effective in...facilitating seawater intrusion retreat"). This language sets a very low bar for approving development. Basically, it allows County Supervisors to approve significant development as soon as the Public Works Director believes program implementation is complete, a decision that could be based on a number of

criteria, including available funding. Because the language does not require conclusive evidence (well tests over time), it allows unsustainable development, and it defeats the two "Immediate Goals" of the Basin Plan:"1. Halt, or to the extent possible, reverse seawater intrusion into the Basin. 2. Provide sustainable water supplies for existing residential, commercial, and community and agricultural development overlying the Basin" (Emphasis added) (Page 21). With the present language, any benefit from programs could be immediately offset by added development resulting in no improvement in Basin conditions.

k. As part of the review for Basin Plan effectiveness, the Board of Supervisors shall consider trends in commercial development and commercial water demand to ensure that such demand is not growing beyond a proportional relationship with the community's population. (See Page 7-2 & 7-3.)

(Note: This language allows the Board of Supervisors to approve commercial development at any time based on whatever standards they devise—also see note above. Commercial development places greater demand on the water supply and Basin, and should not be exempt from a standard that requires hard evidence the Basin can support the added development.)

3. Growth limitation standards. Development of new residential units that use water from the Los Osos Groundwater Basin shall be prohibited until successful implementation of all programs identified in Subsection D.1. Once this has been achieved, Section 26.01.070.k of the Growth Management Ordinance may be modified to allow development of new residential units as follows:

a. **Implementation of one additional program.**

(i) **Implementation of Program "B".** Upon successful implementation of Program "B," an additional 1,230 residential units may be constructed within the Los Osos Groundwater Basin.

(ii) **Implementation of Program "C".** Upon successful implementation of Program "C," an additional 680 residential units may be constructed within the Los Osos Groundwater Basin.

(iii) **Implementation of Program "S".** Upon successful implementation of Program "S," assuming groundwater desalination producing 250 acre- feet per year, 550 residential units may be constructed within the Los Osos Groundwater Basin.

(Note: The above section shows the substantial development that could occur solely on the basis of the Public Works Director deciding programs are complete, without conclusive physical evidence the Basin can support that development.)

Conclusion and Recommended Standard

Prior to approval of any new development, conclusive evidence (well tests over time) must show that seawater intrusion has reversed and ample freshwater exists in the Basin to support the current population plus additional population. The Basin Plan provides a Water Level Metric and Chloride Metric to measure the effects of programs on seawater intrusion and assess Basin sustainability. These metrics provide measurable evidence, but not conclusive evidence of Basin sustainability. As a result, we are recommending that the standard for new development be based on these metrics, but include additional criteria. (The "Basin Yield Metric" is based on modeling, so should not be used as a basis for approving development for the reasons we have explained.)

Recommended Standard

All new development over the Basin shall be prohibited until the Basin Plan Water Level and Chloride Metrics have been exceeded, showing the Basin has ample reserves to sustainably support additional development while maintaining ample storage capacity to weather droughts and climate change. As an additional minimum requirement, no wells, including private wells and test/observation wells, shall have a chloride level above 100 mg/l or water levels below 9.5 feet above mean sea level (amsl) in the Lower Aquifer, 13.5 feet amsl in the deep aquifer, and 6 feet amsl in the Upper Aquifer. The amount of new development allowed will depend on the extent to which these minimum requirements are exceeded, indicating excess Basin capacity, and conservative estimates, based on water use and other data, of the amount of development the added capacity will support. (Note: More test wells must be installed in several locations, e.g., along the bay, to ensure seawater intrusion is stopped and reversed throughout the Basin.)

Conclusion

Given the severe threat seawater intrusion poses to future of the Basin and community due to 40 years of overdraft—and due to the lack of feasible alternatives for the sole water source and vital freshwater source for Morro Bay National Estuary habitat -- the standard for new development must be conclusive physical evidence that the Basin will support development without further harm to the Basin or harm to habitat. This requires extensive data from well tests over time showing seawater intrusion is reversed, the Basin is sustainable with the current population, and ample additional water exists in the Basin to support new development with a margin of safety (e.g., ample water storage to avoid harm to the Basin during droughts). The Basin Plan metrics (other than the Yield Metric) provide a good basis for this, when augmented with further physical evidence confirming seawater intrusion is reversed throughout the Basin and freshwater levels are high enough above the levels needed to reverse seawater intrusion, support additional development, and maintain the resilience needed to provide a reliable water source in the face of climate change and other eventualities.

The Sierra Club does not support application in the LOCP of Title 19 and County-wide Conservation ordinances, which support development that attempts to "offsets" water use with off-site conservation measures. In the long run--and oftentimes in the short run—conservation programs that allow further development increase extractions by hardening demand above conservation water use levels. As a result, they are not effective in establishing basin sustainability, especially for Basins experiencing seriously declining water tables or severe seawater intrusion. In these basins, existing residents must reduce water use as much as possible through strong conservation programs that do not involve development.

Thank you for your attention to these issues,

Andrew Christie
Chapter Director

PLANNING & BUILDING
COUNTY OF SAN LUIS OBISPO

COMMENTS ON THE LOS OSOS COMMUNITY PLAN ENVIRONMENTAL IMPACT REPORT (EIR) SCOPING MEETING

The following types of comments are the most helpful for scoping the EIR:

- Content of the EIR.
- Methods on how environmental issues are analyzed.
- Potential Alternatives to the project.
- Potential mitigation measures that would avoid or reduce environmental issues.

Lighting should be limited to the very minimum to protect public safety i.e. traffic intersections. People enjoy seeing the night sky unfettered by light pollution. Los Osos is special in its ability to see the night sky. We treasure that as very important. The EIR could adopt the lighting standards set by the International Dark-Sky Assn. (http://www.darksky.org/) also, the Colorado Plateau Dark Sky Cooperative: nathan ament@nps.gov. (435) 719-2349

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PLANNING & BUILDING
COUNTY OF SAN LUIS OBISPO

COMMENTS ON THE LOS OSOS COMMUNITY PLAN ENVIRONMENTAL IMPACT REPORT (EIR) SCOPING MEETING

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- Methods on how environmental issues are analyzed.
- Potential Alternatives to the project.
- Potential mitigation measures that would avoid or reduce environmental issues.

I live on a dead end street right off the bay (1100 Ninth). We have incredible run-off into the bay from Santa Ysabel. The county tried to put a catchment basin in but it has not been successful. There is way too much sand which comes with the (rain) water and the basin fills up. Also too much water in the past has killed some of the beautiful ancient oaks at the end of the street. A very extensive basin was put in by the owners of this former piece of county property. But the street still fills with sand and right over the sewer pump. It's about 16" deep in places. Some sort of catchment needs to be made on Santa Ysabel to resolve this problem. Come take a look!

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PLANNING & BUILDING
COUNTY OF SAN LUIS OBISPO

COMMENTS ON THE LOS OSOS COMMUNITY PLAN ENVIRONMENTAL IMPACT REPORT (EIR) SCOPING MEETING

The following types of comments are the most helpful for scoping the EIR:

- Content of the EIR.
- Methods on how environmental issues are analyzed.
- Potential Alternatives to the project.
- Potential mitigation measures that would avoid or reduce environmental issues.

PS - The EIR topics on the screen are too small to read!

Read: "Anthropogenic warming . . . . etc" by N. Diffenbaugh, D. Swain, and D. Touma.

If their data interpretation is even somewhat or mostly correct, the buildout plans discussed in the Community Plan may be difficult at best. So, the Community Plan will have to be "mediated" in the below-market sell-off of vacant lots. (Personally, I hope it rains like mad!)

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Anthropogenic warming has increased drought risk in California

Noah S. Diffenbaugh[a,b,1], **Daniel L. Swain**[a], **and Danielle Touma**[a]

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Edited by Jane Lubchenco, Oregon State University, Corvallis, OR, and approved January 30, 2015 (received for review November 22, 2014)

California is currently in the midst of a record-setting drought. The drought began in 2012 and now includes the lowest calendar-year and 12-mo precipitation, the highest annual temperature, and the most extreme drought indicators on record. The extremely warm and dry conditions have led to acute water shortages, groundwater overdraft, critically low streamflow, and enhanced wildfire risk. Analyzing historical climate observations from California, we find that precipitation deficits in California were more than twice as likely to yield drought years if they occurred when conditions were warm. We find that although there has not been a substantial change in the probability of either negative or moderately negative precipitation anomalies in recent decades, the occurrence of drought years has been greater in the past two decades than in the preceding century. In addition, the probability that precipitation deficits co-occur with warm conditions and the probability that precipitation deficits produce drought have both increased. Climate model experiments with and without anthropogenic forcings reveal that human activities have increased the probability that dry precipitation years are also warm. Further, a large ensemble of climate model realizations reveals that additional global warming over the next few decades is very likely to create ∼100% probability that any annual-scale dry period is also extremely warm. We therefore conclude that anthropogenic warming is increasing the probability of co-occurring warm–dry conditions like those that have created the acute human and ecosystem impacts associated with the "exceptional" 2012–2014 drought in California.

drought | climate extremes | climate change detection | event attribution | CMIP5

The state of California is the largest contributor to the economic and agricultural activity of the United States, accounting for a greater share of population (12%) (1), gross domestic product (12%) (2), and cash farm receipts (11%) (3) than any other state. California also includes a diverse array of marine and terrestrial ecosystems that span a wide range of climatic tolerances and together encompass a global biodiversity "hotspot" (4). These human and natural systems face a complex web of competing demands for freshwater (5). The state's agricultural sector accounts for 77% of California water use (5), and hydroelectric power provides more than 9% of the state's electricity (6). Because the majority of California's precipitation occurs far from its urban centers and primary agricultural zones, California maintains a vast and complex water management, storage, and distribution/conveyance infrastructure that has been the focus of nearly constant legislative, legal, and political battles (5). As a result, many riverine ecosystems depend on mandated "environmental flows" released by upstream dams, which become a point of contention during critically dry periods (5).

California is currently in the midst of a multiyear drought (7). The event encompasses the lowest calendar-year and 12-mo precipitation on record (8), and almost every month between December 2011 and September 2014 exhibited multiple indicators of drought (Fig. S1). The proximal cause of the precipitation deficits was the recurring poleward deflection of the cool-season storm track by a region of persistently high atmospheric pressure, which steered Pacific storms away from California over consecutive seasons (8–11). Although the extremely persistent high pressure is at least a century-scale occurrence (8), anthropogenic global warming has very likely increased the probability of such conditions (8, 9).

Despite insights into the causes and historical context of precipitation deficits (8–11), the influence of historical temperature changes on the probability of individual droughts has—until recently—received less attention (12–14). Although precipitation deficits are a prerequisite for the moisture deficits that constitute "drought" (by any definition) (15), elevated temperatures can greatly amplify evaporative demand, thereby increasing overall drought intensity and impact (16, 17). Temperature is especially important in California, where water storage and distribution systems are critically dependent on winter/spring snowpack, and excess demand is typically met by groundwater withdrawal (18–20). The impacts of runoff and soil moisture deficits associated with warm temperatures can be acute, including enhanced wildfire risk (21), land subsidence from excessive groundwater withdrawals (22), decreased hydropower production (23), and damage to habitat of vulnerable riparian species (24).

Recent work suggests that the aggregate combination of extremely high temperatures and very low precipitation during the 2012–2014 event is the most severe in over a millennium (12). Given the known influence of temperature on drought, the fact that the 2012–2014 record drought severity has co-occurred with record statewide warmth (7) raises the question of whether long-term warming has altered the probability that precipitation deficits yield extreme drought in California.

Significance

California ranks first in the United States in population, economic activity, and agricultural value. The state is currently experiencing a record-setting drought, which has led to acute water shortages, groundwater overdraft, critically low streamflow, and enhanced wildfire risk. Our analyses show that California has historically been more likely to experience drought if precipitation deficits co-occur with warm conditions and that such confluences have increased in recent decades, leading to increases in the fraction of low-precipitation years that yield drought. In addition, we find that human emissions have increased the probability that low-precipitation years are also warm, suggesting that anthropogenic warming is increasing the probability of the co-occurring warm–dry conditions that have created the current California drought.

Author contributions: N.S.D., D.L.S., and D.T. designed research, performed research, contributed new reagents/analytic tools, analyzed data, and wrote the paper.

The authors declare no conflict of interest.

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This article contains supporting information online at www.pnas.org/lookup/suppl/doi:10.1073/pnas.1422385112/-/DCSupplemental.

Results

We analyze the "Palmer" drought metrics available from the US National Climatic Data Center (NCDC) (25). The NCDC Palmer metrics are based on the Palmer Drought Severity Index (PDSI), which uses monthly precipitation and temperature to calculate moisture balance using a simple "supply-and-demand" model (26) (*Materials and Methods*). We focus on the Palmer Modified Drought Index (PMDI), which moderates transitions between wet and dry periods (compared with the PDSI) (27). However, we note that the long-term time series of the PMDI is similar to that of other Palmer drought indicators, particularly at the annual scale (Figs. S1 and S2).

Because multiple drought indicators reached historic lows in July 2014 (Figs. S1–S3), we initially focus on statewide PMDI, temperature, and precipitation averaged over the August–July 12-mo period. We find that years with a negative PMDI anomaly exceeding –1.0 SDs (hereafter "1-SD drought") have occurred approximately twice as often in the past two decades as in the preceding century (six events in 1995–2014 = 30% of years; 14 events in 1896–1994 = 14% of years) (Fig. 1*A* and Fig. S4). This increase in the occurrence of 1-SD drought years has taken place without a substantial change in the probability of negative precipitation anomalies (53% in 1896–2014 and 55% in 1995–2014) (Figs. 1*B* and 2 *A* and *B*). Rather, the observed doubling of the occurrence of 1-SD drought years has coincided with a doubling of the frequency with which a negative precipitation year produces a 1-SD drought, with 55% of negative precipitation years in 1995–2014 co-occurring with a –1.0 SD PMDI anomaly, compared with 27% in 1896–1994 (Fig. 1 *A* and *B*).

Most 1-SD drought years have occurred when conditions were both dry (precipitation anomaly < 0) and warm (temperature anomaly > 0), including 15 of 20 1-SD drought years during 1896–2014 (Fig. 2*A* and Fig. S4) and 6 of 6 during 1995–2014 (Fig. 2*B* and Fig. S4). Similarly, negative precipitation anomalies are much more likely to produce 1-SD drought if they co-occur with a positive temperature anomaly. For example, of the 63 negative precipitation years during 1896–2014, 15 of the 32 warm–dry years (47%) produced 1-SD drought, compared with only 5 of the 31 cool–dry years (16%) (Fig. 2*A*). (During 1896–1994, 41% of warm–dry years produced 1-SD droughts, compared with 17% of cool–dry years.) The probability that a negative precipitation anomaly co-occurs with a positive temperature anomaly has increased recently, with warm–dry years occurring more than twice as often in the past two decades (91%) as in the preceding century (42%) (Fig. 1*B*).

All 20 August–July 12-mo periods that exhibited a –1.0 SD PMDI anomaly also exhibited a –0.5 SD precipitation anomaly (Fig. 1*B* and 2*E*), suggesting that moderately low precipitation is prerequisite for a 1-SD drought year. However, the occurrence of –0.5 SD precipitation anomalies has not increased in recent years (40% in 1896–2014 and 40% in 1995–2014) (Fig. 2 *A* and *B*). Rather, these moderate precipitation deficits have been far more likely to produce 1-SD drought when they occur in a warm year. For example, during 1896–2014, 1-SD drought occurred in 15 of the 28 years (54%) that exhibited both a –0.5 SD precipitation anomaly and a positive temperature anomaly, but in only 5 of the 20 years (25%) that exhibited a –0.5 SD precipitation anomaly and a negative temperature anomaly (Fig. 2*A*). During 1995–2014, 6 of the 8 moderately dry years produced 1-SD drought (Fig. 1*A*), with all 6 occurring in years in which the precipitation anomaly exceeded –0.5 SD and the temperature anomaly exceeded 0.5 SD (Fig. 1*C*).

Taken together, the observed record from California suggests that (*i*) precipitation deficits are more likely to yield 1-SD PMDI droughts if they occur when conditions are warm and (*ii*) the occurrence of 1-SD PMDI droughts, the probability of precipitation deficits producing 1-SD PMDI droughts, and the probability of precipitation deficits co-occurring with warm conditions have all been greater in the past two decades than in the preceding century.

These increases in drought risk have occurred despite a lack of substantial change in the occurrence of low or moderately low precipitation years (Figs. 1*B* and 2 *A* and *B*). In contrast, statewide warming (Fig. 1*C*) has led to a substantial increase in warm conditions, with 80% of years in 1995–2014 exhibiting a positive temperature anomaly (Fig. 2*B*), compared with 45% of years in 1896–2014 (Fig. 2*A*). As a result, whereas 58% of moderately dry years were warm during 1896–2014 (Fig. 2*A*) and 50% were warm during 1896–1994, 100% of the 8 moderately dry years in 1995–2014 co-occurred with a positive temperature anomaly (Fig. 2*B*). The observed statewide warming (Fig. 1*C*) has therefore substantially increased the probability that when moderate precipitation deficits occur, they occur during warm years.

The recent statewide warming clearly occurs in climate model simulations that include both natural and human forcings ("Historical" experiment), but not in simulations that include only natural forcings ("Natural" experiment) (Fig. 3*B*). In particular, the Historical and Natural temperatures are found to be different at the 0.001 significance level during the most recent 20-, 30-, and 40-y periods of the historical simulations (using the block bootstrap resampling applied in ref. 28). In contrast, although the Historical experiment exhibits a slightly higher mean annual precipitation (0.023 significance level), there is no statistically

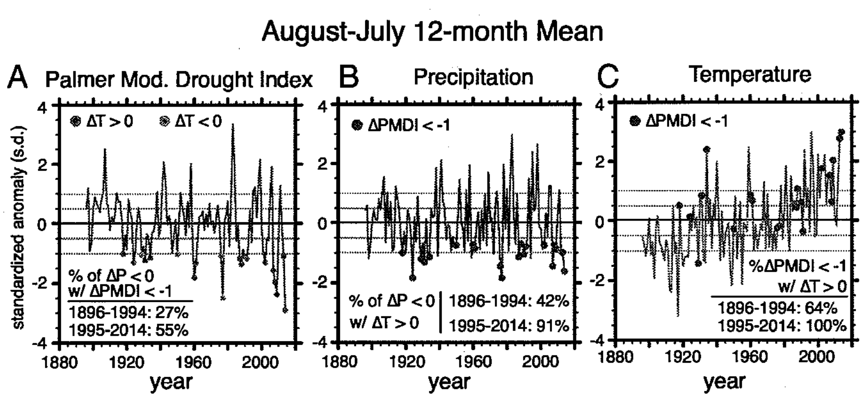

Fig. 1. Historical time series of drought (*A*), precipitation (*B*), and temperature (*C*) in California. Values are calculated for the August–July 12-mo mean in each year of the observed record, beginning in August 1895. In each year, the standardized anomaly is expressed as the magnitude of the anomaly from the long-term annual mean, divided by the SD of the detrended historical annual anomaly time series. The PMDI is used as the primary drought indicator, although the other Palmer indicators exhibit similar historical time series (Figs. S1 and S2). Circles show the years in which the PMDI exhibited a negative anomaly exceeding –1.0 SDs, which are referred to as 1-SD drought years in the text.

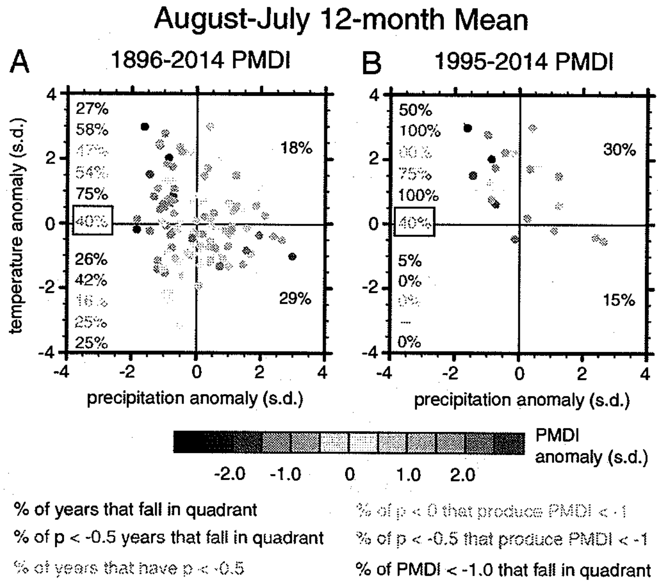

Fig. 2. Historical occurrence of drought, precipitation, and temperature in California. Standardized anomalies are shown for each August–July 12-mo period in the historical record (calculated as in Fig. 1). Anomalies are shown for the full historical record (*A*) and for the most recent two decades (*B*). Percentage values show the percentage of years meeting different precipitation and drought criteria that fall in each quadrant of the temperature–precipitation space. The respective criteria are identified by different colors of text.

significant difference in probability of a –0.5 SD precipitation anomaly (Fig. 3 *A* and *C*). However, the Historical experiment exhibits greater probability of a –0.5 SD precipitation anomaly co-occurring with a positive temperature anomaly (0.001 significance level) (Fig. 3*D*), suggesting that human forcing has caused the observed increase in probability that moderately dry precipitation years are also warm.

The fact that the occurrence of warm and moderately dry years approaches that of moderately dry years in the last decades of the Historical experiment (Fig. 3 *B* and *C*) and that 91% of negative precipitation years in 1995–2014 co-occurred with warm anomalies (Fig. 1*B*) suggests possible emergence of a regime in which nearly all dry years co-occur with warm conditions. We assess this possibility using an ensemble of 30 realizations of a single global climate model [the National Center for Atmospheric Research (NCAR) Community Earth System Model (CESM1) Large Ensemble experiment ("LENS")] (29) (*Materials and Methods*). Before ~1980, the simulated probability of a warm–dry year is approximately half that of a dry year (Fig. 4*B*), similar to observations (Figs. 1*B* and 2). However, the simulated probability of a warm–dry year becomes equal to that of a dry year by ~2030 of RCP8.5. Likewise, the probabilities of co-occurring 0.5, 1.0 and 1.5 SD warm–dry anomalies become approximately equal to those of 0.5, 1.0, and 1.5 SD dry anomalies (respectively) by ~2030 (Fig. 4*B*).

The probability of co-occurring extremely warm and extremely dry conditions (1.5 SD anomaly) remains greatly elevated throughout the 21st century (Fig. 4*B*). In addition, the number of multiyear periods in which a –0.5 SD precipitation anomaly co-occurs with a 0.5 SD temperature anomaly more than doubles between the Historical and RCP8.5 experiments (Fig. 4*A*). We find similar results using a 12-mo moving average (Fig. 4*C*). As with the August–July 12-mo mean (Fig. 4*B*), the probability of a dry year is approximately twice the probability of a warm–dry year for all 12-mo periods before ~1980 (Fig. 4*C*). However, the occurrence of warm years (including +1.5 SD temperature anomalies) increases after ~1980, reaching 1.0 by ~2030. This increase implies a transition to a permanent condition of ~100% risk that any negative—or extremely negative—12-mo precipitation anomaly is also extremely warm.

The overall occurrence of dry years declines after ~2040 (Fig. 4*C*). However, the occurrence of extreme 12-mo precipitation deficits (–1.5 SD) is greater in 2006–2080 than in 1920–2005 (<0.03 significance level). This detectable increase in extremely low-precipitation years adds to the effect of rising temperatures and contributes to the increasing occurrence of extremely warm–dry 12-mo periods during the 21st century.

All four 3-mo seasons likewise show higher probability of co-occurring 1.5 SD warm–dry anomalies after ~1980, with the probability of an extremely warm–dry season equaling that of an extremely dry season by ~2030 for spring, summer, and autumn, and by ~2060 for winter (Fig. 4*D*). In addition, the probability of a –1.5 SD precipitation anomaly increases in spring ($P < 0.001$) and autumn ($P = 0.01$) in 2006–2080 relative to 1920–2005, with spring occurrence increasing by ~75% and autumn occurrence increasing by ~44%—which represents a substantial and statistically significant increase in the risk of extremely low-precipitation events at both margins of California's wet season. In contrast, there is no statistically significant difference in the probability of a –1.5 SD precipitation anomaly for winter.

Discussion

A recent report by Seager et al. (30) found no significant long-term trend in cool-season precipitation in California during the 20th and early 21st centuries, which is consistent with our

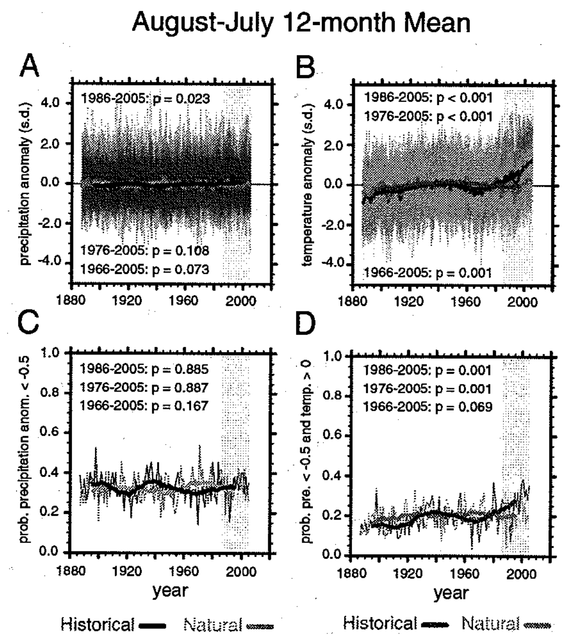

Fig. 3. Influence of anthropogenic forcing on the probability of warm–dry years in California. Temperature and precipitation values are calculated for the August–July 12-mo mean in each year of the CMIP5 Historical and Natural forcing experiments (*Materials and Methods*). The *Top* panels (*A* and *B*) show the time series of ensemble-mean standardized temperature and precipitation anomalies. The *Bottom* panels (*C* and *D*) show the unconditional probability (across the ensemble) that the annual precipitation anomaly is less than –0.5 SDs, and the conditional probability that both the annual precipitation anomaly is less than –0.5 SDs and the temperature anomaly is greater than 0. The bold curves show the 20-y running mean of each annual time series. The CMIP5 Historical and Natural forcing experiments were run until the year 2005. *P* values are shown for the difference between the Historical and Natural experiments for the most recent 20-y (1986–2005; gray band), 30-y (1976–2005), and 40-y (1966–2005) periods of the CMIP5 protocol. *P* values are calculated using the block bootstrap resampling approach of ref. 28 (*Materials and Methods*).

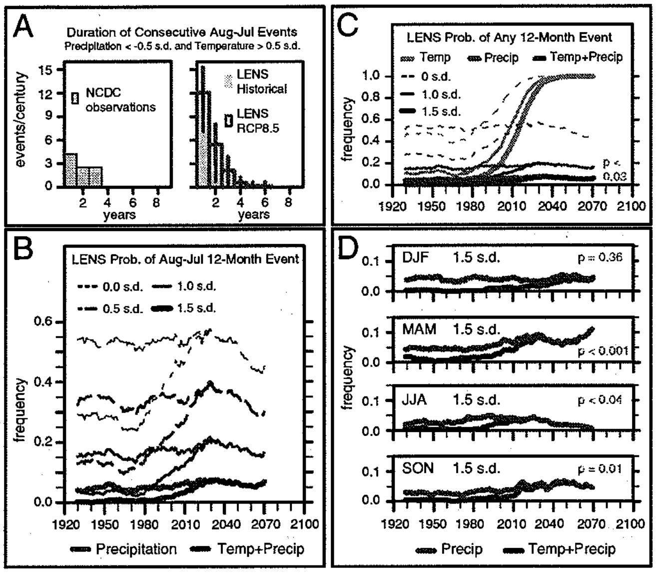

Fig. 4. Projected changes in the probability of co-occurring warm–dry conditions in the 21st century. (*A*) Histogram of the frequency of occurrence of consecutive August–July 12-mo periods in which the 12-mo precipitation anomaly is less than –0.5 SDs and the 12-mo temperature anomaly is at least 0.5 SDs, in historical observations and the LENS large ensemble experiment. (*B*) The probability that a negative 12-mo precipitation anomaly and a positive 12-mo temperature anomaly equal to or exceeding a given magnitude occur in the same August–July 12-mo period, for varying severity of anomalies. (*C*) The probability that a negative precipitation anomaly and a positive temperature anomaly equal to or exceeding a given magnitude occur in the same 12-mo period, for all possible 12-mo periods (using a 12-mo running mean; see *Materials and Methods*), for varying severity of anomalies. (*D*) The unconditional probability of a –1.5 SD seasonal precipitation anomaly (blue curve) and the conditional probability that a –1.5 SD seasonal precipitation anomaly occurs in conjunction with a 1.5 SD seasonal temperature anomaly (red curve), for each of the four 3-mo seasons. Time series show the 20-y running mean of each annual time series. *P* values are shown for the difference in occurrence of –1.5 SD precipitation anomalies between the Historical period (1920–2005) and the RCP8.5 period (2006–2080).

findings. Further, under a scenario of strongly elevated greenhouse forcing, Neelin et al. (31) found a modest increase in California mean December–January–February (DJF) precipitation associated with a local eastward extension of the mean subtropical jet stream west of California. However, considerable evidence (8–11, 31–33) simultaneously suggests that the response of northeastern Pacific atmospheric circulation to anthropogenic warming is likely to be complex and spatiotemporally inhomogeneous, and that changes in the atmospheric mean state may not be reflective of changes in the risk of extreme events (including atmospheric configurations conducive to precipitation extremes). Although there is clearly value in understanding possible changes in precipitation, our results highlight the fact that efforts to understand drought without examining the role of temperature miss a critical contributor to drought risk. Indeed, our results show that even in the absence of trends in mean precipitation—or trends in the occurrence of extremely low-precipitation events—the risk of severe drought in California has already increased due to extremely warm conditions induced by anthropogenic global warming.

We note that the interplay between the existence of a well-defined summer dry period and the historical prevalence of a substantial high-elevation snowpack may create particular susceptibility to temperature-driven increases in drought duration and/or intensity in California. In regions where precipitation exhibits a distinct seasonal cycle, recovery from preexisting drought conditions is unlikely during the characteristic yearly dry spell (34). Because California's dry season occurs during the warm summer months, soil moisture loss through evapotranspiration (ET) is typically high—meaning that soil moisture deficits that exist at the beginning of the dry season are exacerbated by the warm conditions that develop during the dry season, as occurred during the summers of 2013 and 2014 (7).

Further, California's seasonal snowpack (which resides almost entirely in the Sierra Nevada Mountains) provides a critical source of runoff during the low-precipitation spring and summer months. Trends toward earlier runoff in the Sierra Nevada have already been detected in observations (e.g., ref. 35), and continued global warming is likely to result in earlier snowmelt and increased rain-to-snow ratios (35, 36). As a result, the peaks in California's snowmelt and surface runoff are likely to be more pronounced and to occur earlier in the calendar year (35, 36), increasing the duration of the warm-season low-runoff period (36) and potentially reducing montane surface soil moisture (37). Although these hydrological changes could potentially increase soil water availability in previously snow-covered regions during the cool low-ET season (34), this effect would likely be outweighed by the influence of warming temperatures (and decreased runoff) during the warm high-ET season (36, 38), as well as by the increasing occurrence of consecutive years with low precipitation and high temperature (Fig. 4*A*).

The increasing risk of consecutive warm–dry years (Fig. 4*A*) raises the possibility of extended drought periods such as those found in the paleoclimate record (14, 39, 40). Recent work suggests that record warmth could have made the current event the most severe annual-scale drought of the past millennium (12). However, numerous paleoclimate records also suggest that the region has experienced multidecadal periods in which most years were in a drought state (14, 39, 41, 42), albeit less acute than the current California event (12, 39, 41). Although multidecadal ocean variability was a primary cause of the megadroughts of the last millenium (41), the emergence of a condition in which there is ~100% probability of an extremely warm year (Fig. 4) substantially increases the risk of prolonged drought conditions in the region (14, 39, 40).

A number of caveats should be considered. For example, ours is an implicit approach that analyzes the temperature and precipitation conditions that have historically occurred with low PMDI years, but does not explicitly explore the physical processes that produce drought. The impact of increasing temperatures on the processes governing runoff, baseflow, groundwater, soil moisture, and land-atmosphere evaporative feedbacks over both the historical period and in response to further global warming remains a critical uncertainty (43). Likewise, our analyses of anthropogenic forcing rely on global climate models that do not resolve the topographic complexity that strongly influences California's precipitation and temperature. Further investigation using high-resolution modeling approaches that better resolve the boundary conditions and fine-scale physical processes (44–46) and/or using analyses that focus on the underlying large-scale climate dynamics of individual extreme events (8) could help to overcome the limitations of simulated precipitation and temperature in the current generation of global climate models.

Conclusions

Our results suggest that anthropogenic warming has increased the probability of the co-occurring temperature and precipitation conditions that have historically led to drought in California. In addition, continued global warming is likely to cause a transition to a regime in which essentially every seasonal, annual, and multiannual precipitation deficit co-occurs with historically warm conditions. The current warm–dry event in California—as well as historical observations of previous seasonal, annual, and multiannual warm–dry events—suggests such a regime would substantially increase the risk of severe impacts on human and natural systems. For example, the projected increase in extremely low precipitation and extremely high temperature during spring and autumn has substantial implications for snowpack water storage, wildfire risk, and terrestrial ecosystems (47). Likewise, the projected increase in annual and multiannual warm–dry periods implies increasing risk of the acute water shortages, critical groundwater overdraft, and species extinction potential that have been experienced during the 2012–2014 drought (5, 20).

California's human population (38.33 million as of 2013) has increased by nearly 72% since the much-remembered 1976–1977 drought (1). Gains in urban and agricultural water use efficiency have offset this rapid increase in the number of water users to the extent that overall water demand is nearly the same in 2013 as it was in 1977 (5). As a result, California's per capita water use has declined in recent decades, meaning that additional short-term water conservation in response to acute shortages during drought conditions has become increasingly challenging. Although a variety of opportunities exist to manage drought risk through long-term changes in water policy, management, and infrastructure (5), our results strongly suggest that global warming is already increasing the probability of conditions that have historically created high-impact drought in California.

Materials and Methods

We use historical time series of observed California statewide temperature, precipitation, and drought data from the National Oceanic and Atmospheric Administration's NCDC (7). The data are from the NCDC "nClimDiv" divisional temperature–precipitation–drought database, available at monthly time resolution from January 1895 to the present (7, 25). The NCDC nClimDiv database includes temperature, precipitation, and multiple Palmer drought indicators, aggregated at statewide and substate climate division levels for the United States. The available Palmer drought indicators include PDSI, the Palmer Hydrological Drought Index (PHDI), and PMDI.

PMDI and PHDI are variants of PDSI (25–27, 48, 49). PDSI is an index that measures the severity of wet and dry anomalies (26). The NCDC nClimDiv PDSI calculation is reported at the monthly scale, based on monthly temperature and precipitation (49). Together, the monthly temperature and precipitation values are used to compute the net moisture balance, based on a simple supply-and-demand model that uses potential evapotranspiration (PET) calculated using the Thornthwaite method. Calculated PET values can be very different when using other methods (e.g., Penman–Monteith), with the Thornthwaite method's dependence on surface temperature creating the potential for overestimation of PET (e.g., ref. 43). However, it has been found that the choice of methods in the calculation of PET does not critically influence the outcome of historical PDSI estimates in the vicinity of California (15, 43, 50). In contrast, the sensitivity of the PET calculation to large increases in temperature could make the PDSI inappropriate for calculating the response of drought to high levels of greenhouse forcing (15). As a result, we analyze the NCDC Palmer indicators in conjunction with observed temperature and precipitation data for the historical period, but we do not calculate the Palmer indicators for the future (for future projections of the PDSI, refer to refs. 15 and 40).

Because the PDSI is based on recent temperature and precipitation conditions (and does not include human demand for water), it is considered an indicator of "meterological" drought (25). The PDSI calculates "wet," "dry," and "transition" indices, using the wet or dry index when the probability is 100% and the transition index when the probability is less than 100% (26). Because the PMDI always calculates a probability-weighted average of the wet and dry indices (27), the PDSI and PMDI will give equal values in periods that are clearly wet or dry, but the PMDI will yield smoother transitions between wet and dry periods (25). In this work, we use the PMDI as our primary drought indicator, although we note that the long-term time series of the PMDI is similar to that of the PDSI and PHDI, particularly at the annual scale considered here (Figs. S1 and S2).

We analyze global climate model simulations from phase 5 of the Coupled Model Intercomparison Project (CMIP5) (51). We compare two of the CMIP5 multimodel historical experiments (which were run through 2005): (*i*) the Historical experiment, in which the climate models are prescribed both anthropogenic and nonanthropogenic historical climate forcings, and (*ii*) the Natural experiment, in which the climate models are prescribed only the nonanthropogenic historical climate forcings. We analyze those realizations for which both temperature and precipitation were available from both experiments at the time of data acquisition. We calculate the temperature and precipitation values over the state of California at each model's native resolution using all grid points that overlap with the geographical borders of California, as defined by a high-resolution shapefile (vector digital data obtained from the US Geological Survey via the National Weather Service at www.nws.noaa.gov/geodata/catalog/national/html/us_state.htm).

We also analyze NCAR's large ensemble ("LENS") climate model experiment (29). The LENS experiment includes 30 realizations of the NCAR CESM1. This large single-model experiment enables quantification of the uncertainty arising from internal climate system variability. Although the calculation of this "irreducible" uncertainty likely varies between climate models, it exists independent of uncertainty arising from model structure, model parameter values, and climate forcing pathway. At the time of acquisition, LENS results were available for 1920–2005 in the Historical experiment and 2006–2080 in the RCP8.5 (Representative Concentration Pathway) experiment. The four RCPs are mostly indistinguishable over the first half of the 21st century (52). RCP8.5 has the highest forcing in the second half of the 21st century and reaches ~4 °C of global warming by the year 2100 (52).

Given that the ongoing California drought encompasses the most extreme 12-mo precipitation deficit on record (8) and that both temperature and many drought indicators reached their most extreme historical values for California in July 2014 (7) (Fig. 1 and Figs. S1 and S2), we use the 12-mo August–July period as one period of analysis. However, because severe conditions can manifest at both multiannual and subannual timescales, we also analyze the probability of occurrence of co-occurring warm and dry conditions for multiannual periods, for all possible 12-mo periods, and for the winter (DJF), spring (March–April–May), summer (June–July–August), and autumn (September–October–November) seasons.

We use the monthly-mean time series from NCDC to calculate observed time series of statewide 12-mo values of temperature, precipitation, and PMDI. Likewise, we use the monthly-mean time series from CMIP5 and LENS to calculate simulated time series of statewide 12-mo and seasonal values of temperature and precipitation. From the time series of annual-mean values for each observed or simulated realization, we calculate (*i*) the baseline mean value over the length of the record, (*ii*) the annual anomaly from the baseline mean value, (*iii*) the SD of the detrended baseline annual anomaly time series, and (*iv*) the ratio of each individual annual anomaly value to the SD of the detrended baseline annual anomaly time series. (For the 21st-century simulations, we use the Historical simulation as the baseline.) Our time series of standardized values are thereby derived from the time series of 12-mo annual (or 3-mo seasonal) mean anomaly values that occur in each year.

For the multiannual analysis, we calculate consecutive occurrences of August–July 12-mo values. For the analysis of all possible 12-mo periods, we generate the annual time series of each 12-mo period (January–December, February–January, etc.) using a 12-mo running mean. For the seasonal analysis, we generate the time series by calculating the mean of the respective 3-mo season in each year.

We quantify the statistical significance of differences in the populations of different time periods using the block bootstrap resampling approach of ref. 28. For the CMIP5 Historical and Natural ensembles, we compare the populations of the August–July values in the two experiments for the 1986–2005, 1976–2005, and 1966–2005 periods. For the LENS seasonal analysis, we compare the respective populations of DJF, March–April–May, June–July–August, and September–October–November values in the 1920–2005 and 2006–2080 periods. For the LENS 12-mo analysis, we compare the populations of 12-mo values in the 1920–2005 and 2006–2080 periods, testing block lengths up to 16 to account for temporal autocorrelation out to 16 mo for the 12-mo running mean data. (Autocorrelations beyond 16 mo are found to be negligible.)

Throughout the text, we consider drought to be those years in which negative 12-mo PMDI anomalies exceed −1.0 SDs of the historical interannual PMDI variability. We stress that this value is indicative of the variability of the annual (12-mo) PMDI, rather than of the monthly values (compare Fig. 1 and Figs. S1 and S2). We consider "moderate" temperature and precipitation anomalies to be those that exceed 0.5 SDs ("0.5 SD") and "extreme" temperature and precipitation anomalies to be those that exceed 1.5 SDs ("1.5 SD").

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Lo community plan April 13 meeting

Barbara Rosenthal to: kbrown@co.slo.ca.us 04/16/2015 10:33 PM

From: Barbara Rosenthal <barbara@rosenthalart.com>
To: "kbrown@co.slo.ca.us" <kbrown@co.slo.ca.us>

>
> Kerry,
> Here a few ideas for mitigation of water loss and habitat preservation, and other concerns that I hope are relevant. It seems that all of this needs to include existing as well as whatever limited new construction will be allowed.
> WATER
> Capturing as much water as possible to return to aquifer or to water soil stabilizing plants:
> Look at numbered street north of Santa ysabel for runoff directly into Bay.
> Plan meetings and offer assistance for water capture from roofs (even condensation adds up out here) Are metal roofs an advantage here? If so, can county offset part of the cost?
> Encourage graywater for gardening
> Encourage recirculating pumps for hot water
> ALLOW second or third bathrooms in older homes for convenience of residents. Restrict water use per occupant , not number of facilities. It gets harder To wait as we get older.
> Is there a maximum occupancy?

> GENERAL
>
> Allow additions before totally new construction to preserve open space and allow multigenerational housing. This will lessen many impacts.
>
> CIRCULATION
>
> Make more through walk/bicycle paths where we have dead end streets. For vehicles, finish Palisades. The library and community center are now very poorly connected with Baywood. This would save gas and make Pine Street safer. I dont see the type of street/ bike path in use in SLO being very useful here, but maybe. Which streets would it be used on?
>
> SAFETY
>
> Can the fire department tell us if illuminating intersections or street signs on LOVR would be safer? While I dont like street lights in residential areas, finding streets off LOVR at night can be tricky and it may not be safe to go too slow. This is true both east and west of "town."

One more: reward native plant landscaping, esp near open spaces.
>
> Thank you for listening.
> Barbara Rosenthal
>
> RosenthalArt.com

PLANNING & BUILDING
COUNTY OF SAN LUIS OBISPO

COMMENTS ON THE LOS OSOS COMMUNITY PLAN ENVIRONMENTAL IMPACT REPORT (EIR) SCOPING MEETING

The following types of comments are the most helpful for scoping the EIR:

- Content of the EIR.
- Methods on how environmental issues are analyzed.
- Potential Alternatives to the project.
- Potential mitigation measures that would avoid or reduce environmental issues.

1. Add pre-Historical and Natural Historical Elements to the EIR,
2. Bring in user groups to analyze viability of proposed elements:
   i.e., a) SLO Bike Coalition look at Bike circulation in LO,
   b) Focus groups such as middle and high school students to obtain their views as the future leaders in LO.
3. Remove eucalyptus trees on county lands and keep them from returning. (actually remove all invasive plants on county lands)
   Use the removed plants/trees to fuel a biomass energy plant to power the library
4. Utilize industry-accepted "Smart Growth / Livable Communities" features throughout,
5. Construct an all-ages swimming pool (partially covered) with bike/ped paths
   leading to the pool

PLANNING & BUILDING
COUNTY OF SAN LUIS OBISPO

COMMENTS ON THE LOS OSOS COMMUNITY PLAN ENVIRONMENTAL IMPACT REPORT (EIR) SCOPING MEETING

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- Potential Alternatives to the project.
- Potential mitigation measures that would avoid or reduce environmental issues.

Aesthetics and Safety
- side walks on busy streets - both sides of street
9th street → ramona → 4th street
2nd street, El Moro
Fast cars and blissed out LO walkers are not a good ~~combination~~ combination
- under ground utilities not only for new construction but old construction - $$$
WATER - converting septic to water collection!!!

NAME: Alice Hamrick
ADDRESS: 1610 5th St.
CITY: LOS OSOS
EMAIL: ahamrick@calpoly.edu
PHONE: 805 458 2826
STATE: CA ZIP: 93402

International Dark Sky Association
www.darksky.org be an "International Dark Sky Community"
possible example "The Town of Beverly Shores, Indiana"

Appendix B

Air Quality and Greenhouse Gas Emissions Technical Reports

Air Quality Analysis for the Los Osos Community Plan Update, County of San Luis Obispo, California

Prepared for
San Luis Obispo County
Department of Planning and Building
County Government Center, Room 300
San Luis Obispo, CA 93408

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RECON Number 7773
June 2, 2016

Jessica Fleming, Environmental Analyst

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3: CalEEMod Output – Year 2035 Estero Area Plan Emissions

Acronyms

°F	degrees Fahrenheit
μg/m³	micrograms per cubic meter
AAQS	Ambient Air Quality Standards
AB	Assembly Bill
ADT	average daily trips
AQIA	Air Quality Impact Analysis
ARB	Air Resources Board
Basin	South Central Coast Air Basin
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAP	Clean Air Plan
CARB	California Air Resources Board
CBACT	Construction Best Available Control Technology
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	carbon monoxide
County	County of Santa Barbara
DPM	diesel particulate matter
EIR	Environmental Impact Report
H_2S	hydrogen sulfide
LOCP	Los Osos Community Plan
LOS	Level of Service
NAAQS	National Ambient Air Quality Standards
ND	Negative Declaration
NO_2	nitrogen dioxide
NOx	oxides of nitrogen
Pb	lead
PM_{10}	particulate matter with an aerodynamic diameter of 10 microns or less
$PM_{2.5}$	particulate matter with an aerodynamic diameter of 2.5 microns or less
ppb	parts per billion
ppm	parts per million
ROG	reactive organic gas
SIP	State Implementation Plan
SLOAPCD	San Luis Obispo Air Pollution Control District
SLOCOG	San Luis Obispo Council of Governments
SO_2	sulfur dioxide
SO_x	oxides of sulfur
TACs	toxic air contaminants
TCM	Transportation Control Measures
U.S. EPA	United States Environmental Protection Act
URL	Urban Reserve Line
USC	United States Code
USL	Urban Services Line
VMT	vehicle miles traveled
VOC	volatile organic compounds

Executive Summary

The Los Osos Community Plan (LOCP) functions as a General Plan and Local Coastal Plan guiding future development within the Los Osos community in San Luis Obispo County. The LOCP is part of the Estero Area Plan and located within the Estero Planning Area. The primary objective of the LOCP is to establish a framework for the orderly growth and development of Los Osos. Additionally, the plan is intended to be consistent with strategic growth principles and other land use policies established in the County General Plan.

This report discusses potential air quality impacts associated with the LOCP. Impacts were assessed in accordance with guidance provided by the San Luis Obispo Air Pollution Control District (SLOAPCD). A summary of the findings is provided below.

Consistency with Regional Air Quality Plans

The Clean Air Plan (CAP) is the attainment plan for the County that addresses how State standards will be met. According to the California Environmental Quality Act Air Quality Handbook, when determining if a project is consistent with the CAP, the analysis should addressed population projections, increases in vehicle trips and vehicle miles traveled (VMT), and the incorporation of transportation control measures (TCMs).

The LOCP would exceed the San Luis Obispo Council of Governments (SLOCOG) growth projections. Additionally, buildout of the LOCP would result in an average annual growth rate that exceeds the SLOCOG growth rate. While the LOCP would decrease the development potential when compared to the adopted Estero Area Plan, because development facilitated by the LOCP would exceed SLOCOG growth forecasts, it would be inconsistent with the CAP population growth assumptions. Additionally, the rate of increase in vehicle trips and VMT would exceed the growth rate assumed in the CAP. The LOCP would decrease trips and trip lengths when compared to the adopted plan; however, because the rate of increase in vehicle trips and mile traveled would exceed the rate of population growth assumed by the CAP, the LOCP would be inconsistent with the CAP as it relates to transportation emissions. The LOCP incorporates TCMs and land use strategies that are consistent with the CAP. While the TCMs would reduce emissions, because the LOCP would be inconsistent with the CAP population growth assumptions it could result in an obstruction of the timely obtainment of the National Ambient Air Quality Standards and California Ambient Air Quality Standards.

Implementation of mitigation measure AQ-1 would reduce impacts to the extent feasible. However, population projection inconsistencies from LOCP buildout would remain and no mitigation measures are feasible to sufficiently reduce VMT to be consistent with the CAP. Impacts related to consistency with the CAP would remain significant and unavoidable.

Temporary Construction Impacts

The exact number and timing of all development projects that could occur under the LOCP are unknown. Because the number, type, and size of construction projects that could occur at any time is unknown and because the LOCP would accommodate additional growth over the existing condition, it is reasonable to conclude that some major construction activity could be occurring at any given time over the buildout horizon of the LOCP. Large construction projects or multiple construction projects occurring simultaneously would have the potential to exceed construction emission thresholds established by the SLOAPCD. Implementation of mitigation measures AQ-2(a) through (g) would reduce these temporary impacts to a level less than significant.

Long-term Operational Impacts

Significant operational impacts are identified by determining whether the LOCP would exceed the population projections used in the CAP, whether the rate of increase in vehicle trips and miles traveled generated by the LOCP would exceed the rate of population growth, and whether all applicable land use and transportation control measures from the CAP have been included in the LOCP. Although the LOCP would incorporate TCMs and land use strategies that are consistent with the CAP, because development facilitated by the LOCP would exceed SLOCOG growth and VMT forecasts, the LOCP would be inconsistent with the CAP population growth and VMT assumptions. Implementation of mitigation measures AQ-1, AQ-3(a), and AQ-3(b) would reduce impacts, but impacts would remain significant and unavoidable under the LOCP.

Sensitive Receptors

Localized carbon monoxide (CO) concentration is a direct function of motor vehicle activity at signalized intersections. Under specific meteorological conditions, CO concentrations may reach unhealthy levels with respect to local sensitive land uses. CO hot-spots almost exclusively occur near intersections with level of service (LOS) E or worse in combination with relatively high traffic volumes on all roadways. Based on this analysis, the LOCP would not result in any signalized intersections with LOS E or worse. Therefore, no CO hot-spots would occur as a result of the LOCP and localized air quality impacts would be less than significant.

California Air Resources Board (CARB) guidelines indicate that siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 or more vehicles/day should be avoided when possible. Based on a review of the transportation analysis, traffic volumes on all roadways are projected to be less than 22,000 average daily trips (ADT) at buildout of the LOCP. Therefore, sensitive receptors sited within 500 feet of roadways in the LOCP area would not be expected to be exposed to a substantial sources of diesel particulate matter. Impacts associated with sensitive receptors would be less than significant.

Odors

During construction, potential odor sources associated with the project include diesel exhaust associated with construction equipment. Diesel exhaust may be noticeable temporarily; however, construction activities would be temporary. Therefore, the diesel exhaust odors would not result in significant impacts.

The LOCP would not introduce land uses that would generate substantial odor. Implementation of the LOCP would not create operational-related objectionable odors affecting a substantial number of people. Impacts associated with odor would be less than significant.

1.0 Introduction

The purpose of this report is to assess potential short-term local and regional air quality impacts resulting from development of the project.

Air pollution affects all Southern Californians. Effects can include the following:

- Increased respiratory infections
- Increased discomfort
- Missed days from work and school
- Increased mortality
- Polluted air also damages agriculture and our natural environment.

The project is located in San Luis Obispo County, which is within the South Central Coast Air Basin (Basin), which also includes Santa Barbara and Ventura Counties. The Basin is one of 15 air basins that geographically divide the state of California. The county is currently classified as a state non-attainment area for ozone and particulate matter less than 10 microns (PM_{10}). The eastern portion of the county is also currently classified as a federal non-attainment area for ozone; however, the portion of the county containing the Los Osos Community Plan (LOCP) area is classified as a federal attainment area for ozone.

Air quality impacts can result from the construction and operation of the project. Construction impacts are short-term and result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries. Operation impacts can occur on two levels: regional impacts resulting from growth-inducing development, or local hot-spot effects stemming from sensitive receivers being placed close to highly congested roadways. In the case of this project, operation impacts are primarily due to emissions to the Basin from mobile sources associated with vehicular travel along the roadways within the project area.

The analysis of impacts is based on national and State Ambient Air Quality Standards (AAQS) and is assessed in accordance with the guidelines, policies, and standards established by the San Luis Obispo County Air Pollution Control District (SLOAPCD).

2.0 Project Description

The LOCP would function as a General Plan and Local Coastal Plan guiding future development within the Los Osos community. The planning area is part of the Estero Area Plan and located within the Estero Planning Area. The LOCP establishes a vision for the future of Los Osos and defines the nature of future development in the Los Osos planning area, and provides development standards that in many cases are site-specific.

The unincorporated community of Los Osos is located along the coast in the central portion of San Luis Obispo County, generally south of and adjacent to Morro Bay and its associated estuary (Figure 1). Los Osos is approximately 4 miles south of the City of Morro Bay, across the bay/estuary, and approximately 10 miles west of the City of San Luis Obispo, at the western end of Los Osos Valley, a broad, relatively flat agricultural area formed by Los Osos Creek. However, the Los Osos Community Plan does not include all land or development within the U.S. Census-defined Los Osos, but only encompasses the land within the identified Urban Reserve Line (URL) (Figure 2). The area within the existing URL includes about 3,087 acres (4.8 square miles). The proposed project envisions minor changes to the URL boundary, including 17 acres added along Turri Road beyond the end of the eastern terminus of Santa Ysabel Avenue, but another 65-acre area adjacent to Montana de Oro State Park removed, resulting in a net decrease of about 48 acres overall.

The existing Urban Services Line (USL) is smaller than, and completely within the URL, and with some exceptions, is generally focused on the urbanized portions of the community west of South Bay Boulevard. Under the LOCP, the USL will be contracted to some extent in certain areas, so the proposed USL will be smaller than the existing boundary.

Los Osos is primarily residential in nature. There are two primary commercial areas, the downtown area or Central Business District centered around Los Osos Valley Road and the Baywood Commercial Area centered along Second Street. These areas are focused either on local community-servicing businesses and office space, or on supporting the regional tourist economy. The downtown area is more locally focused, with grocery stores, restaurants, banks, and offices, while the Baywood community is more tourist-oriented, with some hotels, and recreational businesses along with other businesses that serve the local neighborhoods.

The primary objective the LOCP is to establish a framework for the orderly growth and development of Los Osos. Additionally, the plan is intended to be consistent with strategic growth principles and other land use policies established in the County of San Luis Obispo (County) General Plan.

Table 1 summarizes the existing, adopted, and proposed land use distribution and development potential within each land use category under the proposed LOCP. Figure 3 shows the LOCP proposed changes. Development under the LOCP could result in an additional 1,861 residential units and up to 364,000 square feet of commercial space, for a total of 8,182 residential units and 1,034,300 square feet of non-residential space (floor area) within the LOCP study area within the 20-year plan horizon (by 2035). Buildout of the LOCP would accommodate an additional 4,429 residents over existing conditions for a total of 19,473 residents.

Project Location

RECON

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FIGURE 1

Regional Location

Image Source: USDA FSA NAIP (flown June 2014)

FIGURE 2

Aerial Photograph of LOCP Vicinity

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Map Source: Los Osos Community Plan Public Review Draft, January 30, 2015

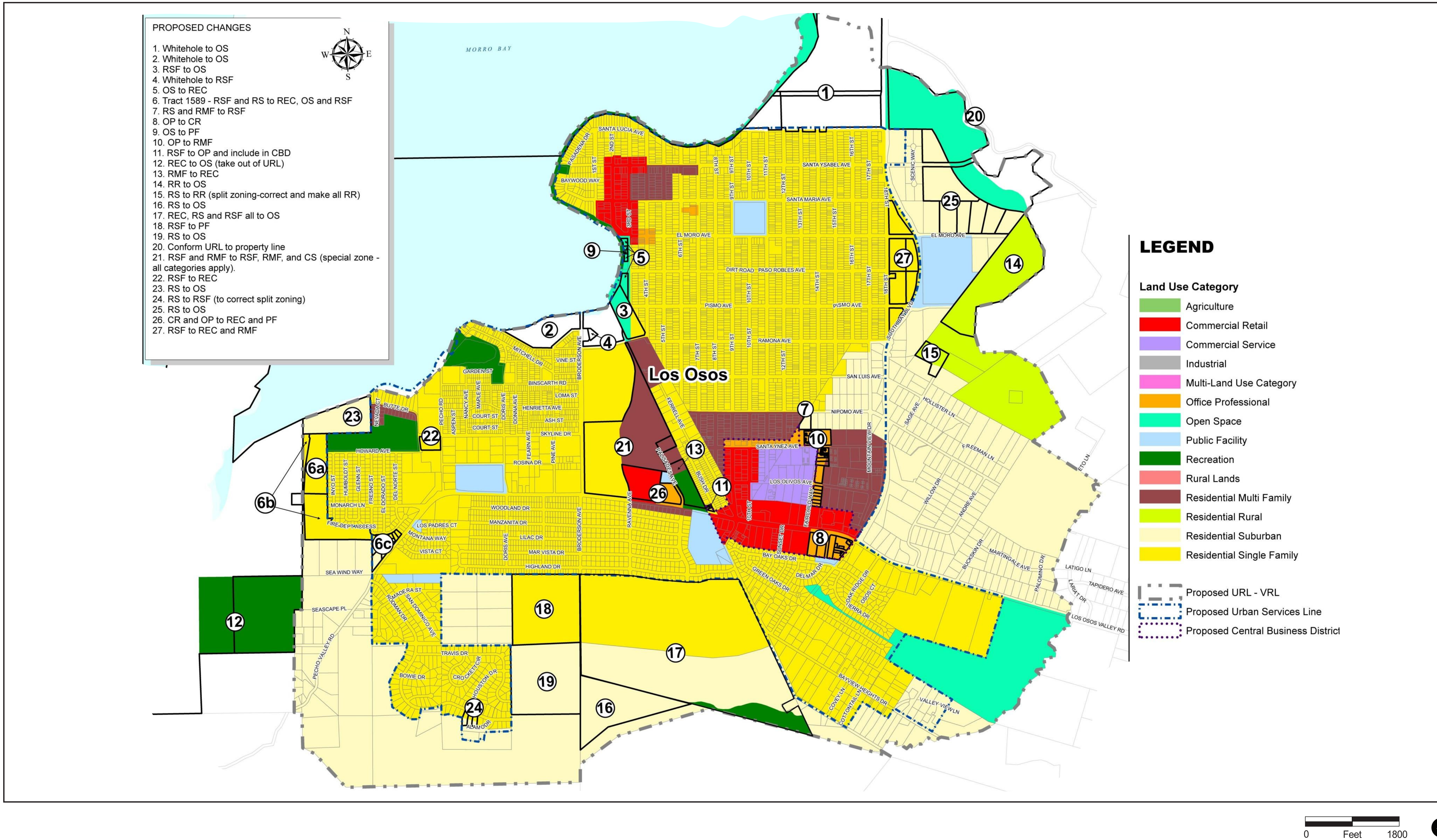

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FIGURE 3
LOCP Proposed Changes

Table 1 Existing and Proposed Land Use Distribution					
		Adopted LOCP		Proposed LOCP	
Land Use	Existing	Buildout	Net Increase	Buildout	Net Increase
Residential (dwelling units)					
Single Family	5,426	7,264	1,838	6,487	1,061
Multi-Family	895	1,864	969	1,695	800
TOTAL	**6,321**	**9,128**	**2,807**	**8,182**	**1,861**
Non-Residential (square feet)					
Retail	439,200	669,045	229,845	668,100	228,900
Commercial/Service	221,000	176,779	-44,221	284,600	63,600
Office	10,100	214,261	204,161	61,600	51,500
Recreation	0	24,975	24,975	10,000	10,000
Public Facilities/Recreation	0	0	0	10,000	10,000
TOTAL	**670,300**	**1,085,060**	**414,760**	**1,034,300**	**364,000**

3.0 Regulatory Framework

Motor vehicles are leading source of air pollution in the county (SLOAPCD 2016a). In addition to these sources, other mobile pollution sources include farming operations, construction equipment, trains, and airplanes. Emission standards for mobile sources are established by state and federal agencies, such as the California Air Resources Board (CARB) and the United States Environmental Protection Agency (U.S. EPA). Reducing mobile source emissions requires the technological improvement of existing mobile sources and the examination of future mobile sources, such as those associated with new or modification projects (e.g., retrofitting older vehicles with cleaner emission technologies). The State of California has developed statewide programs to encourage cleaner cars and cleaner fuels. The regulatory framework described below details the federal and state agencies that are in charge of monitoring and controlling mobile source air pollutants and the measures currently being taken to achieve and maintain healthful air quality in the county.

In addition to mobile sources, stationary sources also contribute to air pollution in the county. Stationary sources include gasoline stations, power plants, dry cleaners, and other commercial and industrial uses. Stationary sources of air pollution are regulated by the local air pollution control or management district, in this case the SLOAPCD.

California is divided geographically into 15 air basins for managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as a moderate, serious, severe, or extreme non-attainment area for that pollutant (there is also a marginal classification for federal non-attainment areas).

Once a non-attainment area has achieved the air quality standards for a particular pollutant, it may be redesignated as an attainment area for that pollutant. To be redesignated, the area must meet air quality standards and prepare a maintenance plan demonstrating the ability of the basin to in continuing to meet and maintain air quality standards, as well as satisfy other requirements of the Clean Air Act (CAA). Areas that are redesignated attainment are called maintenance areas.

3.1 Federal Regulations

Ambient Air Quality Standards represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The federal CAA was enacted in 1970 and amended in 1977 and 1990 [42 United States Code (USC) 7401] for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, in order to achieve the purposes of Section 109 of the CAA [42 USC 7409], the U.S. EPA developed primary and secondary National Ambient Air Quality Standards (NAAQS).

Six criteria pollutants of primary concern have been designated: ozone, carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), and respirable particulate matter (PM_{10} and $PM_{2.5}$). The primary NAAQS ". . . in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health . . . " and the secondary standards ". . . protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" [42 USC 7409(b)(2)]. The primary NAAQS were established, with a margin of safety, considering long-term exposure for the most sensitive groups in the general population (i.e., children, senior citizens, and people with breathing difficulties). The NAAQS are presented in Table 2 (CARB 2015).

In May 2012, the U.S. EPA classified the eastern portion of the County is as a marginal nonattainment for the federal 8-hour ozone standard. The western portion is classified as attainment for this standard. The County is currently designated attainment for all of the other NAAQS, however, it exceeds the federal 24-hour standard for PM_{10} on the Nipomo Mesa and could be designated nonattainment for that pollutant if exceedances continue (SLOAPCD 2014). The Nipomo Mesa experiences periods of high PM_{10} concentrations most likely because of windblown dust from the open sand areas in the Oceano Dunes State Vehicular Recreation Area (SLOAPCD 2016b).

Table 2
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone[8]	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 µg/m^3)		0.070 ppm (137 µg/m^3)		
Respirable Particulate Matter (PM_{10})[9]	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		–		
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-dispersive Infrared Photometry	35 ppm (40 mg/m^3)	–	Non-dispersive Infrared Photometry
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	–	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	
Nitrogen Dioxide (NO_2)[10]	1 Hour	0.18 ppm (339 µg/m^3)	Gas Phase Chemi-luminescence	100 ppb (188 µg/m^3)	–	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)		0.053 ppm (100 µg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m^3)	Ultraviolet Fluorescence	75 ppb (196 µg/m^3)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3 Hour	–		–	0.5 ppm (1,300 µg/m^3)	
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[10]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[10]	–	
Lead[12,13]	30 Day Average	1.5 µg/m^3	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3 (for certain areas)[12]	Same as Primary Standard	
	Rolling 3-Month Average	–		0.15 µg/m^3		
Visibility Reducing Particles[14]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No National Standards		
Sulfates	24 Hour	25 µg/m^3	Ion Chroma-tography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chroma-tography			

Table 2
Ambient Air Quality Standards

SOURCE: CARB 2015
NOTE: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; – = not applicable.

[1] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. EPA for further clarification and current national policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent measurement method which can be shown to the satisfaction of the Air Resources Board (ARB) to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the U.S. EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the U.S. EPA.

[8] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[9] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m³ to 12.0 µg/m³. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m³, as was the annual secondary standards of 15 µg/m³. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m³ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[10] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[11] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.
Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[12] The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[13] The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[14] In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

3.2 State Regulations

3.2.1 Criteria Pollutants

The U.S. EPA allows states the option to develop different (stricter) standards. The State of California has developed the California Ambient Air Quality Standards (CAAQS) and generally has set more stringent limits on the criteria pollutants (see Table 2). In addition to the federal criteria pollutants, the CAAQS also specify standards for visibility-reducing particles, sulfates, hydrogen sulfide (H_2S), and vinyl chloride (see Table 2). Similar to the federal CAA, the State classifies specific geographic areas as either “attainment” or “nonattainment” areas for each pollutant based on the comparison of measured data with the CAAQS. The County is a nonattainment area for the state ozone and PM_{10} standard The County is currently designated as attainment for the state annual $PM_{2.5}$ standard, but is expected to be designated as nonattainment the next time that CARB finalizes area designations (SLOAPCD 2014).

3.2.2 Toxic Air Contaminants

The public’s exposure to toxic air contaminants (TACs) is a significant public health issue in California. Diesel-exhaust particulate matter emissions have been established as TACs. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health (Assembly Bill [AB] 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

The California Air Toxics Program establishes the process for the identification and control of TACs and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly Bill) was enacted in 1987 and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, to identify facilities having localized impacts, to ascertain health risks, to notify nearby residents of significant risks, and to reduce those significant risks to acceptable levels. The Children's Environmental Health Protection Act, California Senate Bill 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. The act requires CARB to review its air quality standards from a children's health perspective, evaluate the statewide air monitoring network, and develop any additional air toxic control measures needed to protect children's health. Of particular concern statewide are diesel-exhaust particulate matter emissions. Diesel-exhaust particulate matter was established as a TAC in 1998, and is estimated to represent a majority of the cancer risk from TACs statewide (based on the statewide average). Diesel exhaust is a complex mixture of gases, vapors, and fine particles. This complexity makes the evaluation of health effects of diesel exhaust a complex scientific issue. Some of the chemicals in diesel exhaust, such as benzene and formaldehyde, have been previously identified as TACs by the CARB and are listed as carcinogens either under the state's Proposition 65 or under the federal Hazardous Air Pollutants program.

Following the identification of diesel particulate matter (DPM) as a TAC in 1998, CARB has worked on developing strategies and regulations aimed at reducing the risk from DPM. The overall strategy for achieving these reductions is found in the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (CARB 2000). A stated goal of the plan is to reduce the statewide cancer risk arising from exposure to DPM by 85 percent by 2020.

In April 2005, CARB published the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005). The handbook makes recommendations directed at protecting sensitive land uses from air pollutant emissions while balancing a myriad of other land use issues (e.g., housing, transportation needs, economics, etc.). It notes that the handbook is not regulatory or binding on local agencies and recognizes that application takes a qualitative approach. As reflected in the CARB Handbook, there is currently no adopted standard for the significance of health effects from mobile sources. Therefore, the CARB has provided guidelines for the siting of land uses near heavily traveled roadways. Of pertinence to this study, the CARB guidelines indicate that siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 or more vehicles/day should be avoided when possible.

As an ongoing process, CARB will continue to establish new programs and regulations for the control of diesel particulate and other air-toxics emissions as appropriate. The continued development and implementation of these programs and policies will ensure that the public's exposure to DPM will continue to decline.

3.2.3 State Implementation Plan

The State Implementation Plan (SIP) is a collection of documents that set forth the state's strategies for achieving the NAAQS. In California, the SIP is a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls. The CARB is the lead agency for all purposes related to the SIP under state law. Local air districts and other agencies, such as the Department of Pesticide Regulation and the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. The CARB then forwards SIP revisions to the U.S. EPA for approval and publication in the Federal Register. All of the items included in the California SIP are listed in the Code of Federal Regulations (CFR) at 40 CFR 52.220.

3.2.4 The California Environmental Quality Act

Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines requires discussion of any inconsistencies between the project and applicable general plans and regional plans, including the applicable air quality attainment or maintenance plan (or SIP).

3.3 Local Regulations

The SLOAPCD is the agency that regulates air quality in the County. The SLOAPCD is responsible for preparing the CAP, which is the attainment plan for the County that addresses how State standards will be met. The Final 2001 CAP provides the framework for application of Best Available Control Technology and Best Available Retrofit Control Technology, implementation of transportation control measures, development of control programs for area sources and indirect sources of emissions, sufficient control strategies to achieve reactive organic gas (ROG) and oxides of nitrogen (NO_x) emissions reductions required by CARB, and preparation of annual progress reports for submittal to CARB.

4.0 Environmental Setting

4.1 Geographic Setting

The unincorporated community of Los Osos is located along the coast in the central portion of San Luis Obispo County, generally south of and adjacent to Morro Bay and its associated estuary. Los Osos is approximately 4 miles south of the city of Morro Bay, across the bay/estuary, and approximately 10 miles west of the city of San Luis Obispo, at the western end of Los Osos Valley, a broad, relatively flat agricultural area formed by Los Osos Creek. The county can be divided into three general geographic regions including the Coastal Plateau, the Upper Salinas River Valley, and the East County Plain (SLOAPCD 2001). The LOCP area is located with the Coastal Plateau region.

4.2 Climate

The climate of the county can be generally characterized as Mediterranean, with warm, dry summers and cooler, relatively damp winters. Along the coast, mild temperatures are the rule throughout the year due to the moderating influence of the Pacific Ocean. The mean annual temperature for the project area is 63 degrees Fahrenheit (°F). The average annual precipitation is 17 inches, falling primarily from November to April. Winter low temperatures in the project area average about 43°F, and summer high temperatures average about 66°F (Western Regional Climate Center 2016).

The dominant meteorological feature affecting the region is the Pacific High Pressure Zone, which produces the prevailing westerly to northwesterly winds. These winds tend to blow pollutants away from the coast toward the inland areas. Consequently, air quality near the coast is generally better than that which occurs at the base of the coastal mountain range.

Fluctuations in the strength and pattern of winds from the Pacific High Pressure Zone interacting with the daily local cycle produce periodic temperature inversions that influence the dispersal or containment of air pollutants in the county.

The prevailing westerly wind pattern is sometimes interrupted by regional “Santa Ana” conditions. A Santa Ana occurs when a strong high pressure develops over the

Nevada-Utah area and overcomes the prevailing westerly coastal winds, sending strong, steady, hot, dry northeasterly winds over the mountains and out to sea.

4.3 Existing Air Quality

Air quality at a particular location is a function of the kinds, amounts, and dispersal rates of pollutants being emitted into the air locally and throughout the basin. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the CARB or federal standards set by the U.S. EPA. There are currently ten air quality monitoring stations located in the county. Eight of these stations are maintained and operated as a part of the SLOAPCD network, and two stations are operated by CARB (SLOAPCD 2015). Air pollutant concentrations and meteorological information are continuously recorded at these stations. Measurements are then used by scientists to help forecast daily air pollution levels.

The Morro Bay monitoring station located at 899 Morro Bay Boulevard, approximately 2.5 miles north of Los Osos is the nearest monitoring station to the LOCP area. The Morro Bay monitoring station measures ozone and NO_2. Table 3 provides a summary of measurements collected at the Morro Bay monitoring station for the years 2011 through 2015.

Table 3
Summary of Air Quality Measurements Recorded at the Morro Bay Monitoring Station

Pollutant/Standard	2011	2012	2013	2014	2015
Ozone					
Days State 1-hour Standard Exceeded (0.09 ppm)	0	0	0	0	0
Days State 8-hour Standard Exceeded (0.07 ppm)	0	0	0	0	0
Days Federal 8-hour Standard Exceeded (0.075 ppm)	0	0	0	0	0
Max. 1-hr (ppm)	0.067	0.059	0.067	0.070	0.064
Max 8-hr (ppm)	0.062	0.052	0.056	0.066	0.058
Nitrogen Dioxide					
Days State 1-hour Standard Exceeded (0.18 ppm)	0	0	0	0	0
Days Federal 1-hour Standard Exceeded (0.100 ppm)	0	0	0	0	0
Max 1-hr (ppm)	0.038	0.048	0.037	0.042	0.043
Annual Average (ppm)	0.003	0.003	0.004	0.003	0.003
SOURCE: CARB 2016.					

4.3.1 Ozone

Nitrogen oxides and hydrocarbons (known in federal parlance as volatile organic compounds (VOC) and under State parlance as ROGs are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone, which is the primary air pollution problem in the County. Because sunlight plays such an important role in its formation, ozone pollution—or smog—is mainly a concern during the daytime in summer months.

A majority of the County, including the LOCP area, has experienced relatively low levels of ozone. However, ozone levels exceeding state and federal levels have been measured in the eastern portion of the County. The eastern portion of the County was designated as a nonattainment area for the federal ozone standard in May 2012.

4.3.2 Carbon Monoxide

CO is an odorless, colorless gas. It is produced as a result of incomplete combustion of carbon containing fuels such as coal, wood, charcoal, natural gas, and fuel oil. The County is classified as a state attainment area and as a federal unclassified area for CO.

Small-scale, localized concentrations of CO above the state and national standards have the potential to occur at intersections with stagnation points such as those that occur on major highways and heavily traveled and congested roadways. Localized high concentrations of CO are referred to as "CO hot spots" and are a concern at congested intersections, where automobile engines burn fuel less efficiently and their exhaust contains more CO.

4.3.3 Particulate Matter

Particulate matter is a complex mixture of microscopic solid or liquid particles including chemicals, soot and dust. Anthropogenic sources of direct particulate emissions include crushing or grinding operations, dust stirred up by vehicle traffic, and combustion sources such as motor vehicles, power plants, wood burning, forest fires, agricultural burning and industrial processes. Additionally, indirect emissions may be formed when aerosols react with compounds found in the atmosphere.

Health studies have shown a significant association between exposure to particulate matter and premature death in people with heart or lung diseases. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and irregular heartbeat (U.S. EPA 2016).

As its properties vary based on the size of suspended particles, particulate matter is generally categorized as particulate matter with an aerodynamic diameter of 10 microns or less (PM_{10}) or particulate matter with an aerodynamic diameter of 2.5 microns or less ($PM_{2.5}$)

4.3.3.1 PM_{10}

PM_{10}, occasionally referred to as "inhalable coarse particles" has an aerodynamic diameter of about one-seventh of the diameter of a human hair. High concentrations of PM_{10} are often found near roadways, construction, mining, or agricultural operations.

4.3.3.2 $PM_{2.5}$

$PM_{2.5}$, occasionally referred to as "inhalable fine particles" has an aerodynamic diameter of about one-thirtieth of the diameter of a human hair. $PM_{2.5}$ is the main cause of haze in many parts of the United States. Federal standards applicable to $PM_{2.5}$ were first adopted in 1997.

4.3.4 Other Criteria Pollutants

The national and State standards for NO_2, oxides of sulfur (SO_x), and the previous standard for lead are being met in the county, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future. The county is also in attainment of the state standards for vinyl chloride, H_2S, sulfates, and visibility-reducing particulates.

5.0 Thresholds of Significance

The significance of potential air quality impacts are based on thresholds identified within Appendix G of the CEQA Guidelines and standards established within the SLOAPCD CEQA Air Quality Handbook. The specifics of these guidelines are defined below.

5.1 CEQA Guidelines

Appendix G of the CEQA Guidelines provides the following thresholds for determining significance with respect to air quality. Air quality impacts would be considered significant if the proposed project would:

- Conflict with or obstruct implementation of the applicable clean air plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in cumulatively considerable net increase of 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);
- Expose sensitive receptors to substantial pollutant concentrations; or,
- Create objectionable odors affecting a substantial number of people.

5.2 SLOAPCD CEQA Air Quality Handbook

The SLOAPCD has established four separate categories of evaluation for determining the significance of project impacts. Full disclosure of the potential air pollutant and/or toxic air emissions from a project is needed for these evaluations, as required by CEQA (SLOAPCD 2003):

1) Comparison of calculated project emissions to District emission thresholds;
2) Consistency with the most recent Clean Air Plan (CAP) for San Luis Obispo County;

3) Comparison of predicted ambient pollutant concentrations resulting from the project to state and federal health standards, when applicable; and
4) The evaluation of special conditions which apply to certain projects.

According to the CEQA Air Quality Handbook, project impacts may also be considered significant if one or more of the following special conditions apply:

- The project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such that an increased cancer risk affects the population.
- The project has the potential to emit diesel particulate matter in an area of human exposure, even if overall emissions are low.
- Remodeling or demolition operations where asbestos-containing materials will be encountered.
- Naturally occurring asbestos has been identified in the project area.
- The project has the ability to emit hazardous or toxic air pollutants in the close proximity of sensitive receptors such as schools, churches, hospitals, etc.
- The project results in a nuisance odor problem to sensitive receptors.

The CEQA Air Quality Handbook also defines specific thresholds for long-term operational emissions and short-term construction related emissions. Depending on the level of exceedance of a defined threshold, the SLOAPCD has established varying levels of mitigation.

5.2.1 Short-term Construction Emissions Thresholds

Use of heavy equipment and earth-moving operations during project construction can generate fugitive dust and combustion-related emissions that may have substantial temporary impacts on local air quality. Fugitive dust emissions would result from land clearing, demolition, ground excavation, cut and fill operations, and equipment traffic over temporary roads at the project site. Combustion emissions, such as NO_X and DPM, are most significant when using large diesel fueled equipment. The SLOAPCD specifies the level of construction activity and emissions at which construction mitigation would be required.

Mitigation of construction activities is required when the following emission thresholds are equaled or exceeded by both fugitive and combustion emissions (SLOAPCD 2003):

ROG or NO_x

- Greater than 185 pounds per day requires Construction Best Available Control Technology (CBACT) for construction equipment.
- 2.5 to 6.0 tons per quarter requires CBACT.
- Over 6.0 tons per quarter requires CBACT plus further mitigation, including emission offsets.

PM_{10}

- 2.5 tons per quarter requires CBACT.

Construction emission thresholds are summarized in Table 4.

Table 4
Level of Construction Activity Requiring Mitigation

Pollutant	Thresholds[1]		Amount of Material Moved	
	Tons/Quarter	Pounds/Day	Cubic Yards/Quarter	Cubic Yards/Day
ROG	2.5	185	247,000	9,100
	6.0	185	593,000	9,100
NO_x	2.5	185	53,500	2,000
	6.0	185	129,000	2,000
PM_{10}	2.5	--	Any project with a grading area greater than 4.0 acres of continuously worked area will exceed the 2.5 ton PM_{10} quarterly threshold. Combustion emissions should also be calculated based upon the amount of cut and fill expected.	

Source: SLOAPCD 2003
Note: All calculations assume working conditions of 8 hours per day, 5 days per week, for a total of 65 days per quarter.
[1]Daily emission thresholds are based upon the level of daily emissions that may result in a short-term exceedance of the ozone standard.

5.2.2 Long-term Operational Emissions Thresholds

Operational emission thresholds are summarized in Table 5. Emissions that equal or exceed the designated threshold levels are considered potentially significant and should be mitigated. For projects requiring air quality mitigation, the SLOAPCD has developed a list of both standard and discretionary mitigation strategies tailored to the type of project being proposed: residential, commercial, or industrial. As shown in Table 5, the level of analysis and mitigation recommended follows a tiered approach, based on the overall amount of emissions generated by the project.

Table 5
Thresholds of Significance for Operational Emissions

Pollutant	Emission Rate	Tier 1	Tier 2	Tier 3
ROG, NO_x, SO_2, PM_{10}	<10 pounds/day	10 pounds/day	25 pounds/day	25 tons/year
CO	<550 pounds/day		550 pounds/day	
Significance	Insignificant	Potentially Significant Impacts	Significant Impacts	Significant Impacts
Environmental Document	ND	Mitigated ND	Mitigated ND or EIR	EIR

ND = Negative Declaration; EIR = Environmental Impact Report
Source: SLOAPCD 2003

As shown, if a project emits less than 10 pounds per day of ROG, NO_x, SO_2, and PM_{10}, and less than 550 pounds per day of CO, impacts would be less than significant and mitigation measures would not be required.

Tier 1 – Any project which has the potential to exceed the Tier 1 threshold has the potential to cause significant air quality impacts, and should be submitted to the SLOAPCD for review. On-site mitigation measures are recommended to reduce air quality impacts to a level of insignificance.

Tier 2 – If all feasible measures are incorporated into the project and emissions can be reduced to less than the Tier 2 threshold, impacts would be mitigated to a level less than significant. If all feasible mitigation measures are incorporated into the project and emissions are still greater than the Tier 2 threshold, impacts would be potentially significant. Additional mitigation measures, including off-site mitigation, may be required depending on the level and scope of air quality impacts identified.

Tier 3 – If emissions from a project would exceed the Tier 3 thresholds, impacts would be significant. Depending upon the level and scope of air quality impacts, mitigation measures, including off-site mitigation measures, may be required to reduce the overall air quality impacts of the project to a level of insignificance.

6.0 Air Quality Assessment

6.1 Consistency with Regional Air Quality Plans

As described above, the California CAA requires air basins that are designated non-attainment of State AAQS for criteria pollutants prepare and implement plans to attain the standards by the earliest practicable date. The two pollutants addressed in the CAP are ROG and NO_x, which are precursors to the formation of ozone. Projected increases in motor vehicle usage, population, and growth create challenges in controlling emissions and by extension to maintaining and improving air quality.

According to the CEQA Air Quality Handbook, when determining if a project is consistent with the CAP, the following should be addressed:

1) Are the population projections used in the plan or project equal to or less than those used in the most recent CAP for the same area?

2) Is the rate of increase in vehicle trips and miles traveled less than or equal to the rate of population growth for the same area?

3) Have all applicable land use and transportation control measures and strategies from the CAP been included in the plan or project to the maximum extent feasible?

6.1.1 Population Growth Consistency

The current residential population of the LOCP area is 15,044. Buildout of the LOCP would accommodate an additional 4,429 residents for a total of 19,473 residents. The SLOCOG estimates that the 2035 population of Los Osos would be 17,919 and assumes an annual growth rate of 0.71 percent (Economics Research Associates 2010). The LOCP would exceed the SLOCOG growth projection by 1,824 residents. Additionally, buildout of the LOCP would result in an average annual growth rate of 1.5 percent. However, the LOCP would decrease the development potential when compared to the adopted Estero Area Plan. Buildout of the Estero Area Plan would accommodate an additional 6,681 residents for a total of 21,725 residents, which is an annual growth rate of 2.2 percent over the same 20-year buildout horizon. In general, the LOCP envisions substantial decreases in land designated for residential and non-residential development, and corresponding increases in land designated for Open Space. There would be a net decrease in residential land use categories of 946 units and a 50,760-square-foot net decrease in non-residential (commercial and office) land use categories. Overall, this would result in a commensurate decrease in residential and non-residential development potential compared to the existing land use designations under the adopted Estero Area Plan. The proposed LOCP would include a 418-acre increase in Open Space within the plan area, which is over twice the amount currently designated for that purpose. Most of this change comes from decrease in both residential (single- and multi-family) and non-residential area. Because the LOCP would decrease residential and commercial land uses and decrease population when compared to buildout of the adopted Estero Area Plan, future total operational emissions under the proposed LOCP would be less than future total operational emissions under the adopted Estero Area Plan (Operational emission calculations for the existing land uses, the LOCP, and the adopted Estero Area Plan are contained in Attachments 1 through 3, respectively). However, because development facilitated by the LOCP would exceed SLOCOG growth forecasts, it would be inconsistent with the CAP population growth assumptions.

6.1.2 Vehicle Trips and Miles Traveled

Project trip generation rates were obtained from the Transportation Impact Analysis Report prepared for the LOCP (Omni Means 2016). The existing land uses generate 74,836 trips and future buildout of the LOCP would generate 100,648 trips. A comparison of vehicles miles traveled (VMT) with and without implementation of the LOCP was completed using average trip lengths in County (CARB 2014) and California Emissions Estimator Model (CalEEMod) vehicle calculations. Based on data reported by SLOAPCD, the existing year 2016 and year 2035 average regional trip length trip lengths in the County are 5.56 and 5.20 miles, respectively (CARB 2014). Based on CalEEMod calculations, the existing land uses currently generate 105,487,960 annual VMT and future buildout of the LOCP would generate 125,576,933 annual VMT. This represents an annual growth rate of 1.0 percent, which exceeds the growth rate assumed in the CAP. Because the rate of increase in vehicle trips and mile traveled would exceed the rate of population growth assumed by the CAP, the LOCP would be inconsistent with the CAP as it relates to VMT.

6.1.3 Implementation of Transportation Control Measures

The following TCM's contained in the CAP would apply to the LOCP:

- T-1C Voluntary Commute Options Program
- T-2A Local Transit System Improvements
- T-3 Bicycling and Bikeway Enhancements
- T-6 Traffic Flow Improvements
- T-8 Telecommuting, Teleconferencing, and Telelearning

The LOCP identifies deficiencies in the circulation network, proposes specific circulation improvements, and proposes a number of transportation and circulation goals and policies. Strategy growth goals and circulation policies include the following:

- Strategic Growth Goal 4 – Create walkable neighborhoods and towns.
- Strategic Growth Goal 5 – Provide a variety of transportation choices.
- Policy CIR-1. Maximize public access to and along the coast.
- Policy CIR-2. Provide safe, convenient access to multiple transportation modes from shopping areas, schools, residential areas, and recreation facilities.
- Policy CIR-3. Responsibly finance and administer the community circulation system in Los Osos.
- Policy CIR-4. Design the Los Osos community circulation system to be compatible with the community's character and responsive to local environmental needs.

In addition to these transportation and circulation goals and policies, the LOCP contains the following specific circulation improvements.

Los Osos Valley Road

- Construct center medians in the downtown corridor intended to slow traffic, encourage pedestrian activity, attract economic activity, and make the area more attractive.
- Widen Los Osos Valley Road between Doris Avenue and Palisades Avenue to provide a continuous center left turn lane.
- Implement traffic calming measures where feasible to slow traffic and encourage safe pedestrian travel within the central business district, such as bulb-outs, medians and raised crosswalks at intersections and mid- block locations.
- Construct a multi- use trail on the northerly side of Los Osos Valley Road between Palisades Avenue and Doris Avenue.

Los Osos Valley Road Corridor Improvements

- A Los Osos Valley Road Corridor Study was prepared to define a specific set of guidelines and serve as an overall master plan that will guide future circulation improvements within the Los Osos Valley Road right-of-way between the Los Osos Creek Bridge and Bush Drive. The study includes a number of recommendations

including raised medians, dedicated right turn lanes, intersection improvements, pedestrian crossings, new and synchronized signals, and pedestrian improvements.
- The Los Osos Valley Road Corridor Study also provides guidelines for amenities in the Central Business District. These amenities include on-site parking off of Los Osos Valley Road, street furnishings, sitting walls, benches, trash receptacles, pathways, perpendicular streets, bike racks, tree grates, in-ground planters, container planters, landscaped medians, and street lighting.

These goals, policies, and circulation improvements would be consistent with CAP TCMs. The CAP also identifies land use strategies that reduce VMT by planning compact communities, providing for a mix of land uses, creating a job and housing balance, and implementing circulation management policies. The LOCP would provide three mixed-use areas that would incorporate these land use strategies. These areas include the Morro Shores Mixed-Use Area, Midtown Area, and West of South Bay Boulevard Mixed-Use Area. New development within these areas would include efficient pedestrian, bicycle, and vehicular connections to other neighborhoods and important activity centers within the community including open space areas, the Central Business District, and the Baywood Commercial Area. The LOCP would be consistent with CAP land use strategies.

6.1.4 Summary of Clean Air Plan Consistency

As discussed, although the LOCP would incorporate TCMs and land use strategies that are consistent with the CAP, because development facilitated by the LOCP would exceed SLOCOG growth forecasts, the LOCP would be inconsistent with the CAP population growth assumptions and would be inconsistent with the CAP as it relates to VMT.

Mitigation

AQ-1 **Trip Reduction Measures.** To reduce overall trip generation and associated air contaminant emissions, future commercial tenants within the LOCP area shall establish and maintain employee trip reduction programs that should include, but are not limited to, the following elements:

- Orient buildings toward streets with automobile parking in the rear to promote a pedestrian-friendly environment;
- Provide good access to/from developments for pedestrians, bicyclists, and transit users;
- Implement on-site circulation design elements in parking lots to reduce vehicle queuing and improve the pedestrian environment;
- Provide employee lockers and showers (one shower and 5 lockers for every 25 employees are recommended);
- Parking space reduction to promote bicycle, walking, and transit use;
- Provide and maintain kiosk displaying transportation information in a prominent area accessible to employees and patrons;
- If the project is located on an established transit route, provide improved public transit amenities (i.e., covered transit turnouts, direct pedestrian

access, covered benches, smart signage, route information displays, lighting, etc.);
- Provide preferential parking/no parking fee for alternative fueled vehicles or vanpools;
- Install bicycle racks and/or bicycle lockers at a ratio of 1 bicycle parking space for every 10 car parking spaces for customers and employees, or at a ratio otherwise acceptable the SLOAPCD to be determined prior to occupancy clearance;
- Post carpool, vanpool and transit information in employee break/lunch areas;
- Employ or appoint an Employee Transportation Coordinator;
- Implement a Transportation Choices Program. Project applicants should work with the Transportation Choices Coalition partners for free consulting services on how to start and maintain a program. Contact SLO Regional Rideshare at (805) 541-2277;
- Provide for shuttle/mini bus service;
- Provide incentives to employees to carpool/vanpool, take public transportation, telecommute, walk, bike, etc.;
- Implement compressed work schedules;
- Implement telecommuting program;
- Implement a lunchtime shuttle to reduce single occupant vehicle trips;
- Include teleconferencing capabilities, such as web cams or satellite linkage, which will allow employees to attend meetings remotely without requiring them to travel out of the area;
- Provide on-site eating, refrigeration and food vending facilities to reduce employee lunchtime trips;
- Provide preferential carpool and vanpool parking spaces ;
- Provide shower and locker facilities to encourage employees to bike and/or walk to work (typically one shower and three lockers per every 25 employees) ; and
- Provide off-site improvements to offset contaminant emissions, including: retrofitting existing homes and businesses with energy-efficient devices, replacing transit or school buses, contributing to alternative fueling infrastructure, and/or improving park and ride lots.

The specific components of a trip reduction program that will be recommended for a particular commercial development will be at the discretion of the Planning and Building Department, based on the recommendations of the SLOAPCD.

Plan Requirements and Timing. Future commercial development shall incorporate the listed provisions into development plans or shall submit proof of infeasibility prior to initiation of construction.

Monitoring. The Planning and Building Department shall site inspect to ensure development is in accordance with approved plans prior to occupancy clearance. Planning and Building staff shall verify installation in accordance with approved building plans.

Residual Impacts. Implementation of the above mitigation measure would reduce impacts to the extent feasible. However, population projection inconsistencies from LOCP buildout would remain and no mitigation measures are feasible to sufficiently reduce VMT below threshold levels. Therefore, impacts related to consistency with the CAP would remain significant and unavoidable.

6.2 Temporary Construction Impacts

Construction-related activities are temporary, short-term sources of air emissions. Sources of construction-related air emissions include:

- Fugitive dust from grading activities;
- Construction equipment exhaust;
- Construction-related trips by workers, delivery trucks, and material-hauling trucks; and
- Construction-related power consumption.

Air pollutants generated by the construction of projects within the LOCP area would vary depending upon the number of projects occurring simultaneously and the size of each individual project. The exact number and timing of all development projects that could occur under the LOCP are unknown. The LOCP would accommodate 1,861 residential units and 364,000 square feet of commercial space over the existing condition. Construction activities associated with individual projects are not generally considered to have significant air quality impacts because of their short-term and temporary nature. However, because the number, type, and size of construction projects that could occur at any given time is unknown and because the LOCP would accommodate additional growth over the existing condition, it is reasonable to conclude that some major construction activity could be occurring at any given time over the buildout horizon of the LOCP. Large construction projects or multiple construction project occurring simultaneously would have the potential to exceed construction emission thresholds established by the SLOAPCD (see Table 4). In addition, because the SLOAPCD is in non-attainment with the state standard for PM_{10}, the amount of fugitive dust generated from construction activities is potentially significant. Therefore, construction-related impacts associated with development under the LOCP is significant but mitigable with the following mitigation measures.

Mitigation

Portable equipment, 50 horsepower or greater, will require California statewide portable equipment registration (issued by the CARB) or an SLOAPCD permit. In addition, the following mitigation measures are recommended to minimize emissions and to reduce the amount of dust that drifts onto adjacent properties. These measures apply to future development projects under the LOCP that would exceed SLOAPCD construction emissions thresholds (as identified in Table 4).

AQ-2(a) **Construction Equipment Emissions Controls.** Future applicants shall implement the following measures to mitigate equipment emissions:

- Maintain all construction equipment in proper tune according to manufacturer's specifications;
- Fuel all off-road and portable diesel powered equipment with CARB certified motor vehicle diesel fuel (non-taxed version suitable for use off-road);
- Use diesel construction equipment meeting CARB's Tier 2 certified engines or cleaner off-road heavy-duty diesel engines, and comply with the State Off-Road Regulation;
- Use on-road heavy-duty trucks that meet the CARB's 2007 or cleaner certification standard for on-road heavy-duty diesel engines, and comply with the State On-Road Regulation;
- Construction or trucking companies with fleets that do not have engines in their fleet that meet the engine standard identified in the above two measures (e.g., captive or NO_X exempt area fleets) may be eligible by providing alternative compliance;
- All on and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and or jobs sites to remind drivers and operators of the 5 minute idling limit;
- Diesel idling within 1,000 feet of sensitive receptors is not permitted;
- Staging and queuing areas shall not be located within 1,000 feet of sensitive receptors;
- Electrify equipment when feasible;
- Substitute gasoline-powered in place of diesel-powered equipment, where feasible;
- Use alternatively fueled construction equipment on-site where feasible, such as compressed natural gas (CNG), liquefied natural gas (LNG), propane, or biodiesel; and
- The applicant shall apply Best Available Control Technology (CBACT) as determined by the SLOAPCD.

Plan Requirements and Timing. Applicants shall provide the grading amounts and schedule to the SLOAPCD Planning Division at least three months prior to the start of construction. All applicable BACT measures shall be shown on all grading and construction plans prior to issuance of construction permits. Compliance with these measures shall be included as bid specifications submitted to contractors.

Monitoring. Applicants shall provide Planning and Building with proof that the above listed measures, as well as those required by the SLOAPCD upon review of grading plans, have been implemented prior to the start of the construction activity. The grading inspector shall perform periodic site inspections.

AQ-2(b) **Dust Control.** The following measures shall be implemented to reduce PM_{10} emissions during construction and shall be shown on the development plans:

- Reduce the amount of the disturbed area where possible;
- Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Water shall be applied as soon as possible whenever wind speeds exceed 15 miles per hour. Reclaimed (nonpotable) water should be used whenever possible;
- All dirt-stock-pile areas shall be sprayed daily as needed;
- Permanent dust control measures shall be identified in the approved project revegetation and landscape plans and implemented as soon as possible following completion of any soil disturbing activities;
- Exposed ground areas that are planned to be reworked at dates greater than one month after initial grading shall be sown with a fast-germinating native grass seed and watered until vegetation is established;
- All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the SLOAPCD;
- All roadways, driveways, sidewalks, etc., to be paved shall be completed as soon as possible. In addition, building pads shall be laid as soon as possible after grading unless seeding or soil binders are used;
- Vehicle speed for all construction vehicles shall not exceed 15 mph on any unpaved surface at the construction site;
- All trucks hauling dirt, sand, soil or other loose materials shall be covered or shall maintain at least two feet of freeboard (minimum vertical distance between top of load and top of trailer) in accordance with CVC Section 23114;
- Install wheel washers where vehicles enter and exit unpaved roads onto streets, or wash off trucks and equipment leaving the site; and
- Sweep streets at the end of each day if visible soil material is carried onto adjacent paved roads. Water sweepers with reclaimed water shall be used where feasible.

Plan Requirements and Timing. Conditions shall be adhered to throughout all grading and construction periods for all project components. Prior to issuance of grading permits, applicants shall include, as a note on a separate informational sheet to be recorded with any map, the aforementioned dust control recommendations. All recommendations shall be shown on grading and building plans.

Monitoring. Planning and Building inspectors shall perform periodic spot checks during grading and construction. SLOAPCD inspectors shall respond to nuisance complaints.

AQ-2(c) **Cover Stockpiled Soils.** If importation, exportation, or stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting material shall be tarped from the point of origin.

Plan Requirements and Timing. Conditions shall be adhered to throughout all grading and construction periods for all project components.

Monitoring. Planning and Building inspectors shall perform periodic spot checks during grading and construction. SLOAPCD inspectors shall respond to nuisance complaints.

AQ-2(d) **Dust Control Monitor.** The contractor or builder shall designate a person or persons to monitor the dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20 percent opacity, and to prevent transport of dust offsite. Their duties shall include holidays and weekend periods when work may not be in progress.

Plan Requirements and Timing. The name and telephone number of dust monitor(s) shall be provided to the SLOAPCD Compliance Division prior to the start of any grading, earthwork, or demolition. The dust monitor shall be designated prior to approval of a Land Use Permit.

Monitoring. Planning and Building shall contact the designated monitor as necessary to ensure compliance with dust control measures.

AQ-2(e) **Hydrocarbon Contaminated Soil.** Should hydrocarbon contaminated soil be encountered during construction activities, the SLOAPCD shall be notified as soon as possible and no later than 48 hours after affected material is discovered to determine if an SLOAPCD Permit will be required. In addition, the following measures shall be implemented immediately after contaminated soil is discovered:

- Covers on storage piles shall be maintained in place at all times in areas not actively involved in soil addition or removal;
- Contaminated soil shall be covered with at least six inches of packed uncontaminated soil or other Total Petroleum Hydrocarbons (TPH) – non-permeable barrier such as a plastic tarp. No headspace shall be allowed where vapors would accumulate;
- Covered piles shall be designed in such a way to eliminate erosion due to wind or water. No openings in the covers are permitted;
- During soil excavation, odors shall not be evident to such a degree as to cause a public nuisance; and,
- Clean soil must be segregated from contaminated soil.

Plan Requirements and Timing. Conditions shall be adhered to throughout all grading and construction periods for all project components.

Monitoring. Planning and Building inspectors shall perform periodic spot checks during grading and construction. SLOAPCD inspectors shall respond to notification of contamination.

AQ-2(f) **Construction Activity Management Plan.** Prior to commencement of construction for any project for which the estimated construction emissions from the actual fleet are expected to exceed either of the SLOAPCD Quarterly Tier 2 thresholds of significance after application of the construction equipment control measures in Mitigation Measure AQ-2(a), the project applicant shall develop a Construction Activity Management Plan (CAMP), designed to minimize the amount of large construction equipment operating during any given time period. The CAMP shall include, but not be limited to, the following elements:

- A Dust Control Management Plan that encompasses all, but is not limited to, dust control measures that were listed under Mitigation Measure AQ-2(b);
- Tabulation of on-and off-road construction equipment (age, horsepower, and miles and/or hours of operation;
- Schedule construction truck trips during non-peak hours to reduce peak-hour emissions;
- Limit the length of the construction work day period, if necessary; and
- Phase construction activities, if appropriate.

Plan Requirements and Timing. Conditions shall be adhered to throughout all grading and construction periods for all project components.

Monitoring. Planning and Building inspectors shall perform periodic spot checks during grading and construction.

AQ-2(g) **Off-Site Mitigation Fees.** For projects where construction-related ozone precursor emissions exceed SLOAPCD Quarterly Tier 2 thresholds of significance after application of other mitigation, including a Construction Activity Management Plan, as described in Mitigation Measure AQ-2(f), off-site mitigation fees would be recommended. The off-site mitigation fee shall be calculated in accordance with SLOAPCD's CEQA Air Quality Handbook, is $16,000 per ton of ozone precursor emission (NO_X + ROG) over the SLOAPCD threshold calculated over the length of the expected exceedance (currently it is $16,000 per ton). Future applicants may use these funds to implement SLOAPCD approved emission reduction projects near the project site or may pay that funding level plus an administration fee (2009 rate is 10 percent) to the SLOAPCD to administer emission reduction projects in close proximity to the project.

Plan Requirements and Timing. Off-site mitigation fees shall be assessed at least two months prior to the start of construction.

Monitoring. Applicants shall provide Planning and Building with proof that the required fees have been paid upon review of grading plans, and have been implemented prior to the start of the construction activity.

Residual Impacts. Due to the temporary nature of construction activities and implementation of the above mitigation measures, construction air quality impacts would be reduced to a less than significant level.

6.3 Long-term Operational Impacts

Operation emissions are long-term and include mobile and area sources. Sources of operational emissions associated with future projects developed under the Community Plan include:

- Traffic generated by the project; and,
- Area source emissions from the use of natural gas, fireplaces, and consumer products.

The SLOAPCD does not require quantified analysis of operational air contaminant emissions impacts for program-level evaluations (SLOAPCD 2003). Rather, a qualitative consistency analysis of air quality impacts is required.

The LOCP does not propose the construction of new housing or other development; rather, it provides guidelines for future development. Although a quantified analysis is not required, for informational purposes, emissions due to operation of the existing land uses as well as buildout of the adopted Estero Area plan and the LOCP were calculated and are contained in Attachments 1 through 3. Because the LOCP would decrease residential and commercial land uses and decrease population when compared to buildout of the adopted Estero Area Plan, future total operational emissions under the proposed LOCP would be less than future total operational emissions under the adopted Estero Area Plan.

Significant operational impacts are identified by determining whether the LOCP would exceed the population projections used in the CAP, whether the vehicle trips and miles traveled generated by the LOCP would exceed the rate of population growth, and whether all applicable land use and transportation control measures from the CAP have been included in the LOCP. As discussed in Section 6.1, although the LOCP would incorporate TCMs and land use strategies that are consistent with the CAP, because development facilitated by the LOCP would exceed SLOCOG growth forecasts, the LOCP would be inconsistent with the CAP population growth assumptions and would be inconsistent with the CAP as it relates to VMT. Implementation of mitigation measure AQ-1 above and AQ-3(a) and AQ-3(b) below would reduce impacts, but not to a level less than significant.

Mitigation

AQ-3(a) **On-Site Mitigation Program.** Future residential and commercial projects that exceed screening criteria as listed in Table 1-1 of the SLOAPCD CEQA Handbook shall conduct an Air Quality study to determine whether applicable thresholds would be exceeded. On-site emission reduction measures may include, but would not be limited to:

- **Commercial Land Use Reduction Measures.** Potential reduction measures applicable to commercial land uses include, but are not limited to:
  - Provide on-site bicycle parking close to building entrances. One bicycle parking space for every 10 car parking spaces is considered appropriate;
  - Provide on-site eating, refrigeration and food vending facilities to reduce lunchtime trips;
  - Provide preferential carpool and vanpool parking;
  - Provide shower and locker facilities to encourage employees to bike and/or walk to work, typically one shower and three lockers for every 25 employees.
  - Provide interior and exterior storage areas for recyclables and green waste;
  - Limit idling time for delivery and other commercial vehicles;
  - Implement on-site circulation design elements in parking lots to reduce vehicle queuing and improve the pedestrian environment.

- **Shade Trees.** Shade trees native to the Shandon area shall be planted to shade the southern exposure of on-site homes and structures, decreasing indoor temperatures and reducing energy demand for air conditioning. County Planning and Building shall review project landscaping plans for consistency with this mitigation measure. Commercial development shall include shade trees in parking lots to reduce evaporative emissions from parked vehicles.

- **Outdoor Electrical Outlets.** All new homes shall be constructed with outdoor electrical outlets to encourage the use of electric appliances and tools.

- **Telecommuting.** All new homes shall be constructed with internal wiring/cabling that allows telecommuting, teleconferencing, and telelearning to occur simultaneously in at least three locations in each home, unless otherwise demonstrated to be infeasible. This control measure seeks to reduce emissions by promoting telecommuting for any employee whose job can accommodate working from home.

- **Residential Wood Combustion**. All new homes shall only be permitted to install SLOAPCD-approved wood burning devices, as applicable and in accordance with Rule 504. Approved devices include:
  - All EPA-certified phase II wood burning devices;
  - Catalytic wood burning devices which emit less than or equal to 4.1 grams per hour of particulate matter which are not EPA-certified but have been verified by a nationally-recognized testing lab;
  - Non-catalytic wood burning devices which emit less than or equal to 7.5 grams per hour of particulate matter which are not EPA-certified but have been verified by a nationally-recognized testing lab;
  - Pellet-fueled wood heaters; and
  - Dedicated gas-fired fireplaces.

"Backyard" green waste burning shall be prohibited due to nuisance and negative health effects.

Plan Requirements and Timing. Applicants for projects in the LOCP area of a size that exceeds SLOAPCD screening criteria shall coordinate with Planning and Building to determine the appropriate off-site mitigation approach. On-site mitigation should be provided prior to occupancy clearance.

Monitoring. Planning and Building shall confirm that all applicable mitigation measures have been implemented such that emissions would be reduced to the extent feasible or payment of in-lieu fees has been received prior to occupancy clearance.

AQ-3(b) **Off-Site Mitigation Program.** Future residential and commercial projects that exceed screening criteria as listed in Table 1-1 of the SLOAPCD CEQA Handbook shall conduct an Air Quality study to determine whether applicable thresholds would be exceeded. If applicable thresholds are still exceeded after the implementation of on-site mitigation as listed in Mitigation Measures AQ-3(a), off-site mitigation measures are required recommended. The applicant shall fund and/or implement off-site emission reduction measures to reduce emissions below threshold to the extent feasible, as demonstrated by a qualified professional. Off-site emission reduction measures may include, but would not be limited to:

- Payment of in-lieu fees in accordance with SLOAPCD methodology and the State's current Carl Moyer Incentive Program Guidelines. Currently the program requires an in-lieu fee of $16,000/ton in excess of the established threshold.
- Developing or improving park-and-ride lots;
- Retrofitting existing homes in the project area with SLOAPCD approved wood combustion devices;
- Retrofitting existing homes in the project area with energy efficient devices;
- Constructing satellite worksites;

- Funding a program to buy and scrap older, higher emission passenger and heavy-duty vehicles;
- Replacing/repowering transit buses;
- Replacing/repowering heavy-duty diesel school vehicles (i.e. bus, passenger or maintenance vehicles);
- Funding an electric lawn and garden equipment exchange program;
- Retrofitting or repowering heavy-duty construction equipment, or on-road vehicles;
- Repowering marine vessels;
- Repowering or contributing to funding clean diesel locomotive main or auxiliary engines;
- Installing bicycle racks on transit buses;
- Purchasing particulate filters or oxidation catalysts for local school buses, transit buses or construction fleets;
- Installing or contributing to funding alternative fueling infrastructure (i.e. fueling stations for CNG, LPG, conductive and inductive electric vehicle charging, etc.);
- Funding expansion of existing transit services;
- Funding public transit bus shelters;
- Subsidizing vanpool programs;
- Subsidizing transportation alternative incentive programs;
- Contributing to funding of new bike lanes;
- Installing bicycle storage facilities; and
- Providing assistance in the implementation of projects that are identified in County Bicycle Master Plan.

Plan Requirements and Timing. Applicants for projects in the LOCP area of a size that exceeds SLOAPCD screening criteria shall coordinate with Planning and Building to determine the appropriate off-site mitigation approach. Off-site mitigation should be provided prior to occupancy clearance.

Monitoring. Planning and Building shall confirm that all applicable mitigation measures have been implemented such that emissions would be reduced to the extent feasible or payment of in-lieu fees has been received prior to occupancy clearance.

<u>Residual Impacts</u>. Implementation of mitigation measures AQ-1, AQ-3(a), and AQ-3(b) would reduce impacts to the extent feasible. However, population projection inconsistencies from Community Plan buildout would remain and no mitigation measures are feasible to sufficiently reduce vehicle miles traveled below threshold levels. In addition, while an off-site mitigation program as identified in Mitigation Measure AQ-3(b) is feasible in theory, the cost of an off-site program for proposed projects may be substantial. As such, it may not be economically feasible, and may not be applied in full by the decision makers, in which case long term ozone precursor emissions may not be mitigated below the level of significance. Impacts related to long-term operational emissions would be significant and unavoidable.

6.4 Sensitive Receptors

6.4.1 Localized Carbon Monoxide Hot-spot Impacts

Localized CO concentration is a direct function of motor vehicle activity at signalized intersections (e.g., idling time and traffic flow conditions), particularly during peak commute hours and meteorological conditions. Under specific meteorological conditions (e.g., stable conditions that result in poor dispersion), CO concentrations may reach unhealthy levels with respect to local sensitive land uses. Guidance for the evaluation of CO hot spots is provided in the *Transportation Project-level Carbon Monoxide Protocol* (CO protocol) (University of California, Davis 1997) prepared for the Environmental Program of the California Department of Transportation by the Institute of Transportation Studies, University of California Davis. According to the CO Protocol, projects that increase the percentage of vehicles in cold start modes by 2 percent or more significantly increase traffic volumes over existing volumes, worsen traffic flow, or have the potential to result in CO hotspots. The CO Protocol defines a significant increase in traffic as a 5 percent or greater increase in average daily trips (ADT) from all roadways. Worsening traffic flow is defined for signalized intersections as increasing average delay at intersections operating at level of service (LOS) E or F or causing an intersection that would operate at LOS D or better without the project to operate at LOS E or F with the project. CO hot spots almost exclusively occur near intersections with LOS E or worse in combination with relatively high traffic volumes on all roadways (Garza et al. 1997). Unsignalized intersections are not considered as potential candidates for CO hot spots, as unsignalized intersections do not experience large traffic volumes and delays, and are typically signalized when significant delays in traffic are identified.

LOS projections were developed in the Transportation Impacts Analysis Report prepared for the project (Omni Means 2016). Based on this analysis, the LOCP would not result in any signalized intersections with LOS E or worse. Therefore, no CO hot spots would occur as a result of the LOCP and localized air quality impacts would be less than significant.

6.4.2 Toxic Air Emissions

Diesel-fired particulate matter has been identified as a TAC. The health risks associated with DPM are those related to long-term exposures (i.e., cancer and chronic effects). Long-term health risk effects are generally evaluated for an exposure period of 70 years (i.e., lifetime exposure).

CARB guidelines indicate that siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 or more vehicles/day should be avoided when possible. Based on the Transportation Impacts Analysis Report, future traffic volumes on all roadways are projected to be less than 22,000 ADT at buildout of the LOCP. Sensitive receptors sited next to roadways in the LOCP area would not be exposed to a significant source of DPM. Impacts would be less than significant.

6.5 Odors

The potential for an odor impact is dependent on a number of variables including the nature of the odor source, distance between the receptor and odor source, and local meteorological conditions. During construction, potential odor sources associated with the project include diesel exhaust associated with construction equipment. Diesel exhaust may be noticeable temporarily; however, construction activities would be temporary. Therefore, the diesel exhaust odors would not result in significant impacts.

The SLOAPCD CEQA Air Quality Handbook identifies multiple odor-causing sources including but not limited to; wastewater treatment plants, landfills, composting facilities, petroleum refineries, and chemical manufacturing. The LOCP proposes single-family residential, multi-family residential, commercial (office and retail), recreational, and open space land uses, and would not introduce land uses that would generate substantial odor. Implementation of the LOCP would not create operational-related objectionable odors affecting a substantial number of people. Program-level impacts associated with odor would be less than significant.

7.0 Conclusions

7.1 Consistency with Regional Air Quality Plans

As discussed in Section 6.1, although the LOCP would incorporate TCMs and land use strategies that are consistent with the CAP, because development facilitated by the LOCP would exceed SLOCOG growth forecasts, the LOCP would be inconsistent with the CAP population growth assumptions and would be inconsistent with the CAP as it relates to VMT. Implementation of mitigation measure AQ-1 would reduce impacts to the extent feasible. However, population projection inconsistencies from LOCP buildout would remain and no mitigation measures are feasible to sufficiently reduce VMT to below threshold levels. Impacts related to consistency with the CAP would remain significant and unavoidable.

7.2 Temporary Construction Impacts

The exact number and timing of all development projects that could occur under the LOCP are unknown. Because the number, type, and size of construction projects that could occur at any given time is unknown, and because the LOCP would accommodate additional growth over the existing condition, it is reasonable to conclude that some major construction activity could be occurring at any given time over the buildout horizon of the LOCP. Large construction projects or multiple construction projects occurring simultaneously would have the potential to exceed construction emission thresholds established by the SLOAPCD. Implementation of mitigation measures AQ-2(a) through (g) would reduce these temporary impacts to a level less than significant.

7.3 Long-term Operational Impacts

Significant operational impacts are identified by determining whether the LOCP would exceed the population projections used in the CAP, whether the vehicle trips and miles traveled generated by the LOCP would exceed the rate of population growth, and whether all applicable land use and transportation control measures from the CAP have been included in the LOCP. Although the LOCP would incorporate TCMs and land use strategies that are consistent with the CAP, because development facilitated by the LOCP would exceed SLOCOG growth forecasts, the LOCP would be inconsistent with the CAP population growth assumptions and would be inconsistent with the CAP as it relates to VMT. Implementation of mitigation measures AQ-1, AQ-3(a), and AQ-3(b) would reduce impacts, but not to a level less than significant.

7.4 Sensitive Receptors

CO hot spots almost exclusively occur near intersections with LOS E or worse in combination with relatively high traffic volumes on all roadways. Based on this analysis, the LOCP would not result in any signalized intersections with LOS E or worse. Therefore, no CO hot spots would occur as a result of the LOCP and localized air quality impacts would be less than significant.

CARB guidelines indicate that siting new sensitive land uses within 500 feet of a freeway or urban roads with 100,000 or more vehicles/day should be avoided when possible. Sensitive receptors sited next to roadways in the LOCP area would not be exposed to a significant source of DPM because traffic volumes on all roadways are projected to be less than 22,000 ADT at buildout of the LOCP. Impacts associated with sensitive receptors would be less than significant.

7.5 Odors

During construction, potential odor sources associated with the project include diesel exhaust associated with construction equipment. Diesel exhaust may be noticeable temporarily; however, construction activities would be temporary. Therefore, the diesel exhaust odors would not result in significant impacts.

The LOCP would not introduce land uses that would generate substantial odor. Implementation of the LOCP would not create operational-related objectionable odors affecting a substantial number of people. Impacts associated with odor would be less than significant.

8.0 References Cited

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ATTACHMENTS

ATTACHMENT 1

CalEEMod Output – Existing Emissions

7773 Los Osos - Existing 2016

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	231.10	1000sqft	5.31	231,100.00	0
Apartments Low Rise	895.00	Dwelling Unit	55.94	895,000.00	2560
Single Family Housing	5,426.00	Dwelling Unit	1,761.69	9,766,800.00	15518
Strip Mall	439.20	1000sqft	10.08	439,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2016
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	552.2	**CH4 Intensity (lb/MWhr)**	0.025	**N2O Intensity (lb/MWhr)**	0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS status - PGE currently at 28.0%
CalEEMod accounts for 14.1%
Additional 13.9% reduction applied
(552.20, 0.025, 0.005)

Land Use - Existing land uses

Construction Phase - Existing uses - no construction

Vehicle Trips - TIA
Existing trip length = 5.56 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - Historical data

Mobile Land Use Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	155,000.00	1.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	492.00
tblFireplaces	NumberGas	0.00	2,984.00
tblFireplaces	NumberNoFireplace	0.00	90.00
tblFireplaces	NumberNoFireplace	0.00	543.00

tblFireplaces	NumberWood	0.00	313.00
tblFireplaces	NumberWood	0.00	1,899.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	552.2
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2016
tblVehicleTrips	CC_TL	5.00	5.56
tblVehicleTrips	CC_TL	5.00	5.56
tblVehicleTrips	CNW_TL	5.00	5.56
tblVehicleTrips	CNW_TL	5.00	5.56
tblVehicleTrips	CW_TL	13.00	5.56
tblVehicleTrips	CW_TL	13.00	5.56
tblVehicleTrips	HO_TL	5.00	5.56
tblVehicleTrips	HO_TL	5.00	5.56
tblVehicleTrips	HS_TL	5.00	5.56
tblVehicleTrips	HS_TL	5.00	5.56
tblVehicleTrips	HW_TL	13.00	5.56
tblVehicleTrips	HW_TL	13.00	5.56
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	25.34
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	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
Year	lb/day										lb/day					
2017	24.8090	102.0823	296.5842	0.4620	31.3800	2.7532	34.1332	8.3953	2.5654	10.9607	0.0000	39,911.0806	39,911.0806	2.1188	0.0000	39,955.5762
Total	**24.8090**	**102.0823**	**296.5842**	**0.4620**	**31.3800**	**2.7532**	**34.1332**	**8.3953**	**2.5654**	**10.9607**	**0.0000**	**39,911.0806**	**39,911.0806**	**2.1188**	**0.0000**	**39,955.5762**

Mitigated Construction

	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
Year	lb/day										lb/day					
2017	24.8090	102.0823	296.5842	0.4620	31.3800	2.7532	34.1332	8.3953	2.5654	10.9607	0.0000	39,911.0806	39,911.0806	2.1188	0.0000	39,955.5762
Total	**24.8090**	**102.0823**	**296.5842**	**0.4620**	**31.3800**	**2.7532**	**34.1332**	**8.3953**	**2.5654**	**10.9607**	**0.0000**	**39,911.0806**	**39,911.0806**	**2.1188**	**0.0000**	**39,955.5762**

	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**	**N20**	**CO2e**
Percent Reduction	**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**	**0.00**

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	9,648.7250	112.0657	10,815.6687	0.0275		1,416.5091	1,416.5091		1,416.4600	1,416.4600	138,456.0937	74,548.5576	213,004.6513	2.3682	13.5662	217,259.9109
Energy	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
Mobile	365.0866	713.0516	3,150.1998	4.2078	298.4469	7.9470	306.3939	79.8064	7.2932	87.0997		370,218.2790	370,218.2790	18.6732		370,610.4165
Total	**10,020.4676**	**882.0912**	**13,990.7690**	**4.5984**	**298.4469**	**1,429.0548**	**1,727.5017**	**79.8064**	**1,428.3520**	**1,508.1584**	**138,456.0937**	**517,378.1634**	**655,834.2570**	**22.4331**	**14.8974**	**660,923.5545**

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	9,648.7250	112.0657	10,815.6687	0.0275		1,416.5091	1,416.5091		1,416.4600	1,416.4600	138,456.0937	74,548.5576	213,004.6513	2.3682	13.5662	217,259.9109
Energy	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
Mobile	354.3768	644.9191	2,939.8871	3.7209	261.9428	7.0828	269.0256	70.0450	6.4996	76.5446		327,177.3324	327,177.3324	16.8308		327,530.7795
Total	**10,009.7579**	**813.9586**	**13,780.4563**	**4.1115**	**261.9428**	**1,428.1906**	**1,690.1334**	**70.0450**	**1,427.5583**	**1,497.6033**	**138,456.0937**	**474,337.2168**	**612,793.3105**	**20.5907**	**14.8974**	**617,843.9175**

	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	N20	CO2e
Percent Reduction	0.11	7.72	1.50	10.59	12.23	0.06	2.16	12.23	0.06	0.70	0.00	8.32	6.56	8.21	0.00	6.52

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	2,812.00	786.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	10.2236	57.8529	123.0597	0.1329	3.5802	0.7694	4.3496	1.0223	0.7073	1.7295		13,013.2380	13,013.2380	0.1085		13,015.5164
Worker	11.4830	17.8238	155.3953	0.3024	27.7998	0.2026	28.0024	7.3731	0.1852	7.5583		24,258.0373	24,258.0373	1.3606		24,286.6108
Total	**21.7066**	**75.6767**	**278.4551**	**0.4352**	**31.3800**	**0.9720**	**32.3520**	**8.3953**	**0.8924**	**9.2878**		**37,271.2753**	**37,271.2753**	**1.4691**		**37,302.1272**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.805 3	2,639.805 3	0.6497		2,653.449 0
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.805 3**	**2,639.805 3**	**0.6497**		**2,653.449 0**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	10.2236	57.8529	123.0597	0.1329	3.5802	0.7694	4.3496	1.0223	0.7073	1.7295		13,013.23 80	13,013.23 80	0.1085		13,015.51 64
Worker	11.4830	17.8238	155.3953	0.3024	27.7998	0.2026	28.0024	7.3731	0.1852	7.5583		24,258.03 73	24,258.03 73	1.3606		24,286.61 08
Total	**21.7066**	**75.6767**	**278.4551**	**0.4352**	**31.3800**	**0.9720**	**32.3520**	**8.3953**	**0.8924**	**9.2878**		**37,271.27 53**	**37,271.27 53**	**1.4691**		**37,302.12 72**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

	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	354.3768	644.9191	2,939.887 1	3.7209	261.9428	7.0828	269.0256	70.0450	6.4996	76.5446		327,177.3 324	327,177.3 324	16.8308		327,530.7 795
Unmitigated	365.0866	713.0516	3,150.199 8	4.2078	298.4469	7.9470	306.3939	79.8064	7.2932	87.0997		370,218.2 790	370,218.2 790	18.6732		370,610.4 165

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,674.30	6,408.20	5432.65	10,324,521	9,061,691
General Office Building	5,856.07	547.71	226.48	7,109,814	6,240,186
Single Family Housing	44,438.94	54,694.08	47586.02	83,308,905	73,119,087
Strip Mall	18,850.46	18,463.97	8972.86	19,445,438	17,066,996
Total	74,819.78	80,113.96	62,218.00	120,188,678	105,487,960

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.56	5.56	5.56	35.80	21.00	43.20	86	11	3
General Office Building	5.56	5.56	5.56	33.00	48.00	19.00	77	19	4
Single Family Housing	5.56	5.56	5.56	35.80	21.00	43.20	86	11	3
Strip Mall	5.56	5.56	5.56	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455937	0.042338	0.214948	0.150714	0.068093	0.009944	0.017510	0.022507	0.002330	0.001401	0.008743	0.000855	0.004680

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	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	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
NaturalGas Unmitigated	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272

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/yr	lb/day										lb/day					
Single Family Housing	573079	6.1803	52.8132	22.4737	0.3371		4.2700	4.2700		4.2700	4.2700		67,421.1062	67,421.1062	1.2922	1.2361	67,831.4198
Strip Mall	3513.6	0.0379	0.3445	0.2894	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.3647	413.3647	7.9200e-003	7.5800e-003	415.8804
Apartments Low Rise	27965.6	0.3016	2.5772	1.0967	0.0165		0.2084	0.2084		0.2084	0.2084		3,290.0690	3,290.0690	0.0631	0.0603	3,310.0919
General Office Building	12637.7	0.1363	1.2390	1.0408	7.4300e-003		0.0942	0.0942		0.0942	0.0942		1,486.7868	1,486.7868	0.0285	0.0273	1,495.8351
Total		**6.6560**	**56.9739**	**24.9005**	**0.3631**		**4.5987**	**4.5987**		**4.5987**	**4.5987**		**72,611.3268**	**72,611.3268**	**1.3917**	**1.3312**	**73,053.2272**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	573.079	6.1803	52.8132	22.4737	0.3371		4.2700	4.2700		4.2700	4.2700		67,421.1062	67,421.1062	1.2922	1.2361	67,831.4198
Strip Mall	3.5136	0.0379	0.3445	0.2894	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.3647	413.3647	7.9200e-003	7.5800e-003	415.8804
Apartments Low Rise	27.9656	0.3016	2.5772	1.0967	0.0165		0.2084	0.2084		0.2084	0.2084		3,290.0690	3,290.0690	0.0631	0.0603	3,310.0919
General Office Building	12.6377	0.1363	1.2390	1.0408	7.4300e-003		0.0942	0.0942		0.0942	0.0942		1,486.7868	1,486.7868	0.0285	0.0273	1,495.8351
Total		**6.6560**	**56.9739**	**24.9005**	**0.3631**		**4.5987**	**4.5987**		**4.5987**	**4.5987**		**72,611.3268**	**72,611.3268**	**1.3917**	**1.3312**	**73,053.2272**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	9,648.7250	112.0657	10,815.6687	0.0275		1,416.5091	1,416.5091		1,416.4600	1,416.4600	138,456.0937	74,548.5576	213,004.6513	2.3682	13.5662	217,259.9109
Unmitigated	9,648.7250	112.0657	10,815.6687	0.0275		1,416.5091	1,416.5091		1,416.4600	1,416.4600	138,456.0937	74,548.5576	213,004.6513	2.3682	13.5662	217,259.9109

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	57.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	242.5069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	9,332.1727	105.8785	10,286.8414	0.0000		1,413.6563	1,413.6563		1,413.6072	1,413.6072	138,456.0937	73,609.4118	212,065.5054	1.4109	13.5662	216,300.6614
Landscaping	16.6588	6.1872	528.8273	0.0275		2.8528	2.8528		2.8528	2.8528		939.1459	939.1459	0.9573		959.2495
Total	**9,648.7250**	**112.0657**	**10,815.6687**	**0.0275**		**1,416.5091**	**1,416.5091**		**1,416.4600**	**1,416.4600**	**138,456.0937**	**74,548.5576**	**213,004.6513**	**2.3682**	**13.5662**	**217,259.9109**

6.2 Area by SubCategory

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	57.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	242.5069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	9,332.1727	105.8785	10,286.8414	0.0000		1,413.6563	1,413.6563		1,413.6072	1,413.6072	138,456.0937	73,609.4118	212,065.5054	1.4109	13.5662	216,300.6614
Landscaping	16.6588	6.1872	528.8273	0.0275		2.8528	2.8528		2.8528	2.8528		939.1459	939.1459	0.9573		959.2495
Total	**9,648.7250**	**112.0657**	**10,815.6687**	**0.0275**		**1,416.5091**	**1,416.5091**		**1,416.4600**	**1,416.4600**	**138,456.0937**	**74,548.5576**	**213,004.6513**	**2.3682**	**13.5662**	**217,259.9109**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

ATTACHMENT 2

CalEEMod Output – Year 2035 LOCP Emissions

EXISTING LAND USES - 2016

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	9,649	112	10,816	0	1,417	1,416
Energy	7	57	25	0	5	5
Mobile	354	645	2,940	4	269	77
Total	10,010	814	13,780	4	1,690	1,498

ADOPTED ESTERO AREA PLAN - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	13,921	162	15,604	0	2,045	2,045
Energy	9	76	33	0	6	6
Mobile	232	317	1,752	5	343	96
Total	14,162	555	17,390	5	2,395	2,147

EXISTING LAND USES - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	9,648	112	10,807	0	1,417	1,416
Energy	7	57	25	0	5	5
Mobile	164	228	1,250	3	250	70
Total	9,818	396	12,081	4	1,671	1,491

ADOPTED ESTERO AREA PLAN NET INCREASE OVER EXISTING LAND USES - 2(

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	4,274	50	4,798	0	629	629
Energy	2	19	8	0	2	2
Mobile	68	89	503	1	94	26
Total	4,344	158	5,309	1	724	657

PROPOSED LOCP - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	12,480	145	13,987	0	1,833	1,833
Energy	8	69	30	0	6	6
Mobile	216	294	1,629	4	317	89
Total	12,704	508	15,646	5	2,156	1,928
Change	-10.3%	-8.5%	-10.0%	-7.8%	-10.0%	-10.2%

EXISTING LAND USES - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	9,648	112	10,807	0	1,417	1,416
Energy	7	57	25	0	5	5
Mobile	164	228	1,250	3	250	70
Total	9,818	396	12,081	4	1,671	1,491

PROPOSED LOCP NET INCREASE OVER EXISTING LAND USES - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	2,832	33	3,180	0	417	417
Energy	1	12	5	0	1	1
Mobile	52	66	379	1	67	19
Total	2,886	111	3,565	1	485	437

7773 Los Osos - Existing 2035

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	231.10	1000sqft	5.31	231,100.00	0
Apartments Low Rise	895.00	Dwelling Unit	55.94	895,000.00	2560
Single Family Housing	5,426.00	Dwelling Unit	1,761.69	9,766,800.00	15518
Strip Mall	439.20	1000sqft	10.08	439,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	287.06	**CH4 Intensity (lb/MWhr)**	0.013	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2030 50% required
CalEEMod accounts for 14.1%
Additional 35.9% reduction applied
(287.06, 0.013, 0.003)

Land Use - Existing land uses

Construction Phase - Existing uses - no construction

Vehicle Trips - TIA
2035 trip length = 5.20 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - Historical data

Mobile Land Use Mitigation -

Area Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	155,000.00	1.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	492.00
tblFireplaces	NumberGas	0.00	2,984.00
tblFireplaces	NumberNoFireplace	0.00	90.00

tblFireplaces	NumberNoFireplace	0.00	543.00
tblFireplaces	NumberWood	0.00	313.00
tblFireplaces	NumberWood	0.00	1,899.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.013
tblProjectCharacteristics	CO2IntensityFactor	641.35	287.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	25.34
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	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
Year	lb/day										lb/day					
2017	24.8090	102.0823	296.5842	0.4620	31.3800	2.7532	34.1332	8.3953	2.5654	10.9607	0.0000	39,911.0806	39,911.0806	2.1188	0.0000	39,955.5762
Total	**24.8090**	**102.0823**	**296.5842**	**0.4620**	**31.3800**	**2.7532**	**34.1332**	**8.3953**	**2.5654**	**10.9607**	**0.0000**	**39,911.0806**	**39,911.0806**	**2.1188**	**0.0000**	**39,955.5762**

Mitigated Construction

	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
Year	lb/day										lb/day					
2017	24.8090	102.0823	296.5842	0.4620	31.3800	2.7532	34.1332	8.3953	2.5654	10.9607	0.0000	39,911.0806	39,911.0806	2.1188	0.0000	39,955.5762
Total	**24.8090**	**102.0823**	**296.5842**	**0.4620**	**31.3800**	**2.7532**	**34.1332**	**8.3953**	**2.5654**	**10.9607**	**0.0000**	**39,911.0806**	**39,911.0806**	**2.1188**	**0.0000**	**39,955.5762**

	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	N20	CO2e
Percent Reduction	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	0.00

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	9,647.6100	111.8745	10,806.5669	0.0275		1,416.5485	1,416.5485		1,416.4994	1,416.4994	138,456.0937	74,548.5576	213,004.6512	2.3051	13.5662	217,258.5865
Energy	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
Mobile	168.2919	247.5509	1,328.0540	3.9515	279.2454	5.1062	284.3517	74.6738	4.7143	79.3881		285,247.2284	285,247.2284	7.4426		285,403.5232
Total	**9,822.5579**	**416.3992**	**12,159.5214**	**4.3421**	**279.2454**	**1,426.2534**	**1,705.4989**	**74.6738**	**1,425.8124**	**1,500.4863**	**138,456.0937**	**432,407.1127**	**570,863.2064**	**11.1394**	**14.8974**	**575,715.3368**

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	9,647.6100	111.8745	10,806.5669	0.0275		1,416.5485	1,416.5485		1,416.4994	1,416.4994	138,456.0937	74,548.5576	213,004.6512	2.3051	13.5662	217,258.5865
Energy	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
Mobile	163.9197	227.5755	1,249.6165	3.4948	245.0899	4.5988	249.6887	65.5402	4.2463	69.7865		252,204.3552	252,204.3552	6.6615		252,344.2468
Total	**9,818.1857**	**396.4238**	**12,081.0839**	**3.8854**	**245.0899**	**1,425.7460**	**1,670.8359**	**65.5402**	**1,425.3444**	**1,490.8846**	**138,456.0937**	**399,364.2395**	**537,820.3332**	**10.3583**	**14.8974**	**542,656.0605**

	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	N20	CO2e
Percent Reduction	**0.04**	**4.80**	**0.65**	**10.52**	**12.23**	**0.04**	**2.03**	**12.23**	**0.03**	**0.64**	**0.00**	**7.64**	**5.79**	**7.01**	**0.00**	**5.74**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	2,812.00	786.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	10.2236	57.8529	123.0597	0.1329	3.5802	0.7694	4.3496	1.0223	0.7073	1.7295		13,013.2380	13,013.2380	0.1085		13,015.5164
Worker	11.4830	17.8238	155.3953	0.3024	27.7998	0.2026	28.0024	7.3731	0.1852	7.5583		24,258.0373	24,258.0373	1.3606		24,286.6108
Total	**21.7066**	**75.6767**	**278.4551**	**0.4352**	**31.3800**	**0.9720**	**32.3520**	**8.3953**	**0.8924**	**9.2878**		**37,271.2753**	**37,271.2753**	**1.4691**		**37,302.1272**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	10.2236	57.8529	123.0597	0.1329	3.5802	0.7694	4.3496	1.0223	0.7073	1.7295		13,013.2380	13,013.2380	0.1085		13,015.5164
Worker	11.4830	17.8238	155.3953	0.3024	27.7998	0.2026	28.0024	7.3731	0.1852	7.5583		24,258.0373	24,258.0373	1.3606		24,286.6108
Total	**21.7066**	**75.6767**	**278.4551**	**0.4352**	**31.3800**	**0.9720**	**32.3520**	**8.3953**	**0.8924**	**9.2878**		**37,271.2753**	**37,271.2753**	**1.4691**		**37,302.1272**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

	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	163.9197	227.5755	1,249.6165	3.4948	245.0899	4.5988	249.6887	65.5402	4.2463	69.7865		252,204.3552	252,204.3552	6.6615		252,344.2468
Unmitigated	168.2919	247.5509	1,328.0540	3.9515	279.2454	5.1062	284.3517	74.6738	4.7143	79.3881		285,247.2284	285,247.2284	7.4426		285,403.5232

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,674.30	6,408.20	5432.65	9,656,433	8,475,319
General Office Building	5,856.07	547.71	226.48	6,649,871	5,836,501
Single Family Housing	44,438.94	54,694.08	47586.02	77,918,081	68,387,634
Strip Mall	18,850.46	18,463.97	8972.86	18,192,527	15,967,332
Total	74,819.78	80,113.96	62,218.00	112,416,911	98,666,786

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
General Office Building	5.20	5.20	5.20	33.00	48.00	19.00	77	19	4
Single Family Housing	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
Strip Mall	5.20	5.20	5.20	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.457495	0.042122	0.213987	0.146817	0.067454	0.009853	0.017888	0.026015	0.002466	0.001424	0.009078	0.000704	0.004697

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	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	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
NaturalGas Unmitigated	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272

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/yr	lb/day										lb/day					
Single Family Housing	573079	6.1803	52.8132	22.4737	0.3371		4.2700	4.2700		4.2700	4.2700		67,421.1062	67,421.1062	1.2922	1.2361	67,831.4198
Strip Mall	3513.6	0.0379	0.3445	0.2894	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.3647	413.3647	7.9200e-003	7.5800e-003	415.8804
Apartments Low Rise	27965.6	0.3016	2.5772	1.0967	0.0165		0.2084	0.2084		0.2084	0.2084		3,290.0690	3,290.0690	0.0631	0.0603	3,310.0919
General Office Building	12637.7	0.1363	1.2390	1.0408	7.4300e-003		0.0942	0.0942		0.0942	0.0942		1,486.7868	1,486.7868	0.0285	0.0273	1,495.8351
Total		**6.6560**	**56.9739**	**24.9005**	**0.3631**		**4.5987**	**4.5987**		**4.5987**	**4.5987**		**72,611.3268**	**72,611.3268**	**1.3917**	**1.3312**	**73,053.2272**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	573.079	6.1803	52.8132	22.4737	0.3371		4.2700	4.2700		4.2700	4.2700		67,421.1062	67,421.1062	1.2922	1.2361	67,831.4198
Strip Mall	3.5136	0.0379	0.3445	0.2894	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.3647	413.3647	7.9200e-003	7.5800e-003	415.8804
Apartments Low Rise	27.9656	0.3016	2.5772	1.0967	0.0165		0.2084	0.2084		0.2084	0.2084		3,290.0690	3,290.0690	0.0631	0.0603	3,310.0919
General Office Building	12.6377	0.1363	1.2390	1.0408	7.4300e-003		0.0942	0.0942		0.0942	0.0942		1,486.7868	1,486.7868	0.0285	0.0273	1,495.8351
Total		**6.6560**	**56.9739**	**24.9005**	**0.3631**		**4.5987**	**4.5987**		**4.5987**	**4.5987**		**72,611.3268**	**72,611.3268**	**1.3917**	**1.3312**	**73,053.2272**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	9,647.6100	111.8745	10,806.5669	0.0275		1,416.5485	1,416.5485		1,416.4994	1,416.4994	138,456.0937	74,548.5576	213,004.6512	2.3051	13.5662	217,258.5865
Unmitigated	9,647.6100	111.8745	10,806.5669	0.0275		1,416.5485	1,416.5485		1,416.4994	1,416.4994	138,456.0937	74,548.5576	213,004.6512	2.3051	13.5662	217,258.5865

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	57.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	242.5069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	9,332.1727	105.8785	10,286.8414	0.0000		1,413.6563	1,413.6563		1,413.6072	1,413.6072	138,456.0937	73,609.4118	212,065.5054	1.4109	13.5662	216,300.6614
Landscaping	15.5438	5.9960	519.7255	0.0275		2.8922	2.8922		2.8922	2.8922		939.1458	939.1458	0.8943		957.9251
Total	**9,647.6100**	**111.8745**	**10,806.5669**	**0.0275**		**1,416.5485**	**1,416.5485**		**1,416.4994**	**1,416.4994**	**138,456.0937**	**74,548.5575**	**213,004.6512**	**2.3051**	**13.5662**	**217,258.5865**

6.2 Area by SubCategory

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	57.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	242.5069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	9,332.172 7	105.8785	10,286.84 14	0.0000		1,413.656 3	1,413.656 3		1,413.607 2	1,413.6072	138,456.0 937	73,609.411 8	212,065.5 054	1.4109	13.5662	216,300.6 614
Landscaping	15.5438	5.9960	519.7255	0.0275		2.8922	2.8922		2.8922	2.8922		939.1458	939.1458	0.8943		957.9251
Total	**9,647.610 0**	**111.8745**	**10,806.56 69**	**0.0275**		**1,416.548 5**	**1,416.548 5**		**1,416.499 4**	**1,416.4994**	**138,456.0 937**	**74,548.55 75**	**213,004.6 512**	**2.3051**	**13.5662**	**217,258.5 865**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

7773 Los Osos - Proposed LOCP Net Increase 2035

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	115.10	1000sqft	2.64	115,100.00	0
Racquet Club	20.00	1000sqft	0.46	20,000.00	0
Apartments Low Rise	800.00	Dwelling Unit	50.00	800,000.00	2288
Single Family Housing	1,061.00	Dwelling Unit	344.48	1,909,800.00	3034
Strip Mall	228.90	1000sqft	5.25	228,900.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 3.2 **Precipitation Freq (Days)** 44

Climate Zone 4 **Operational Year** 2035

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 287.06 **CH4 Intensity (lb/MWhr)** 0.013 **N2O Intensity (lb/MWhr)** 0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2030 50% required
CalEEMod accounts for 14.1%
Additional 35.9% reduction applied
(287.06, 0.013, 0.003)

Land Use - Proposed LOCP net increase over existing land uses

Construction Phase - Construction calculated seperately

Vehicle Trips - TIA
2035 trip length = 5.20 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - 2013 Title 24

Water And Wastewater - CalGreen 20% decrease in indoor water use

Mobile Land Use Mitigation -

Area Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	7,750.00	1.00
tblEnergyUse	T24E	236.91	181.71
tblEnergyUse	T24E	7.46	5.83
tblEnergyUse	T24E	1.81	1.42
tblEnergyUse	T24E	368.61	234.44
tblEnergyUse	T24E	3.37	2.64
tblEnergyUse	T24NG	8,283.47	7,968.70
tblEnergyUse	T24NG	17.16	14.28
tblEnergyUse	T24NG	20.74	17.26

tblEnergyUse	T24NG	29,406.10	27,494.70
tblEnergyUse	T24NG	2.49	2.07
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	440.00
tblFireplaces	NumberGas	0.00	584.00
tblFireplaces	NumberNoFireplace	0.00	80.00
tblFireplaces	NumberNoFireplace	0.00	106.00
tblFireplaces	NumberWood	0.00	280.00
tblFireplaces	NumberWood	0.00	371.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.013
tblProjectCharacteristics	CO2IntensityFactor	641.35	287.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	0.00
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	CW_TL	13.00	0.00
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20

tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	19.29
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWater	IndoorWaterUseRate	52,123,220.50	41,698,576.40
tblWater	IndoorWaterUseRate	20,457,154.39	16,365,723.51
tblWater	IndoorWaterUseRate	1,182,862.88	946,290.30
tblWater	IndoorWaterUseRate	69,128,421.18	55,302,736.94
tblWater	IndoorWaterUseRate	16,955,200.17	13,564,160.14
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	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
Year	lb/day										lb/day					
2017	10.8651	52.2893	118.1407	0.1863	11.8172	2.1123	13.9295	3.1581	1.9769	5.1350	0.0000	16,210.1187	16,210.1187	1.2061	0.0000	16,235.4467
Total	**10.8651**	**52.2893**	**118.1407**	**0.1863**	**11.8172**	**2.1123**	**13.9295**	**3.1581**	**1.9769**	**5.1350**	**0.0000**	**16,210.1187**	**16,210.1187**	**1.2061**	**0.0000**	**16,235.4467**

Mitigated Construction

	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
Year	lb/day										lb/day					
2017	10.8651	52.2893	118.1407	0.1863	11.8172	2.1123	13.9295	3.1581	1.9769	5.1350	0.0000	16,210.1187	16,210.1187	1.2061	0.0000	16,235.4467
Total	**10.8651**	**52.2893**	**118.1407**	**0.1863**	**11.8172**	**2.1123**	**13.9295**	**3.1581**	**1.9769**	**5.1350**	**0.0000**	**16,210.1187**	**16,210.1187**	**1.2061**	**0.0000**	**16,235.4467**

	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**	**N20**	**CO2e**
Percent Reduction	**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**	**0.00**

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	2,832.1760	32.9259	3,180.4887	8.1100e-003		416.8973	416.8973		416.8829	416.8829	40,748.1542	21,961.2414	62,709.3955	0.6790	3.9930	63,961.4778
Energy	1.3705	11.7531	5.2911	0.0748		0.9469	0.9469		0.9469	0.9469		14,950.3762	14,950.3762	0.2866	0.2741	15,041.3617
Mobile	55.2060	79.2675	429.3634	1.2456	87.7529	1.6214	89.3743	23.4663	1.4970	24.9633		89,903.3073	89,903.3073	2.3573		89,952.8113
Total	**2,888.7525**	**123.9465**	**3,615.1432**	**1.3284**	**87.7529**	**419.4656**	**507.2185**	**23.4663**	**419.3267**	**442.7930**	**40,748.1542**	**126,814.9249**	**167,563.0790**	**3.3229**	**4.2671**	**168,955.6508**

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	2,832.1760	32.9259	3,180.4887	8.1100e-003		416.8973	416.8973		416.8829	416.8829	40,748.1542	21,961.2414	62,709.3955	0.6790	3.9930	63,961.4778
Energy	1.3705	11.7531	5.2911	0.0748		0.9469	0.9469		0.9469	0.9469		14,950.3762	14,950.3762	0.2866	0.2741	15,041.3617
Mobile	52.3953	66.4260	378.9387	0.9520	65.7955	1.2952	67.0907	17.5946	1.1961	18.7907		68,661.2012	68,661.2012	1.8552		68,700.1602
Total	**2,885.9418**	**111.1050**	**3,564.7185**	**1.0348**	**65.7955**	**419.1394**	**484.9349**	**17.5946**	**419.0258**	**436.6204**	**40,748.1542**	**105,572.8188**	**146,320.9729**	**2.8207**	**4.2671**	**147,702.9997**

	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	N20	CO2e
Percent Reduction	0.10	10.36	1.39	22.10	25.02	0.08	4.39	25.02	0.07	1.39	0.00	16.75	12.68	15.11	0.00	12.58

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	1,076.00	259.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3689	19.0635	40.5502	0.0438	1.1797	0.2535	1.4333	0.3369	0.2331	0.5699		4,288.0772	4,288.0772	0.0358		4,288.8279
Worker	4.3939	6.8202	59.4614	0.1157	10.6375	0.0775	10.7150	2.8213	0.0709	2.8921		9,282.2362	9,282.2362	0.5206		9,293.1697
Total	**7.7628**	**25.8837**	**100.0116**	**0.1595**	**11.8172**	**0.3311**	**12.1483**	**3.1581**	**0.3039**	**3.4620**		**13,570.3133**	**13,570.3133**	**0.5564**		**13,581.9976**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.3689	19.0635	40.5502	0.0438	1.1797	0.2535	1.4333	0.3369	0.2331	0.5699		4,288.0772	4,288.0772	0.0358		4,288.8279
Worker	4.3939	6.8202	59.4614	0.1157	10.6375	0.0775	10.7150	2.8213	0.0709	2.8921		9,282.2362	9,282.2362	0.5206		9,293.1697
Total	**7.7628**	**25.8837**	**100.0116**	**0.1595**	**11.8172**	**0.3311**	**12.1483**	**3.1581**	**0.3039**	**3.4620**		**13,570.3133**	**13,570.3133**	**0.5564**		**13,581.9976**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

	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	52.3953	66.4260	378.9387	0.9520	65.7955	1.2952	67.0907	17.5946	1.1961	18.7907		68,661.2012	68,661.2012	1.8552		68,700.1602
Unmitigated	55.2060	79.2675	429.3634	1.2456	87.7529	1.6214	89.3743	23.4663	1.4970	24.9633		89,903.3073	89,903.3073	2.3573		89,952.8113

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,072.00	5,728.00	4856.00	8,631,448	6,471,701
General Office Building	2,220.28	272.79	112.80	2,541,609	1,905,652
Racquet Club	0.00	0.00	0.00		
Single Family Housing	8,689.59	10,694.88	9304.97	15,236,101	11,423,749
Strip Mall	9,824.39	9,622.96	4676.43	9,481,488	7,109,045
Total	25,806.26	26,318.62	18,950.20	35,890,646	26,910,147

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
General Office Building	5.20	5.20	5.20	33.00	48.00	19.00	77	19	4
Racquet Club	0.00	0.00	0.00	11.50	69.50	19.00	52	39	9
Single Family Housing	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
Strip Mall	5.20	5.20	5.20	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.457495	0.042122	0.213987	0.146817	0.067454	0.009853	0.017888	0.026015	0.002466	0.001424	0.009078	0.000704	0.004697

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	1.3705	11.7531	5.2911	0.0748		0.9469	0.9469		0.9469	0.9469		14,950.3762	14,950.3762	0.2866	0.2741	15,041.3617
NaturalGas Unmitigated	1.3705	11.7531	5.2911	0.0748		0.9469	0.9469		0.9469	0.9469		14,950.3762	14,950.3762	0.2866	0.2741	15,041.3617

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/yr	lb/day										lb/day					
General Office Building	4522.01	0.0488	0.4433	0.3724	2.6600e-003		0.0337	0.0337		0.0337	0.0337		532.0013	532.0013	0.0102	9.7500e-003	535.2390
Racquet Club	1311.23	0.0141	0.1286	0.1080	7.7000e-004		9.7700e-003	9.7700e-003		9.7700e-003	9.7700e-003		154.2627	154.2627	2.9600e-003	2.8300e-003	155.2015
Single Family Housing	97006.1	1.0461	8.9398	3.8042	0.0571		0.7228	0.7228		0.7228	0.7228		11,412.4819	11,412.4819	0.2187	0.2092	11,481.9364
Strip Mall	1298.15	0.0140	0.1273	0.1069	7.6000e-004		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003		152.7230	152.7230	2.9300e-003	2.8000e-003	153.6524
Apartments Low Rise	22940.7	0.2474	2.1141	0.8996	0.0135		0.1709	0.1709		0.1709	0.1709		2,698.9073	2,698.9073	0.0517	0.0495	2,715.3324
Total		**1.3705**	**11.7531**	**5.2911**	**0.0747**		**0.9469**	**0.9469**		**0.9469**	**0.9469**		**14,950.3762**	**14,950.3762**	**0.2866**	**0.2741**	**15,041.3617**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Racquet Club	1.31123	0.0141	0.1286	0.1080	7.7000e-004		9.7700e-003	9.7700e-003		9.7700e-003	9.7700e-003		154.2627	154.2627	2.9600e-003	2.8300e-003	155.2015
Single Family Housing	97.0061	1.0461	8.9398	3.8042	0.0571		0.7228	0.7228		0.7228	0.7228		11,412.4819	11,412.4819	0.2187	0.2092	11,481.9364
Strip Mall	1.29815	0.0140	0.1273	0.1069	7.6000e-004		9.6700e-003	9.6700e-003		9.6700e-003	9.6700e-003		152.7230	152.7230	2.9300e-003	2.8000e-003	153.6524
Apartments Low Rise	22.9407	0.2474	2.1141	0.8996	0.0135		0.1709	0.1709		0.1709	0.1709		2,698.9073	2,698.9073	0.0517	0.0495	2,715.3324
General Office Building	4.52201	0.0488	0.4433	0.3724	2.6600e-003		0.0337	0.0337		0.0337	0.0337		532.0013	532.0013	0.0102	9.7500e-003	535.2390
Total		**1.3705**	**11.7531**	**5.2911**	**0.0747**		**0.9469**	**0.9469**		**0.9469**	**0.9469**		**14,950.3762**	**14,950.3762**	**0.2866**	**0.2741**	**15,041.3617**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	2,832.1760	32.9259	3,180.4887	8.1100e-003		416.8973	416.8973		416.8829	416.8829	40,748.1542	21,961.2414	62,709.3955	0.6790	3.9930	63,961.4778
Unmitigated	2,832.1760	32.9259	3,180.4887	8.1100e-003		416.8973	416.8973		416.8829	416.8829	40,748.1542	21,961.2414	62,709.3955	0.6790	3.9930	63,961.4778

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	15.3230					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	65.7793					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2,746.4958	31.1604	3,027.4566	0.0000		416.0458	416.0458		416.0313	416.0313	40,748.1542	21,684.7059	62,432.8600	0.4156	3.9930	63,679.4114
Landscaping	4.5779	1.7655	153.0321	8.1100e-003		0.8516	0.8516		0.8516	0.8516		276.5355	276.5355	0.2634		282.0664
Total	**2,832.1760**	**32.9259**	**3,180.4887**	**8.1100e-003**		**416.8973**	**416.8973**		**416.8829**	**416.8829**	**40,748.1542**	**21,961.2414**	**62,709.3955**	**0.6790**	**3.9930**	**63,961.4778**

6.2 Area by SubCategory

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	15.3230					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	65.7793					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	2,746.4958	31.1604	3,027.4566	0.0000		416.0458	416.0458		416.0313	416.0313	40,748.1542	21,684.7059	62,432.8600	0.4156	3.9930	63,679.4114
Landscaping	4.5779	1.7655	153.0321	8.1100e-003		0.8516	0.8516		0.8516	0.8516		276.5355	276.5355	0.2634		282.0664
Total	**2,832.1760**	**32.9259**	**3,180.4887**	**8.1100e-003**		**416.8973**	**416.8973**		**416.8829**	**416.8829**	**40,748.1542**	**21,961.2414**	**62,709.3955**	**0.6790**	**3.9930**	**63,961.4778**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

ATTACHMENT 3

CalEEMod Output – Year 2035
Estero Area Plan Emissions

EXISTING LAND USES - 2016

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	9,649	112	10,816	0	1,417	1,416
Energy	7	57	25	0	5	5
Mobile	354	645	2,940	4	269	77
Total	10,010	814	13,780	4	1,690	1,498

ADOPTED ESTERO AREA PLAN - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	13,921	162	15,604	0	2,045	2,045
Energy	9	76	33	0	6	6
Mobile	232	317	1,752	5	343	96
Total	14,162	555	17,390	5	2,395	2,147

EXISTING LAND USES - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	9,648	112	10,807	0	1,417	1,416
Energy	7	57	25	0	5	5
Mobile	164	228	1,250	3	250	70
Total	9,818	396	12,081	4	1,671	1,491

ADOPTED ESTERO AREA PLAN NET INCREASE OVER EXISTING LAND USES - 2(

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	4,274	50	4,798	0	629	629
Energy	2	19	8	0	2	2
Mobile	68	89	503	1	94	26
Total	4,344	158	5,309	1	724	657

PROPOSED LOCP - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	12,480	145	13,987	0	1,833	1,833
Energy	8	69	30	0	6	6
Mobile	216	294	1,629	4	317	89
Total	12,704	508	15,646	5	2,156	1,928
Change	-10.3%	-8.5%	-10.0%	-7.8%	-10.0%	-10.2%

EXISTING LAND USES - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	9,648	112	10,807	0	1,417	1,416
Energy	7	57	25	0	5	5
Mobile	164	228	1,250	3	250	70
Total	9,818	396	12,081	4	1,671	1,491

PROPOSED LOCP NET INCREASE OVER EXISTING LAND USES - 2035

	ROG	Nox	CO	SO2	PM10	PM2.5
Area	2,832	33	3,180	0	417	417
Energy	1	12	5	0	1	1
Mobile	52	66	379	1	67	19
Total	2,886	111	3,565	1	485	437

7773 Los Osos - Existing 2035

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	231.10	1000sqft	5.31	231,100.00	0
Apartments Low Rise	895.00	Dwelling Unit	55.94	895,000.00	2560
Single Family Housing	5,426.00	Dwelling Unit	1,761.69	9,766,800.00	15518
Strip Mall	439.20	1000sqft	10.08	439,200.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 3.2 **Precipitation Freq (Days)** 44

Climate Zone 4 **Operational Year** 2035

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 287.06 **CH4 Intensity (lb/MWhr)** 0.013 **N2O Intensity (lb/MWhr)** 0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2030 50% required
CalEEMod accounts for 14.1%
Additional 35.9% reduction applied
(287.06, 0.013, 0.003)

Land Use - Existing land uses

Construction Phase - Existing uses - no construction

Vehicle Trips - TIA
2035 trip length = 5.20 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - Historical data

Mobile Land Use Mitigation -

Area Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	155,000.00	1.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	492.00
tblFireplaces	NumberGas	0.00	2,984.00
tblFireplaces	NumberNoFireplace	0.00	90.00

tblFireplaces	NumberNoFireplace	0.00	543.00
tblFireplaces	NumberWood	0.00	313.00
tblFireplaces	NumberWood	0.00	1,899.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.013
tblProjectCharacteristics	CO2IntensityFactor	641.35	287.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	25.34
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	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
Year	lb/day										lb/day					
2017	24.8090	102.0823	296.5842	0.4620	31.3800	2.7532	34.1332	8.3953	2.5654	10.9607	0.0000	39,911.0806	39,911.0806	2.1188	0.0000	39,955.5762
Total	**24.8090**	**102.0823**	**296.5842**	**0.4620**	**31.3800**	**2.7532**	**34.1332**	**8.3953**	**2.5654**	**10.9607**	**0.0000**	**39,911.0806**	**39,911.0806**	**2.1188**	**0.0000**	**39,955.5762**

Mitigated Construction

	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
Year	lb/day										lb/day					
2017	24.8090	102.0823	296.5842	0.4620	31.3800	2.7532	34.1332	8.3953	2.5654	10.9607	0.0000	39,911.0806	39,911.0806	2.1188	0.0000	39,955.5762
Total	**24.8090**	**102.0823**	**296.5842**	**0.4620**	**31.3800**	**2.7532**	**34.1332**	**8.3953**	**2.5654**	**10.9607**	**0.0000**	**39,911.0806**	**39,911.0806**	**2.1188**	**0.0000**	**39,955.5762**

	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	N20	CO2e
Percent Reduction	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	0.00

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	9,647.6100	111.8745	10,806.5669	0.0275		1,416.5485	1,416.5485		1,416.4994	1,416.4994	138,456.0937	74,548.5576	213,004.6512	2.3051	13.5662	217,258.5865
Energy	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
Mobile	168.2919	247.5509	1,328.0540	3.9515	279.2454	5.1062	284.3517	74.6738	4.7143	79.3881		285,247.2284	285,247.2284	7.4426		285,403.5232
Total	**9,822.5579**	**416.3992**	**12,159.5214**	**4.3421**	**279.2454**	**1,426.2534**	**1,705.4989**	**74.6738**	**1,425.8124**	**1,500.4863**	**138,456.0937**	**432,407.1127**	**570,863.2064**	**11.1394**	**14.8974**	**575,715.3368**

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	9,647.6100	111.8745	10,806.5669	0.0275		1,416.5485	1,416.5485		1,416.4994	1,416.4994	138,456.0937	74,548.5576	213,004.6512	2.3051	13.5662	217,258.5865
Energy	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
Mobile	163.9197	227.5755	1,249.6165	3.4948	245.0899	4.5988	249.6887	65.5402	4.2463	69.7865		252,204.3552	252,204.3552	6.6615		252,344.2468
Total	**9,818.1857**	**396.4238**	**12,081.0839**	**3.8854**	**245.0899**	**1,425.7460**	**1,670.8359**	**65.5402**	**1,425.3444**	**1,490.8846**	**138,456.0937**	**399,364.2395**	**537,820.3332**	**10.3583**	**14.8974**	**542,656.0605**

	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	N20	CO2e
Percent Reduction	0.04	4.80	0.65	10.52	12.23	0.04	2.03	12.23	0.03	0.64	0.00	7.64	5.79	7.01	0.00	5.74

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	2,812.00	786.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	10.2236	57.8529	123.0597	0.1329	3.5802	0.7694	4.3496	1.0223	0.7073	1.7295		13,013.2380	13,013.2380	0.1085		13,015.5164
Worker	11.4830	17.8238	155.3953	0.3024	27.7998	0.2026	28.0024	7.3731	0.1852	7.5583		24,258.0373	24,258.0373	1.3606		24,286.6108
Total	**21.7066**	**75.6767**	**278.4551**	**0.4352**	**31.3800**	**0.9720**	**32.3520**	**8.3953**	**0.8924**	**9.2878**		**37,271.2753**	**37,271.2753**	**1.4691**		**37,302.1272**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	10.2236	57.8529	123.0597	0.1329	3.5802	0.7694	4.3496	1.0223	0.7073	1.7295		13,013.2380	13,013.2380	0.1085		13,015.5164
Worker	11.4830	17.8238	155.3953	0.3024	27.7998	0.2026	28.0024	7.3731	0.1852	7.5583		24,258.0373	24,258.0373	1.3606		24,286.6108
Total	**21.7066**	**75.6767**	**278.4551**	**0.4352**	**31.3800**	**0.9720**	**32.3520**	**8.3953**	**0.8924**	**9.2878**		**37,271.2753**	**37,271.2753**	**1.4691**		**37,302.1272**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

	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	163.9197	227.5755	1,249.616 5	3.4948	245.0899	4.5988	249.6887	65.5402	4.2463	69.7865		252,204.3 552	252,204.3 552	6.6615		252,344.2 468
Unmitigated	168.2919	247.5509	1,328.054 0	3.9515	279.2454	5.1062	284.3517	74.6738	4.7143	79.3881		285,247.2 284	285,247.2 284	7.4426		285,403.5 232

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,674.30	6,408.20	5432.65	9,656,433	8,475,319
General Office Building	5,856.07	547.71	226.48	6,649,871	5,836,501
Single Family Housing	44,438.94	54,694.08	47586.02	77,918,081	68,387,634
Strip Mall	18,850.46	18,463.97	8972.86	18,192,527	15,967,332
Total	74,819.78	80,113.96	62,218.00	112,416,911	98,666,786

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
General Office Building	5.20	5.20	5.20	33.00	48.00	19.00	77	19	4
Single Family Housing	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
Strip Mall	5.20	5.20	5.20	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.457495	0.042122	0.213987	0.146817	0.067454	0.009853	0.017888	0.026015	0.002466	0.001424	0.009078	0.000704	0.004697

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	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	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272
NaturalGas Unmitigated	6.6560	56.9739	24.9005	0.3631		4.5987	4.5987		4.5987	4.5987		72,611.3268	72,611.3268	1.3917	1.3312	73,053.2272

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/yr	lb/day										lb/day					
Single Family Housing	573079	6.1803	52.8132	22.4737	0.3371		4.2700	4.2700		4.2700	4.2700		67,421.1062	67,421.1062	1.2922	1.2361	67,831.4198
Strip Mall	3513.6	0.0379	0.3445	0.2894	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.3647	413.3647	7.9200e-003	7.5800e-003	415.8804
Apartments Low Rise	27965.6	0.3016	2.5772	1.0967	0.0165		0.2084	0.2084		0.2084	0.2084		3,290.0690	3,290.0690	0.0631	0.0603	3,310.0919
General Office Building	12637.7	0.1363	1.2390	1.0408	7.4300e-003		0.0942	0.0942		0.0942	0.0942		1,486.7868	1,486.7868	0.0285	0.0273	1,495.8351
Total		**6.6560**	**56.9739**	**24.9005**	**0.3631**		**4.5987**	**4.5987**		**4.5987**	**4.5987**		**72,611.3268**	**72,611.3268**	**1.3917**	**1.3312**	**73,053.2272**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	573.079	6.1803	52.8132	22.4737	0.3371		4.2700	4.2700		4.2700	4.2700		67,421.1062	67,421.1062	1.2922	1.2361	67,831.4198
Strip Mall	3.5136	0.0379	0.3445	0.2894	2.0700e-003		0.0262	0.0262		0.0262	0.0262		413.3647	413.3647	7.9200e-003	7.5800e-003	415.8804
Apartments Low Rise	27.9656	0.3016	2.5772	1.0967	0.0165		0.2084	0.2084		0.2084	0.2084		3,290.0690	3,290.0690	0.0631	0.0603	3,310.0919
General Office Building	12.6377	0.1363	1.2390	1.0408	7.4300e-003		0.0942	0.0942		0.0942	0.0942		1,486.7868	1,486.7868	0.0285	0.0273	1,495.8351
Total		**6.6560**	**56.9739**	**24.9005**	**0.3631**		**4.5987**	**4.5987**		**4.5987**	**4.5987**		**72,611.3268**	**72,611.3268**	**1.3917**	**1.3312**	**73,053.2272**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	9,647.6100	111.8745	10,806.5669	0.0275		1,416.5485	1,416.5485		1,416.4994	1,416.4994	138,456.0937	74,548.5576	213,004.6512	2.3051	13.5662	217,258.5865
Unmitigated	9,647.6100	111.8745	10,806.5669	0.0275		1,416.5485	1,416.5485		1,416.4994	1,416.4994	138,456.0937	74,548.5576	213,004.6512	2.3051	13.5662	217,258.5865

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	57.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	242.5069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	9,332.1727	105.8785	10,286.8414	0.0000		1,413.6563	1,413.6563		1,413.6072	1,413.6072	138,456.0937	73,609.4118	212,065.5054	1.4109	13.5662	216,300.6614
Landscaping	15.5438	5.9960	519.7255	0.0275		2.8922	2.8922		2.8922	2.8922		939.1458	939.1458	0.8943		957.9251
Total	**9,647.6100**	**111.8745**	**10,806.5669**	**0.0275**		**1,416.5485**	**1,416.5485**		**1,416.4994**	**1,416.4994**	**138,456.0937**	**74,548.5575**	**213,004.6512**	**2.3051**	**13.5662**	**217,258.5865**

6.2 Area by SubCategory

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	57.3866					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	242.5069					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	9,332.1727	105.8785	10,286.8414	0.0000		1,413.6563	1,413.6563		1,413.6072	1,413.6072	138,456.0937	73,609.4118	212,065.5054	1.4109	13.5662	216,300.6614
Landscaping	15.5438	5.9960	519.7255	0.0275		2.8922	2.8922		2.8922	2.8922		939.1458	939.1458	0.8943		957.9251
Total	**9,647.6100**	**111.8745**	**10,806.5669**	**0.0275**		**1,416.5485**	**1,416.5485**		**1,416.4994**	**1,416.4994**	**138,456.0937**	**74,548.5575**	**213,004.6512**	**2.3051**	**13.5662**	**217,258.5865**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

7773 Los Osos - Adopted Net Increase 2035

San Luis Obispo County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	159.94	1000sqft	3.67	159,940.00	0
Racquet Club	24.98	1000sqft	0.57	24,975.00	0
Apartments Low Rise	969.00	Dwelling Unit	60.56	969,000.00	2771
Single Family Housing	1,838.00	Dwelling Unit	596.75	3,308,400.00	5257
Strip Mall	229.84	1000sqft	5.28	229,845.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 3.2 **Precipitation Freq (Days)** 44

Climate Zone 4 **Operational Year** 2035

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 287.06 **CH4 Intensity (lb/MWhr)** 0.013 **N2O Intensity (lb/MWhr)** 0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2030 50% required
CalEEMod accounts for 14.1%
Additional 35.9% reduction applied
(287.06, 0.013, 0.003)

Land Use - Adopted Estero Area Plan net increase over existing land uses

Construction Phase - Construction calculated seperately

Vehicle Trips - TIA
2035 trip length = 5.20 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - 2013 Title 24

Water And Wastewater - CalGreen 20% decrease in indoor water use

Mobile Land Use Mitigation -

Area Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	10,850.00	1.00
tblEnergyUse	T24E	236.91	181.71
tblEnergyUse	T24E	7.46	5.83
tblEnergyUse	T24E	1.81	1.42
tblEnergyUse	T24E	368.61	234.44
tblEnergyUse	T24E	3.37	2.64
tblEnergyUse	T24NG	8,283.47	7,968.70
tblEnergyUse	T24NG	17.16	14.28
tblEnergyUse	T24NG	20.74	17.26

tblEnergyUse	T24NG	29,406.10	27,494.70
tblEnergyUse	T24NG	2.49	2.07
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	533.00
tblFireplaces	NumberGas	0.00	1,011.00
tblFireplaces	NumberNoFireplace	0.00	97.00
tblFireplaces	NumberNoFireplace	0.00	184.00
tblFireplaces	NumberWood	0.00	339.00
tblFireplaces	NumberWood	0.00	643.00
tblLandUse	LandUseSquareFeet	24,980.00	24,975.00
tblLandUse	LandUseSquareFeet	229,840.00	229,845.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.013
tblProjectCharacteristics	CO2IntensityFactor	641.35	287.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	0.00
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	CW_TL	13.00	0.00

tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	6.87
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWater	IndoorWaterUseRate	63,134,250.83	50,507,400.66
tblWater	IndoorWaterUseRate	28,426,735.65	22,741,388.52
tblWater	IndoorWaterUseRate	1,477,395.74	1,181,916.59
tblWater	IndoorWaterUseRate	119,753,099.09	95,802,479.27
tblWater	IndoorWaterUseRate	17,024,828.34	13,619,862.67
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	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
Year	lb/day										lb/day					
2017	13.9939	62.9680	158.3608	0.2498	16.4560	2.2492	18.7051	4.3985	2.1026	6.5011	0.0000	21,629.3045	21,629.3045	1.4239	0.0000	21,659.2061
Total	**13.9939**	**62.9680**	**158.3608**	**0.2498**	**16.4560**	**2.2492**	**18.7051**	**4.3985**	**2.1026**	**6.5011**	**0.0000**	**21,629.3045**	**21,629.3045**	**1.4239**	**0.0000**	**21,659.2061**

Mitigated Construction

	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
Year	lb/day										lb/day					
2017	13.9939	62.9680	158.3608	0.2498	16.4560	2.2492	18.7051	4.3985	2.1026	6.5011	0.0000	21,629.3045	21,629.3045	1.4239	0.0000	21,659.2061
Total	**13.9939**	**62.9680**	**158.3608**	**0.2498**	**16.4560**	**2.2492**	**18.7051**	**4.3985**	**2.1026**	**6.5011**	**0.0000**	**21,629.3045**	**21,629.3045**	**1.4239**	**0.0000**	**21,659.2061**

	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**	**N20**	**CO2e**
Percent Reduction	**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**	**0.00**

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	4,273.840 7	49.6667	4,797.571 6	0.0122		628.8671	628.8671		628.8453	628.8453	61,466.49 37	33,113.54 77	94,580.04 13	1.0239	6.0230	96,468.65 68
Energy	2.2114	18.9518	8.4394	0.1206		1.5279	1.5279		1.5279	1.5279		24,124.45 77	24,124.45 77	0.4624	0.4423	24,271.27 52
Mobile	71.1740	103.8538	558.9344	1.6492	116.4293	2.1363	118.5655	31.1347	1.9723	33.1070		119,046.2 461	119,046.2 461	3.1112		119,111.5 804
Total	**4,347.226 1**	**172.4722**	**5,364.945 4**	**1.7820**	**116.4293**	**632.5313**	**748.9605**	**31.1347**	**632.3455**	**663.4802**	**61,466.49 37**	**176,284.2 515**	**237,750.7 452**	**4.5974**	**6.4652**	**239,851.5 124**

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	4,273.840 7	49.6667	4,797.571 6	0.0122		628.8671	628.8671		628.8453	628.8453	61,466.49 37	33,113.54 77	94,580.04 13	1.0239	6.0230	96,468.65 68
Energy	2.2114	18.9518	8.4394	0.1206		1.5279	1.5279		1.5279	1.5279		24,124.45 77	24,124.45 77	0.4624	0.4423	24,271.27 52
Mobile	68.0297	89.4881	502.5246	1.3207	91.8656	1.7713	93.6370	24.5661	1.6357	26.2018		95,282.82 78	95,282.82 78	2.5494		95,336.36 54
Total	**4,344.081 8**	**158.1065**	**5,308.535 6**	**1.4536**	**91.8656**	**632.1664**	**724.0320**	**24.5661**	**632.0089**	**656.5750**	**61,466.49 37**	**152,520.8 332**	**213,987.3 268**	**4.0357**	**6.4652**	**216,076.2 973**

	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	N20	CO2e
Percent Reduction	**0.07**	**8.33**	**1.05**	**18.43**	**21.10**	**0.06**	**3.33**	**21.10**	**0.05**	**1.04**	**0.00**	**13.48**	**10.00**	**12.22**	**0.00**	**9.91**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	1,495.00	368.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730		2,639.8053	2,639.8053	0.6497		2,653.4490
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**		**2,639.8053**	**2,639.8053**	**0.6497**		**2,653.4490**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.7866	27.0863	57.6158	0.0622	1.6762	0.3602	2.0364	0.4786	0.3311	0.8098		6,092.7119	6,092.7119	0.0508		6,093.7787
Worker	6.1049	9.4760	82.6159	0.1608	14.7798	0.1077	14.8875	3.9199	0.0985	4.0184		12,896.7873	12,896.7873	0.7234		12,911.9784
Total	**10.8916**	**36.5624**	**140.2317**	**0.2230**	**16.4560**	**0.4679**	**16.9239**	**4.3985**	**0.4296**	**4.8281**		**18,989.4992**	**18,989.4992**	**0.7742**		**19,005.7570**

3.2 Building Construction - 2017

Mitigated Construction On-Site

Category	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
	lb/day										lb/day					
Off-Road	3.1024	26.4057	18.1291	0.0268		1.7812	1.7812		1.6730	1.6730	0.0000	2,639.805 3	2,639.805 3	0.6497		2,653.449 0
Total	**3.1024**	**26.4057**	**18.1291**	**0.0268**		**1.7812**	**1.7812**		**1.6730**	**1.6730**	**0.0000**	**2,639.805 3**	**2,639.805 3**	**0.6497**		**2,653.449 0**

Mitigated Construction Off-Site

Category	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
	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.7866	27.0863	57.6158	0.0622	1.6762	0.3602	2.0364	0.4786	0.3311	0.8098		6,092.711 9	6,092.711 9	0.0508		6,093.778 7
Worker	6.1049	9.4760	82.6159	0.1608	14.7798	0.1077	14.8875	3.9199	0.0985	4.0184		12,896.78 73	12,896.78 73	0.7234		12,911.97 84
Total	**10.8916**	**36.5624**	**140.2317**	**0.2230**	**16.4560**	**0.4679**	**16.9239**	**4.3985**	**0.4296**	**4.8281**		**18,989.49 92**	**18,989.49 92**	**0.7742**		**19,005.75 70**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

	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	68.0297	89.4881	502.5246	1.3207	91.8656	1.7713	93.6370	24.5661	1.6357	26.2018		95,282.8278	95,282.8278	2.5494		95,336.3654
Unmitigated	71.1740	103.8538	558.9344	1.6492	116.4293	2.1363	118.5655	31.1347	1.9723	33.1070		119,046.2461	119,046.2461	3.1112		119,111.5804

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	6,143.46	6,938.04	5881.83	10,454,842	8,249,136
General Office Building	1,098.79	379.06	156.74	1,334,140	1,052,670
Racquet Club	0.00	0.00	0.00		
Single Family Housing	15,053.22	18,527.04	16119.26	26,393,924	20,825,478
Strip Mall	9,864.73	9,662.47	4695.63	9,520,424	7,511,857
Total	32,160.20	35,506.61	26,853.46	47,703,330	37,639,141

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
General Office Building	5.20	5.20	5.20	33.00	48.00	19.00	77	19	4
Racquet Club	0.00	0.00	0.00	11.50	69.50	19.00	52	39	9
Single Family Housing	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
Strip Mall	5.20	5.20	5.20	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.457495	0.042122	0.213987	0.146817	0.067454	0.009853	0.017888	0.026015	0.002466	0.001424	0.009078	0.000704	0.004697

5.0 Energy Detail
4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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	2.2114	18.9518	8.4394	0.1206		1.5279	1.5279		1.5279	1.5279		24,124.4577	24,124.4577	0.4624	0.4423	24,271.2752
NaturalGas Unmitigated	2.2114	18.9518	8.4394	0.1206		1.5279	1.5279		1.5279	1.5279		24,124.4577	24,124.4577	0.4624	0.4423	24,271.2752

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/yr	lb/day										lb/day					
General Office Building	6283.67	0.0678	0.6161	0.5175	3.7000e-003		0.0468	0.0468		0.0468	0.0468		739.2553	739.2553	0.0142	0.0136	743.7543
Racquet Club	1637.4	0.0177	0.1605	0.1348	9.6000e-004		0.0122	0.0122		0.0122	0.0122		192.6355	192.6355	3.6900e-003	3.5300e-003	193.8079
Single Family Housing	168046	1.8123	15.4866	6.5901	0.0989		1.2521	1.2521		1.2521	1.2521		19,770.1619	19,770.1619	0.3789	0.3625	19,890.4798
Strip Mall	1303.5	0.0141	0.1278	0.1074	7.7000e-004		9.7100e-003	9.7100e-003		9.7100e-003	9.7100e-003		153.3535	153.3535	2.9400e-003	2.8100e-003	154.2868
Apartments Low Rise	27786.9	0.2997	2.5608	1.0897	0.0164		0.2070	0.2070		0.2070	0.2070		3,269.0515	3,269.0515	0.0627	0.0599	3,288.9464
Total		**2.2114**	**18.9518**	**8.4394**	**0.1206**		**1.5279**	**1.5279**		**1.5279**	**1.5279**		**24,124.4577**	**24,124.4577**	**0.4624**	**0.4423**	**24,271.2752**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Racquet Club	1.6374	0.0177	0.1605	0.1348	9.6000e-004		0.0122	0.0122		0.0122	0.0122		192.6355	192.6355	3.6900e-003	3.5300e-003	193.8079
Single Family Housing	168.046	1.8123	15.4866	6.5901	0.0989		1.2521	1.2521		1.2521	1.2521		19,770.1619	19,770.1619	0.3789	0.3625	19,890.4798
Strip Mall	1.3035	0.0141	0.1278	0.1074	7.7000e-004		9.7100e-003	9.7100e-003		9.7100e-003	9.7100e-003		153.3535	153.3535	2.9400e-003	2.8100e-003	154.2868
Apartments Low Rise	27.7869	0.2997	2.5608	1.0897	0.0164		0.2070	0.2070		0.2070	0.2070		3,269.0515	3,269.0515	0.0627	0.0599	3,288.9464
General Office Building	6.28367	0.0678	0.6161	0.5175	3.7000e-003		0.0468	0.0468		0.0468	0.0468		739.2553	739.2553	0.0142	0.0136	743.7543
Total		**2.2114**	**18.9518**	**8.4394**	**0.1206**		**1.5279**	**1.5279**		**1.5279**	**1.5279**		**24,124.4577**	**24,124.4577**	**0.4624**	**0.4423**	**24,271.2752**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	4,273.8407	49.6667	4,797.5716	0.0122		628.8671	628.8671		628.8453	628.8453	61,466.4937	33,113.5477	94,580.0413	1.0239	6.0230	96,468.6568
Unmitigated	4,273.8407	49.6667	4,797.5716	0.0122		628.8671	628.8671		628.8453	628.8453	61,466.4937	33,113.5477	94,580.0413	1.0239	6.0230	96,468.6568

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	23.5785					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	100.4122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4,142.9463	47.0039	4,566.7624	0.0000		627.5827	627.5827		627.5609	627.5609	61,466.4937	32,696.4706	94,162.9643	0.6267	6.0230	96,043.2389
Landscaping	6.9037	2.6628	230.8092	0.0122		1.2844	1.2844		1.2844	1.2844		417.0771	417.0771	0.3972		425.4179
Total	**4,273.8407**	**49.6667**	**4,797.5716**	**0.0122**		**628.8671**	**628.8671**		**628.8453**	**628.8453**	**61,466.4937**	**33,113.5477**	**94,580.0413**	**1.0239**	**6.0230**	**96,468.6568**

6.2 Area by SubCategory

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	23.5785					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	100.4122					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	4,142.9463	47.0039	4,566.7624	0.0000		627.5827	627.5827		627.5609	627.5609	61,466.4937	32,696.4706	94,162.9643	0.6267	6.0230	96,043.2389
Landscaping	6.9037	2.6628	230.8092	0.0122		1.2844	1.2844		1.2844	1.2844		417.0771	417.0771	0.3972		425.4179
Total	**4,273.8407**	**49.6667**	**4,797.5716**	**0.0122**		**628.8671**	**628.8671**		**628.8453**	**628.8453**	**61,466.4937**	**33,113.5477**	**94,580.0413**	**1.0239**	**6.0230**	**96,468.6568**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Greenhouse Gas Analysis for the Los Osos Community Plan Update, County of San Luis Obispo, California

Prepared for
San Luis Obispo County
Department of Planning and Building
County Government Center, Room 300
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RECON Number 7773
June 2, 2016

Jessica Fleming, Environmental Analyst

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3: CalEEMod Output – Year 2035 LOCP Emissions

Acronyms

AB	Assembly Bill
BAU	business as usual
CAFE	Corporate Average Fuel Economy
CalEEMod	California Emissions Estimator Model
CalGreen	California Green Building Standards Code,
CalRecycle	California Department of Resources Recycling and Recovery
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFO	Clean Fuels Outlet
CH_4	methane
CO_2	carbon dioxide
County	County of San Luis Obispo
EO	Executive Order
EPA	Environmental Protection Agency
GHG	greenhouse gas
GWP	global warming potential
IPCC	Intergovernmental Panel on Climate Change
lbs/MWh	pounds per megawatt hour
LCFS	Low Carbon Fuel Standard
LEV	low-emissions vehicle
LEV III	Low Emissions Vehicle III Standards
LOCP	Los Osos Community Plan
MMT CO_2E	million metric tons carbon dioxide equivalent
MPO	Metropolitan Planning Organizations
MT CO_2E	metric tons carbon dioxide equivalent
N_2O	Nitrous oxide
PG&E	Pacific Gas & Electric
RPS	Renewable Portfolio Standard
SB	Senate Bill
SLOAPCD	San Luis Obispo Air Pollution Control District
SLOCOG	San Luis Obispo Council of Governments
URL	Urban Reserve Line
USL	Urban Services Line
ZEV	Zero-emission vehicle

Executive Summary

The Los Osos Community Plan (LOCP) functions as a General Plan and Local Coastal Plan guiding future development within the Los Osos community in San Luis Obispo County. The LOCP is part of the Estero Area Plan and located within the Estero Planning Area. The primary objective the Los Osos Community Plan is to establish a framework for the orderly growth and development of Los Osos. Additionally, the plan is intended to be consistent with strategic growth principles and other land use policies established in the County General Plan.

In accordance with California Environmental Quality Act and County of San Luis Obispo (County) guidance, this analysis evaluates the significance of the project in terms of (1) its contribution of greenhouse gases (GHGs) to cumulative statewide emissions, and (2) whether the project would conflict with local and/or state regulations, plans, and policies adopted to reduce GHG emissions. The County uses guidance from the San Luis Obispo Air Pollution Control District (SLOAPCD) for assessing the significant of GHG impacts. This analysis uses the recommended efficiency threshold of 4.9 metric tons of carbon dioxide equivalent (MT CO_2E) per service population for determining significance of GHG impacts. This threshold was developed by the SLOAPCD and is based on comprehensive policy and regulatory analysis, as well as technical evaluation of development trends in the County.

The emission sources include construction (off-road vehicles); mobile (on-road vehicles); area sources (landscape maintenance equipment); water and wastewater; and solid waste. Emissions estimates in this report incorporate project compliance with applicable regulations, including the 2013 and 2016 Title 24 Part 6 (California Energy Code) and Part 11 (California Green Building Standards) requirements. Year 2020 GHG emissions associated with implementation of the LOCP would be 94,731 MT CO_2E. Buildout of the LOCP would have a service population of 21,942. The LOCP would result in GHG emissions of 4.3 MT CO_2E per service population. By emitting less than 4.9 MT CO_2E per service population, the project's contribution of GHGs to cumulative statewide emissions would be less than cumulatively considerable. Therefore, the project's direct and indirect GHG emissions would have a less than significant impact on the environment. In addition, the project would not conflict with the goals and strategies of local and state plans, policies, and regulations adopted to reduce GHG emissions. Thus, impacts associated with applicable policies, plans, and regulations would be less than significant.

1.0 Introduction

This report evaluates the significance of the proposed Los Osos Community Plan (LOCP) located within the County of San Luis Obispo (County) and its contribution of greenhouse gas (GHG) emissions to statewide GHG emissions and GHG reduction targets. To evaluate the incremental effect of project development on statewide emissions and global climate change, it is important to have a basic understanding of the nature of the global climate change problem.

2.0 Project Description

The LOCP would function as a General Plan and Local Coastal Plan guiding future development within the Los Osos community. The planning area is part of the Estero Area Plan and located within the Estero Planning Area. The LOCP establishes a vision for the future of Los Osos and defines the nature of future development in the Los Osos planning area, and provides development standards that in many cases are site-specific.

The unincorporated community of Los Osos is located along the coast in the central portion of San Luis Obispo County, generally south of and adjacent to Morro Bay and its associated estuary (Figure 1). Los Osos is approximately 4 miles south of the city of Morro Bay, across the bay/estuary, and approximately 10 miles west of the city of San Luis Obispo, at the western end of Los Osos Valley, a broad, relatively flat agricultural area formed by Los Osos Creek. However, the LOCP does not include all land or development within the U.S. Census-defined Los Osos, but only encompasses the land within the identified Urban Reserve Line (URL) (Figure 2). The area within the existing URL includes about 3,087 acres (4.8 square miles). The proposed project envisions minor changes to the URL boundary, including 17 acres added along Turri Road beyond the end of the eastern terminus of Santa Ysabel Avenue, but another 65-acre area adjacent to Montana de Oro State Park removed, resulting in a net decrease of about 48 acres overall.

The existing Urban Services Line (USL) is smaller than, and completely within the URL and, with some exceptions, is generally focused on the urbanized portions of the community west of South Bay Boulevard. Under the LOCP, the USL will be contracted to some extent in certain areas, so the proposed USL will be smaller than the existing boundary.

Project Location

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FIGURE 1

Regional Location

Image Source: USDA FSA NAIP (flown June 2014)

FIGURE 2

Aerial Photograph of LOCP Vicinity

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Los Osos is primarily residential in nature. There are two primary commercial areas, the downtown area or Central Business District centered around Los Osos Valley Road and the Baywood Commercial Area centered along Second Street. These areas are focused either on local community-servicing businesses and office space or on supporting the regional tourist economy. The downtown area is more locally focused, with grocery stores, restaurants, banks, and offices, while the Baywood community is more tourist-oriented, with some hotels, and recreational businesses along with other businesses that serve the local neighborhoods.

The primary objective the LOCP is to establish a framework for the orderly growth and development of Los Osos. Additionally, the plan is intended to be consistent with strategic growth principles and other land use policies established in the County General Plan.

Table 1 summarizes the existing, adopted, and proposed land use distribution and development potential within each land use category under the proposed LOCP. Figure 3 shows the LOCP proposed changes. Development under the LOCP could result in an additional 1,861 residential units and up to 364,000 square feet of commercial space, for a total of 8,182 residential units and 1,034,300 square feet of non-residential space (floor area) within the LOCP study area within the 20-year plan horizon (by 2035). Buildout of the LOCP would accommodate an additional 4,429 residents over existing conditions for a total of 19,473 residents.

Table 1
Existing and Proposed Land Use Distribution

Land Use	Existing	Adopted LOCP Buildout	Adopted LOCP Net Increase	Proposed LOCP Buildout	Proposed LOCP Net Increase
Residential (dwelling units)					
Single Family	5,426	7,264	1,838	6,487	1,061
Multi-Family	895	1,864	969	1,695	800
TOTAL	**6,321**	**9,128**	**2,807**	**8,182**	**1,861**
Non-Residential (square feet)					
Retail	439,200	669,045	229,845	668,100	228,900
Commercial/Service	221,000	176,779	-44,221	284,600	63,600
Office	10,100	214,261	204,161	61,600	51,500
Recreation	0	24,975	24,975	10,000	10,000
Public Facilities/Recreation	0	0	0	10,000	10,000
TOTAL	**670,300**	**1,085,060**	**414,760**	**1,034,300**	**364,000**

Map Source: Los Osos Community Plan Public Review Draft, January 30, 2015

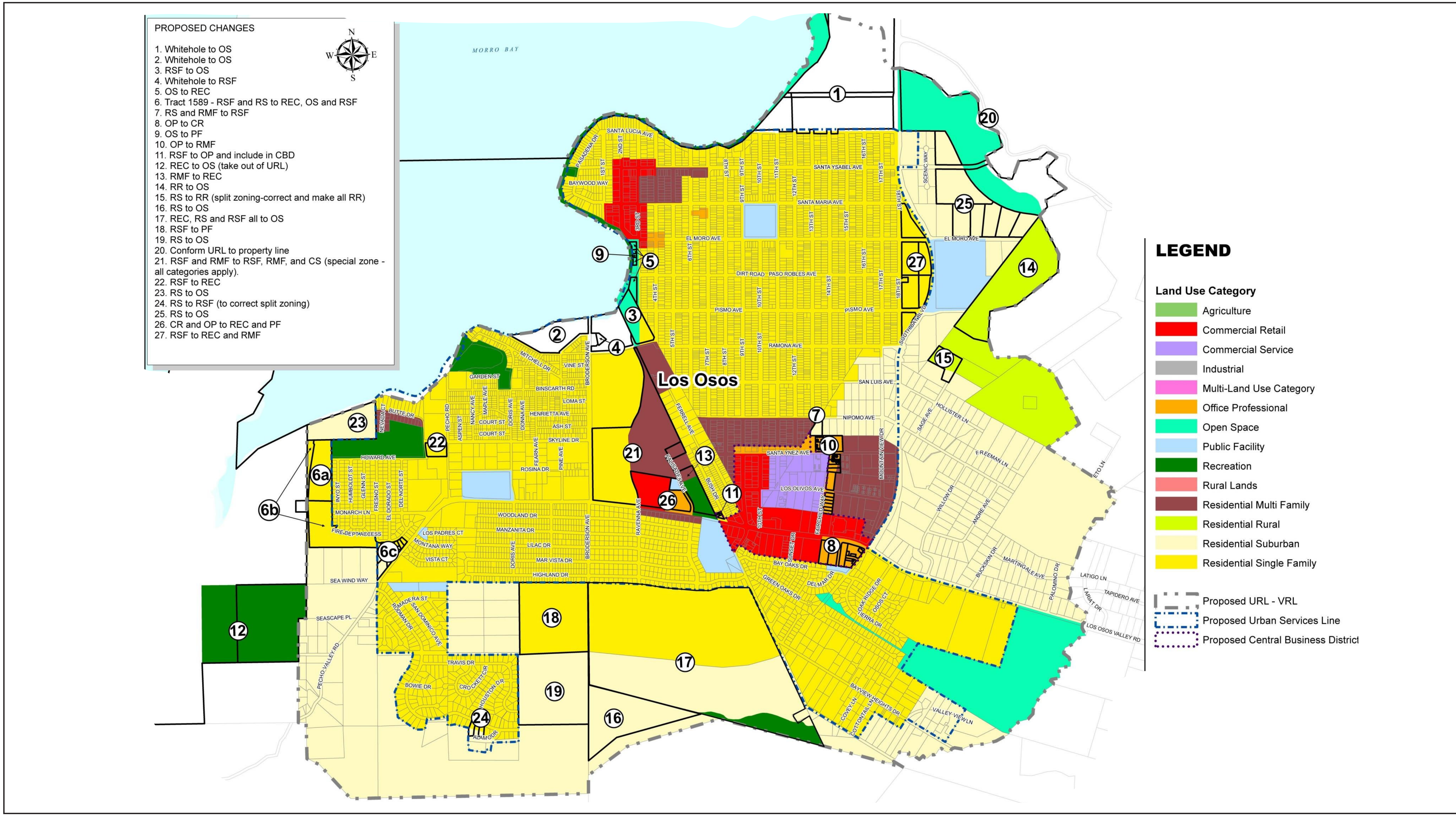

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FIGURE 3
LOCP Proposed Changes

3.0 Understanding Global Climate Change

To evaluate the incremental effect of the project on statewide GHG emissions and global climate change, it is important to have a basic understanding of the nature of the global climate change problem. Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. The earth's climate is in a state of constant flux with periodic warming and cooling cycles. Extreme periods of cooling are termed "ice ages," which may then be followed by extended periods of warmth. For most of the earth's geologic history, these periods of warming and cooling have been the result of many complicated interacting natural factors that include volcanic eruptions that spew gases and particles (dust) into the atmosphere; the amount of water, vegetation, and ice covering the earth's surface; subtle changes in the earth's orbit; and the amount of energy released by the sun (sun cycles). However, since the beginning of the Industrial Revolution around 1750, the average temperature of the earth has been increasing at a rate that is faster than can be explained by natural climate cycles alone.

With the Industrial Revolution came an increase in the combustion of carbon-based fuels such as wood, coal, oil, natural gas, and biomass. Industrial processes have also created emissions of substances not found in nature. This in turn has led to a marked increase in the emissions of gases shown to influence the world's climate. These gases, termed "greenhouse" gases, influence the amount of heat trapped in the earth's atmosphere. Recently observed increased concentrations of GHGs in the atmosphere appear to be related to increases in human activity. Therefore, the current cycle of "global warming" is believed to be largely due to human activity. Of late, the issue of global warming or global climate change has arguably become the most important and widely debated environmental issue in the United States and the world. Because it is believed that the increased GHG concentrations around the world are related to human activity and the collective of human actions taking place throughout the world, it is quintessentially a global or cumulative issue.

There are numerous GHGs, both naturally occurring and manmade. Each GHG has variable atmospheric lifetime and global warming potential (GWP). The atmospheric lifetime of the gas is the average time a molecule stays stable in the atmosphere. Most GHGs have long atmospheric lifetimes, staying in the atmosphere hundreds or thousands of years. GWP is a measure of the potential for a gas to trap heat and warm the atmosphere. Although GWP is related to its atmospheric lifetime, many other factors including chemical reactivity of the gas also influence GWP. GWP is reported as a unitless factor representing the potential for the gas to affect global climate relative to the potential of carbon dioxide (CO_2). Because CO_2 is the reference gas for establishing GWP, by definition its GWP is 1. Although methane (CH_4) has a shorter atmospheric lifetime than CO_2, it has a 100-year GWP of 25; this means that CH_4 has 25 times more effect on global warming than CO_2 on a molecule-by-molecule basis.

The GWP is officially defined as (U.S. Environmental Protection Agency [U.S. EPA] 2010):

> The cumulative radiative forcing—both direct and indirect effects—integrated over a period of time from the emission of a unit mass of gas relative to some reference gas.

GHG emissions estimates are typically represented in terms of equivalent metric tons of carbon dioxide equivalent (MT CO_2E). CO_2E emissions are the product of the amount of each gas by its GWP. The effects of several GHGs may be discussed in terms of MT CO_2E and can be summed to represent the total potential of these gases to warm the global climate. Table 2 summarizes some of the most common GHGs.

Table 2
Global Warming Potentials and Atmospheric Lifetimes (years)

Gas	Atmospheric Lifetime (years)	100-year GWP	20-year GWP
Carbon dioxide (CO_2)	50–200	1	1
Methane (CH_4)*	12.4	28	84
Nitrous oxide (N_2O)	121	265	264
HFC-23	222	12,400	10,800
HFC-32	5.2	677	2,430
HFC-125	28.2	3,170	6,090
HFC-134a	13.4	1,300	3,710
HFC-143a	47.1	4,800	6,940
HFC-152a	1.5	138	506
HFC-227ea	38.9	3,350	5,360
HFC-236fa	242	8,060	6,940
HFC-43-10mee	16.1	1,650	4,310
CF_4	50,000	6,630	4,880
C_2F_6	10,000	11,100	8,210
C_3F_8	2,600	8,900	6,640
C_4F_{10}	2,600	9,200	6,870
c-C_4F_8	3,200	9,540	7,110
C_5F_{12}	4,100	8,550	6,350
C_6F_{14}	3,100	7,910	5,890
SF_6	3,200	23,500	17,500
SOURCE: Intergovernmental Panel on Climate Change 2013.			

It should be noted that the U.S. EPA and other organizations will update the GWP values they use occasionally. This change can be due to updated scientific estimates of the energy absorption or lifetime of the gases or to changing atmospheric concentrations of GHGs that result in a change in the energy absorption of one additional ton of a gas relative to another. The GWPs shown in Table 1 are the most current. However, it should be noted that in California Emissions Estimator Model (CalEEMod) CH_4 has a GWP of 21 and nitrous oxide (N_2O) has a GWP of 310, and these values were used for this analysis.

All of the gases in Table 1 are produced by both biogenic (natural) and anthropogenic (human) sources. These are the GHGs of primary concern in this analysis. CO_2 would be emitted by the project due to the combustion of fossil fuels in vehicles (including construction), from electricity generation and natural gas consumption, water use, and from solid waste disposal. Smaller amounts of CH_4 and N_2O would be emitted from the same project operations.

4.0 Existing Conditions

4.1 Environmental Setting

4.1.1 State and Regional GHG Inventories

The California Air Resources Board (CARB) performs statewide GHG inventories. The inventory is divided into nine broad sectors of economic activity: agriculture, commercial, electricity generation, forestry, high GWP emitters, industrial, recycling and waste, residential, and transportation. Emissions are quantified in million metric tons of CO_2 equivalent (MMT CO_2E). Table 3 shows the estimated statewide GHG emissions for the years 1990, 2008, and 2012.

Table 3
California GHG Emissions by Sector in 1990, 2008, and 2012

Sector	1990[1] Emissions in MMT CO_2E (% total)[2]	2008[3] Emissions in MMT CO_2E (% total)[2]	2012[3] Emissions in MMT CO_2E (% total)[2]
Sources			
Agriculture	23.4 (5%)	37.99 (7%)	37.86 (7%)
Commercial	14.4 (3%)	13.37 (3%)	14.20 (3%)
Electricity Generation	110.6 (26%)	120.15 (25%)	95.09 (19%)
High GWP	--	12.87 (2%)	18.41 (3%)
Industrial	103.0 (24%)	87.54 (18%)	89.16 (21%)
Recycling and Waste	--	8.09 (1%)	8.49 (2%)
Residential	29.7 (7%)	29.07 (6%)	28.09 (7%)
Transportation	150.7 (35%)	178.02 (37%)	167.38 (38%)
Forestry (Net CO_2 flux)[4]	–6.69	--	--
Not Specified[4]	1.27	--	--
TOTAL[5]	**426.6**	**487.10**	**458.68**

SOURCE: CARB 2007 and 2014a.
[1]1990 data was retrieved from the CARB 2007 source and are based on Intergovernmental Panel on Climate Change (IPCC) second assessment report GWPs. The revised calculation, which uses the scientifically updated IPCC fourth assessment report GWPs, is 431 MMT CO_2E.
[2]Percentages may not total 100 due to rounding.
[3]2008 and 2012 data was retrieved from the CARB 2014a source.
[4]Reported emissions for key sectors. The inventory totals for 2008 and 2012 did not include Forestry or Not Specified sources.
[5]Totals may vary due to independent rounding.

As shown in Table 2, statewide GHG source emissions totaled about 427 MMT CO_2E in 1990, 487 MMT CO_2E in 2008, and 459 MMT CO_2E in 2012. Many factors affect year-to-year changes in GHG emissions, including economic activity, demographic influences, environmental conditions such as drought, and the impact of regulatory efforts to control GHG emissions. CARB has adopted multiple GHG emission reduction measures, the effect of those which will be seen over the following years. According to CARB, substantial reductions since 2008 have been driven by economic factors (recession), previous energy efficiency actions, and the renewable portfolio standard (CARB 2014a). Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

A 2006 baseline GHG inventory for the County was prepared as part of the County's update of the Conservation and Open Space Element of the General Plan. The inventory identifies the major sources of GHG emissions within the unincorporated county and from County government operations. Table 4 summarizes the 2006 County inventory. As shown, transportation is the greatest source of community-wide and government operation emissions.

Table 4
San Luis Obispo County GHG Emissions in 2006

Sector	2006 GHG Emissions (MT CO_2E)	Percent of Total
Unincorporated San Luis Obispo County		
Residential	136,360	15%
Commercial/Industrial	215,970	24%
Transportation	365,260	40%
Waste	30,540	3%
Other – Crops	22,630	2%
Other – Livestock	83,420	9%
Other – Off-Road Equipment	63,280	7%
Other – Aircraft	240	<0.1%
TOTAL	917,710	100%
San Luis Obispo County Operations		
Buildings	4,970	30%
Vehicle Fleet	3,360	20%
Employee Commute	7,800	46%
Streetlights	60	0.4%
Water/Sewage	410	2%
Waste	270	2%
Other	<10	<0.1%
TOTAL	16,870	100%

SOURCE: County of San Luis Obispo 2011.
Note: Totals may vary due to independent rounding.

4.1.2 Existing GHG Emissions

The LOCP area is a current source of GHG emissions. Table 1 summarizes the existing land uses. Current sources of GHG emissions are associated with the vehicle use, energy use, water use, area sources (landscaping and other equipment use), and waste disposal practices with these existing land uses. Existing GHG emissions associated with the existing uses were calculated using the CalEEMod version 2013.2.2 released in September 2013 by the California Air Pollution Control Officers Association (CAPCOA 2013), and the results are summarized in Table 5. The CalEEMod output is contained in Attachment 1.

Table 5
Existing (2016) Annual GHG Emissions
(MT CO_2E)

Emission Source	Existing GHG Emissions
Vehicles	46,494
Energy Use	25,281
Area Sources	8,189
Water Use	1,530
Solid Waste Disposal	3,389
TOTAL	**84,883**
Service Population	*16,676*
GHG Emissions per Service Population	***5.0***
NOTE: Totals may vary due to independent rounding.	

4.2 Regulatory Background

In response to rising concern associated with increasing GHG emissions and global climate change impacts, several plans and regulations have been adopted at the international, national, and state levels with the aim of reducing GHG emissions. The following is a discussion of the federal, state, and local plans and regulations most applicable to the project.

4.2.1 Federal

The federal government, U.S. EPA, and other federal agencies have many federal level programs and projects to reduce GHG emissions.

4.2.1.1 Environmental Protection Agency

The U.S. EPA has many federal level programs and projects to reduce GHG emissions. The U.S. EPA provides technical expertise and encourages voluntary reductions from the private sector. One of the voluntary programs applicable to the proposed project is the Energy Star program.

Energy Star is a joint program of U.S. EPA and the U.S. Department of Energy, which promotes energy efficient products and practices. Tools and initiatives include the Energy Star Portfolio Manager, which helps track and assess energy and water consumption across an entire portfolio of buildings, and the Energy Star Most Efficient 2013, which provides information on exceptional products which represent the leading edge in energy efficient products in the year 2013 (U.S. EPA 2013).

The U.S. EPA also collaborates with the public sector, including states, tribes, localities, and resource managers, to encourage smart growth, sustainability preparation, and renewable energy and climate change preparation. These initiatives include the Clean Energy-Environment State Partnership Program, the Climate Ready Water Utilities Initiative, the Climate Ready Estuaries Program, and the Sustainable Communities Partnership (U.S. EPA 2014).

4.2.1.2 Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standards determine the fuel efficiency of certain vehicle classes in the U.S. Current CAFE standards require vehicle manufacturers of passenger cars and light-duty trucks to achieve an average fuel economy of 35.5 miles per gallon by 2016 and an average fuel economy of 54.5 miles per gallon by 2025. With improved gas mileage, fewer gallons of transportation fuel would be combusted to travel the same distance, thereby reducing nationwide GHG emissions associated with vehicle travel.

4.2.2 State

The State of California has adopted a number of plans and regulations aimed at identifying statewide and regional GHG emissions caps, GHG emissions reduction targets, and actions and timelines to achieve the target GHG reductions.

4.2.2.1 Executive Orders and Statewide GHG Emission Targets

a. S-3-05—Statewide GHG Emission Targets

This executive order (EO) established the following GHG emission reduction targets for the State of California:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020, reduce GHG emissions to 1990 levels;
- by 2050, reduce GHG emissions to 80 percent below 1990 levels.

This EO also directs the secretary of the California EPA to oversee the efforts made to reach these targets, and to prepare biannual reports on the progress made toward meeting the targets and on the impacts to California related to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. With regard to impacts, the report shall also prepare and report on mitigation and adaptation plans to combat the impacts. The first Climate Action Team Assessment Report was produced in March 2006, and has been updated every two years.

b. B-30-15—2030 Statewide GHG Emission Goal

This EO, issued on April 29, 2015, establishes an interim GHG emission reduction goal for the State of California to reduce GHG emissions 40 percent below 1990 levels by 2030. This EO also directed all state agencies with jurisdiction over GHG-emitting sources to implement measures designed to achieve the new interim 2030 goal, as well as the pre-existing, long-term 2050 goal identified in EO S-3-05. Additionally, this EO directed CARB to update its Climate Change Scoping Plan to address the 2030 goal. CARB is expected to develop statewide inventory projection data for 2030, as well as commence its efforts to identify reduction strategies capable of securing emission reductions that allow for achievement of the EO's new interim goal.

4.2.2.2 Assembly Bill 32—California Global Warming Solutions Act

In response to EO S-3-05, the California Legislature passed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, and thereby enacted Sections 38500–38599 of the California Health and Safety Code. AB 32 requires that CARB establish an emissions cap and adopt rules and regulations that would reduce GHG emissions to 1990 levels by 2020. AB 32 also required CARB to adopt a plan by January 1, 2009 indicating how emission reductions would be achieved from significant GHG sources via regulations, market mechanisms, and other actions.

4.2.2.3 Climate Change Scoping Plan

As directed by the California Global Warming Solutions Act of 2006, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (2008 Scoping Plan). The 2008 Scoping Plan identifies the main strategies the State of California will implement to achieve the GHG reductions necessary to reduce statewide forecasted business as usual (BAU) GHG emissions in 2020 to the state's historic 1990 emissions level.

In 2008, as part of its adoption of the 2008 Scoping Plan, CARB estimated that annual statewide GHG emissions were 427 MMT CO_2E in 1990 and would reach 596 MMT CO_2E by 2020 under a BAU condition (CARB 2008). To achieve the mandate of AB 32, CARB determined that a 169 MMT CO_2E (or approximate 28.3 percent) reduction in BAU emissions was needed by 2020. The 2020 emissions estimate used in the 2008 Scoping Plan was developed using pre-recession data and reflects GHG emissions expected to occur in the absence of any reduction measures in 2010 (CARB 2011a). The majority of reductions are directed at the sectors with the largest GHG emissions contributions—transportation and electricity generation—and involve statutory mandates affecting vehicle or fuel manufacture, public transit, and public utilities.

In 2014, CARB adopted the First Update to the Climate Change Scoping Plan: Building on the Framework (2014 Scoping Pan) (CARB 2014b). The 2014 Scoping Plan "highlights California's success to date in reducing its GHG emissions and lays the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050" (CARB 2014b). The 2014 Scoping Plan found that California is on track to meet the 2020 emissions reduction mandate established by AB 32 and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the State realizes the expected benefits of existing policy goals (CARB 2014b).

In conjunction with the 2014 Scoping Plan, CARB identified "six key focus areas comprising major components of the State's economy to evaluate and describe the larger transformative actions that will be needed to meet the State's more expansive emission reduction needs by 2050" (CARB 2014b). Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and (6) natural and working lands. The 2014 Scoping Plan identifies key recommended actions for each sector that will facilitate achievement of the 2050 reduction target.

Based on CARB's research efforts, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050" (CARB 2014b). Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies.

As part of the 2014 Scoping Plan, CARB recalculated statewide 1990 emissions level using updated GWPs identified by the Intergovernmental Panel on Climate Change (IPCC). Using the recalculated 1990 emissions level and the revised 2020 emissions level projection identified in the 2011 Final Supplement, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

The 2014 Scoping Plan included a strong recommendation from CARB for setting a mid-term statewide GHG emissions reduction target. CARB specifically recommended that the mid-term target be consistent with: (i) the United States' pledge to reduce emissions 42 percent below 2005 levels (which translates to a 35 percent reduction from 1990 levels in California); and (ii) the long-term policy goal of reducing emissions to 80 percent below 1990 levels by 2050. However, to date, there is no legislative authorization for a post-2020 GHG reduction target, and CARB has not established such a target.

The 2014 Scoping Plan discusses new residential and commercial building energy efficiency improvements, specifically identifying progress towards net zero energy buildings by 2020 for residential buildings and 2030 for commercial buildings, as an element of meeting mid-term and long-term GHG reduction goals. The 2014 Scoping Plan expresses CARB's commitment to working with the California Public Utilities Commission and California Energy Commission (CEC) to facilitate further achievements in building energy efficiency.

The 2008 Scoping Plan and the 2014 Scoping Plan represent important milestones in California's efforts to reduce GHG emissions statewide. The law also requires the Scoping Plan to be updated every five years. The Scoping Plan process, as stated, is also thorough and encourages public input and participation.

4.2.2.4 California Advanced Clean Car Program

The Advanced Clean Cars program, adopted January 2012, combines the control of smog, soot-causing pollutants, and GHG emissions into a single coordinated package of requirements for model years 2015 through 2025. Accordingly, the Advanced Clean Cars program coordinates the goals of the Pavley, low-emissions vehicle (LEV), zero-emission vehicle (ZEV), and Clean Fuels Outlet (CFO) programs in order to lay the foundation for the commercialization and support of these ultra-clean vehicles.

AB 1493 (Pavley) directed CARB to adopt vehicle standards that lowered GHG emissions from passenger vehicles and light-duty trucks to the maximum extent technologically feasible, beginning with the 2009 model year. CARB has adopted amendments to its regulations that would enforce AB 1493, but provide vehicle manufacturers with new compliance flexibility.

CARB has also adopted a second phase of the Pavley regulations, originally termed "Pavley II" but now called the Low Emission Vehicle III" (LEV III) Standards or Advanced Clean Cars Program, that covers model years 2017 to 2025. CARB estimates that LEV III will reduce vehicle GHGs by an additional 4.0 MMT CO_2E for a 2.4 percent reduction over Pavley I. These reductions come from improved vehicle technologies such as smaller engines with superchargers, continuously variable transmissions, and hybrid electric drives. On August 7, 2012, the final regulation for the adoption of LEV III became effective.

The ZEV regulation, which affects passenger cars and light-duty trucks, is a critical regulation to achieving California's air quality goals and GHG reduction requirements. ZEV was originally part of the LEV program, however, CARB established the ZEV program as a stand-alone regulation in 1999. The ZEV program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018–2025 model years.

On December 8, 2011 CARB proposed an update to the CFO regulation to facilitate hydrogen-fueling stations. The CFO is part of CARB's overall program of promoting clean cars and advanced technology zero-emission vehicles.

4.2.2.5 Low Carbon Fuel Standard

EO S-01-07 directed that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through a Low Carbon Fuel Standard (LCFS).

CARB adopted the LCFS as a discrete early action measure pursuant to AB 32 in April 2009. The LCFS is a performance standard with flexible compliance mechanisms intended to incentivize the development of a diverse set of clean low-carbon transportation fuel options. Its aim is to accelerate the availability and diversity of low-carbon fuels such as biofuels, electricity, and hydrogen by taking into consideration the full life cycle of GHG emissions.

4.2.2.6 Regional Emissions Targets – Senate Bill 375

Senate Bill (SB) 375, the 2008 Sustainable Communities and Climate Protection Act, was signed into law in September 2008 and requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan. The purpose of SB 375 is to align regional transportation planning efforts, regional GHG reduction targets, and fair-share housing allocations under state housing law. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a Sustainable Communities Strategy or Alternative Planning Strategy to address GHG reduction targets from cars and light-duty trucks in the context of that MPO's Regional Transportation Plan. The San Luis Obispo Council of Governments (SLOCOG) is the San Luis Obispo region's MPO. The CARB targets for the SLOCOG region require a 8 percent reduction in GHG emissions per capita from automobiles and light-duty trucks compared to 2005 levels by 2020, and an 8 percent reduction by 2035 (SLOCOG 2014).

4.2.2.7 Renewables Portfolio Standard

The Renewable Portfolio Standard (RPS) promotes diversification of the state's electricity supply and decreased reliance on fossil fuel energy sources. Originally adopted in 2002 with a goal to achieve a 20 percent renewable energy mix by 2020 (referred to as the "Initial RPS"), the goal has been accelerated and increased by EOs S-14-08 and S-21-09 to a goal of 33 percent by 2020. In April 2011, SB 2 (1X) codified California's 33 percent RPS goal. In September 2015, the California Legislature passed SB 350, which increases California's renewable energy mix goal to 50 percent by year 2030. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas.

4.2.2.8 Assembly Bill 341 – Solid Waste Diversion

The Commercial Recycling Requirements mandate that businesses (including public entities) that generate 4 cubic yards or more of commercial solid waste per week and multi-family residential with five units or more arrange for recycling services. Businesses can take one or any combination of the following in order to reuse, recycle, compost, or otherwise divert solid waste from disposal.

Additionally, AB 341 mandates that 75 percent of the solid waste generated be reduced, recycled, or composted by 2020.

4.2.2.9 California Code of Regulations, Title 24 – California Building Code

The California Code of Regulations, Title 24, is referred to as the California Building Code (CBC). It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, handicap accessibility, and so on. Of particular relevance to GHG reductions are the CBC's energy efficiency and green building standards.

Part 6 – Energy Efficiency Standards

The California Code of Regulations, Title 24, Part 6 is the Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The Energy Code is updated periodically to incorporate and consider new energy efficiency technologies and methodologies as they become available. New construction and major renovations must demonstrate their compliance with the current Energy Code through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC. By reducing California's energy consumption, emissions of statewide GHGs may also be reduced. The previous Energy Code, known as the 2008 Energy Code, became effective January 1, 2010. The 2008 Energy Code required energy savings of 15 to 35 percent above the former 2005 Energy Code, which is relevant as the original GHG inventory for the state was based on the 2005 Energy Code.

The current version of the Energy Code, known as the 2013 Energy Code, became effective July 1, 2014. The 2013 Energy Code provides mandatory energy-efficiency measures as well as voluntary tiers for increased energy efficiency. Based on an impact analysis prepared by the CEC for single-family residences, the 2013 Energy Code has been estimated to achieve a 36.4 percent increase in electricity efficiencies and a 6.5 percent increase in natural gas efficiencies over the 2008 Energy Code (CEC 2013). The same report estimates increased efficiencies for multi-family residences of 23.3 percent for electricity use and 3.8 percent for natural gas use. Non-residential structures are estimated to achieve a 21.8 and 16.8 percent increase in electricity and natural gas efficiencies, respectively. The 2016 Energy Code, which becomes effective January 1, 2017, would increase energy efficiency by approximately 28 percent over the 2013 Energy Code (CEC 2016)

Part 11 – California Green Building Standards

The California Green Building Standards Code, referred to as CalGreen, was added to Title 24 as Part 11 first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 CBC). The 2013 CalGreen institutes mandatory minimum environmental performance standards for all ground-up new construction of non-residential and residential structures. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory Green Building Standards and may adopt additional amendments for stricter requirements.

The mandatory standards require:

- 20 percent reduction in indoor water use relative to specified baseline levels;
- 50 percent construction/demolition waste diverted from landfills;
- Inspections of energy systems to ensure optimal working efficiency;
- Low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards;
- Dedicated circuitry to facilitate installation of electric vehicle charging stations in newly constructed attached garages for single family and duplex dwellings; and
- Installation of electric vehicle charging stations at least three percent of the parking spaces for all new multi-family developments with 17 or more units.

Similar to the compliance reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CalGreen water reduction requirements must be demonstrated through completion of water use reporting forms for new low-rise residential and non-residential buildings. The water use compliance form must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CalGreen or a reduced per-plumbing-fixture water use rate.

4.2.3 Local

The County of San Luis Obispo General Plan Conservation and Open Space Element Goal 4 sets forth a countywide GHG emissions reduction target to reduce emissions to 15 percent below 2006 levels by the year 2020. In addition, Implementation Strategy AQ 4.2.5 required that the County develop and implement a Climate Action Plan in order to achieve the reduction target. The Board of Supervisors adopted a Climate Action Plan called the EnergyWise Plan on November 22, 2011. The EnergyWise Plan outlines the County's approach to reducing GHG emissions through a number of goals, measures, and actions that provide a road map to achieving the County's GHG reduction target of 15 percent below baseline levels by 2020 (County of San Luis Obispo 2011). The EnergyWise Plan includes reduction measures associated with energy conservation, renewable energy, solid waste, land use and transportation, water conservation, and agriculture. The Implementation Program of the EnergyWise Plan provides a strategy for action with specific measures and steps to achieve the identified reduction targets.

5.0 Significance Criteria and Analysis Methodologies

5.1 Determining Significance

The California Environmental Quality Act (CEQA) Guidelines, Appendix G Environmental Checklist, includes the following two questions regarding assessment of GHG emissions:

1) Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

2) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of GHGs?

As stated in the CEQA Guidelines, these questions are "intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance" (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, Environmental Checklist Form).

The CEQA Guidelines require Lead Agencies to adopt GHG thresholds of significance. When adopting these thresholds, the amended Guidelines allow Lead Agencies to develop their own significance thresholds and/or to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence.

The County uses guidance from the San Luis Obispo Air Pollution Control District (SLOAPCD) for assessing the significant of GHG impacts. The SLOAPCD's document *GHG Thresholds and Supporting Evidence* (SLOAPCD 2012) describes the SLOAPCD's approach to developing a threshold of significance for GHG emissions to identify the emissions level for which a project would not be expected to substantially conflict with existing legislation adopted to reduce statewide GHG emissions.

Different thresholds have been developed to accommodate various development types and patterns. Three options are recommended for residential/commercial development. Residential and commercial projects may use any of the three options above to determine the significance of a projects GHG emission impact to a level of certainty for lead agencies (SLOAPCD 2012).

1) Qualitative Reduction Strategies (e.g., Climate Action Plans): a qualitative threshold that is consistent with AB 32 Scoping Plan measures and goals.

   If a project is consistent with an adopted Qualified Greenhouse Gas Reduction Strategy that addresses the project's GHG emissions, it can be presumed that the project would not have significant GHG emission impacts and the project would be considered less than significant. A Qualified Greenhouse Gas Reduction Strategy (or similar adopted policies, ordinances and programs) is one that is consistent with all of the AB 32 Scoping Plan measures and goals.

2) Bright-Line Threshold: numerical value to determine the significance of a project's annual GHG emissions.

   This "gap-based approach" is a conservative method that focuses on a limited set of state mandates that are currently expected to have the greatest potential to reduce land use development-related GHG emissions. Based on the results of SLOAPCD calculations, a GHG emissions significance threshold of 1,150 MT CO_2E per year would achieve the aggregate emission reductions needed in the County by 2020 to meet AB 32 reduction targets

3) Efficiency-Based Threshold: assesses the GHG efficiency of a project on a per capita basis.

   This method allows highly efficient projects (e.g. compact and mixed use development) with higher mass emissions to meet the overall GHG reduction goals of AB 32. This approach allows the threshold to be applied evenly to all project types (residential, commercial/retail and mixed use) and uses an emissions inventory comprised only of emission sources from land-use related sectors. The efficiency-based threshold encourages infill and transit-oriented development and puts highly auto-dependent suburban and rural development at a severe disadvantage. GHG efficiency thresholds are determined by dividing the statewide GHG emissions inventory goal (allowable emissions) by the estimated statewide 2020 population and employment (i.e., service population). The SLOAPCD recommends an efficiency threshold of 4.9 MT CO_2E per service population (SLOAPCD 2012).

In addition to the residential/commercial threshold, SLOAPCD also recommends a stationary source (industrial) project threshold of 10,000 MT CO_2E per year.

This analysis uses the recommended efficiency threshold of 4.9 MT CO_2E per service population for determining significance of GHG impacts.

5.2 Methodology and Assumptions

GHG emissions were estimated using CalEEMod (CAPCOA 2013). In brief, the model estimates criteria air pollutants and GHG emissions by multiplying emission source intensity factors by estimated quantities of emission sources based on the land use information. All CalEEMod estimates are in terms of total MT CO_2E.

Emission estimates were calculated for the three GHGs of primary concern (CO_2, CH_4, and N_2O) that would be emitted from the five primary operational sources that would be associated with LOCP buildout: mobile sources, area sources, energy use, water use, and solid waste disposal.

GHG emissions were quantified and projected to year 2020. This is because the AB 32, CARB BAU Forecast, associated Scoping Plan, and EnergyWise Plan's GHG reduction targets are projected to a year 2020 horizon. GHG emissions were also quantified for the LOCP buildout horizon year 2035. The following is a discussion of the assumptions used to calculated GHG emissions.

5.2.1 Construction Emissions

Construction activities emit GHGs primarily though combustion of fuels (mostly diesel) in the engines of off-road construction equipment and through combustion of diesel and gasoline in on-road construction vehicles and in the commute vehicles of the construction workers. Smaller amounts of GHGs are also emitted indirectly through the energy use embodied in any water use (for fugitive dust control) and lighting for the construction activity. Every phase of the construction process, including demolition, grading, paving, and building, emits GHG emissions, in volumes proportional to the quantity and type of construction equipment used. Heavier equipment typically emits more GHGs per hour of use than the lighter equipment because of their greater fuel consumption and engine design.

CalEEMod estimates construction emissions by multiplying the amount of time equipment is in operation by emission factors. At a program level, it would be speculative to estimate the schedule and construction requirements of individual projects included in the LOCP. Thus, this analysis relies on the SLOAPCD which forecasts that 2020 construction emissions would comprise 1.96 percent of total GHG emissions within the county (SLOAPCD 2012). Therefore, construction emissions are estimated at 1.96 percent of the total operational GHG emissions associated with the LOCP area.

5.2.2 Vehicle Emissions

GHG emissions from vehicles come from the combustion of fossil fuels in vehicle engines. The vehicle emissions are calculated based on the vehicle type and the trip rate for each land use. The vehicle emission factors and fleet mix used in CalEEMod are derived from CARB's Emission Factors 2011 model, which includes GHG reducing effects from the implementation of Pavley I (Clean Car Standards) and the LCFS, and are thus considered in the calculation of standards for project emissions. The emissions from mobile sources were reduced by an additional 3 percent to account for implementation of Low Emission Vehicles III and the Tire Pressure Program.

Project trip generation rates were obtained from the Transportation Impact Analysis Report prepared for the LOCP (Omni Means 2016). Trip generation for the existing land uses and buildout of the LOCP are summarized in Table 6. As shown, buildout of the LOCP would increase trips by 25,812 over existing conditions.

Table 6 Existing and Proposed Vehicle Trips			
Land Use	Existing Trips	Proposed Los Osos Community Plan Trips	
		Buildout	Net Increase
Residential			
Single Family	44,450	53,142	8,692
Multi-Family	5,678	10,753	5,075
Residential Total	**50,128**	**63,895**	**13,767**
Non-Residential			
Retail	18,850	28,675	9,824
Commercial/Service	5,746	7,400	1,654
Office	111	678	567
Recreation	0	0	0
Public Facilities/Recreation	0	0	0
Non-Residential Total	**24,708**	**36,753**	**12,045**
TOTAL	**74,836**	**100,648**	**25,812**

Trip lengths were based on the average trip length in County. Based on data reported by SLOAPCD, the existing, year 2020, and year 2035 average regional trip length trip lengths in the County are 5.56, 5.67, and 5.20, respectively (CARB 2014c).

5.2.3 Energy Use Emissions

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. GHGs are emitted during the generation of electricity from fossil fuels off-site in power plants. These emissions are considered indirect but are calculated in association with a building's operation. Electric power generation accounts for the second largest sector contributing to both inventoried and projected statewide GHG emissions. Combustion of fossil fuel emits criteria pollutants and GHGs directly into the atmosphere. When this occurs in a building, this is considered a direct emissions source associated with that building. CalEEMod estimates emissions from the direct combustion of natural gas for space and water heating.

CalEEMod estimates GHG emissions from energy use by multiplying average rates of residential and non-residential energy consumption by the quantities of residential units and non-residential square footage entered in the land use module to obtain total projected energy use. This value is then multiplied by electricity and natural gas GHG emission factors applicable to the project location and utility provider.

Building energy use is typically divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as plug-in appliances. In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in energy use," can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.).

Energy consumption values are based on the CEC-sponsored California Commercial End Use Survey and Residential Appliance Saturation Survey studies, which identify energy use by building type and climate zone. Because these studies are based on older buildings, adjustments have been made in CalEEMod to account for changes to Title 24 Building Codes. CalEEMod can calculate emissions based historical energy use data and on the 2008 Title 24 energy code (Part 6 of the Building Code). For existing uses, historic energy use data was used. For new land uses, adjustment were made to the 2008 Title 24 data.

As identified by the CEC, the Energy Code requires various improvements in the built environment that would achieve a 36.4 percent increase in electricity efficiencies and a 6.5 percent increase in natural gas efficiencies in single family residential buildings, a 23.3 percent increase in electricity efficiencies and a 3.8 percent increase in natural gas efficiencies in multi-family residential buildings, and a 21.8 percent increase in electricity efficiency and a 16.8 percent increase in natural gas efficiency in non-residential buildings (CEC 2013). Additionally, the 2016 Energy Code, which becomes effective January 1, 2017, would increase energy efficiency by an additional 28 percent over the 2013 Energy Code (CEC 2016). To account for the effects of the 2016 Energy Code, energy emissions associated with new land uses were reduced by an additional 28 percent.

The project would be served by Pacific Gas & Electric (PG&E). Therefore, PG&E's specific energy-intensity factors (i.e., the amount of CO_2, CH_4, and N_2O per kilowatt-hour) are used in the calculations of GHG emissions. PG&E currently has renewable energy procurement of 28.0 percent. As discussed, the state mandate for renewable energy is 33 percent by 2020 and 50 percent by 2030. However, the energy-intensity factors included in CalEEMod are based on 2009 data by default at which time PG&E had only achieved a 14.1 percent procurement of renewable energy (CPUC 2011). To account for the continuing effects of RPS, the energy-intensity factors included in CalEEMod were reduced based on the percentage of renewables reported by PG&E. PG&E energy intensity factors that include this reduction are shown in Table 7.

Table 7
Pacific Gas & Electric Energy Intensity Factors

GHG	2009 (lbs/MWh)	2016 (lbs/MWh)	2020 (lbs/MWh)	2035 (lbs/MWh)
Percent Procurement	14.1%	28.0%	33.0%	50.0%
Carbon dioxide (CO_2)	641.35	552.20	447.84	287.06
Methane (CH_4)	0.029	0.025	0.020	0.013
Nitrous oxide (N_2O)	0.006	0.005	0.004	0.003
SOURCE: CPUC 2011.				

5.2.4 Area Source Emissions

Area sources include GHG emissions that would occur from the use of landscaping equipment. The use of landscape equipment emits GHGs associated with the equipment's fuel combustion. The landscaping equipment emission values were derived from the 2011 In-Use Off-Road Equipment Inventory Model (CARB 2011b).

5.2.5 Water and Wastewater Emissions

The amount of water used and wastewater generated by a project has indirect GHG emissions associated with it. These emissions are a result of the energy used to supply, distribute, and treat the water and wastewater. In addition to the indirect GHG emissions associated with energy use, wastewater treatment can directly emit both CH_4 and N_2O.

The indoor and outdoor water use consumption data for each land use subtype comes from the Pacific Institute's *Waste Not, Want Not: The Potential for Urban Water Conservation in California* 2003 (as cited in CAPCOA 2013). Based on that report, a percentage of total water consumption was dedicated to landscape irrigation, which is used to determine outdoor water use. Wastewater generation was similarly based on a reported percentage of total indoor water use.

New development would be subject to CalGreen, which requires a 20 percent increase in indoor water use efficiency. Thus, in order to demonstrate compliance with CalGreen, a 20 percent reduction in indoor water use was included in the water consumption calculations for new development.

In addition to water reductions under CalGreen, the GHG emissions from the energy used to transport the water for both existing and new development are affected by RPS. As discussed previously, to account for the effects of RPS, the energy intensity factors included in CalEEMod were reduced by the values shown in Table 7.

5.2.6 Solid Waste Emissions

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. To calculate the GHG emissions generated by disposing of solid waste for the project, the total volume of solid waste was calculated using waste disposal rates identified by California Department of Resources Recycling and Recovery (CalRecycle). The methods for quantifying GHG emissions from solid waste are based on the IPCC method, using the degradable organic content of waste. GHG emissions associated with the LOCP's waste disposal were calculated using these parameters. According to a CalRecyle report to the Legislature, as of 2013 California has achieved a statewide 50 percent diversion of solid waste from landfills through "reduce/recycle/compost" programs (CalRecycle 2015). However, AB 341 mandates that 75 percent of the solid waste generated be reduced, recycled, or composted by 2020. Therefore, to account for the continuing actions of recycling requirements under state law (i.e. AB 341), a 25 percent solid waste diversion rate was included in the modeled.

6.0 GHG Impact Analysis

In accordance with CEQA and County guidance, this analysis evaluates the significance of the project in terms of (1) its contribution of GHGs to cumulative statewide emissions and (2) whether the project would conflict with local and state regulations, plans, and policies aimed at reducing GHG emissions.

6.1 GHG Emissions

6.1.1 Impacts

As discussed in Section 4.1, Determining Significance, a significant GHG impact would occur if implementation of the proposed LOCP would result in GHG emissions that exceed an annual efficiency threshold of 4.9 MT CO_2E per service population.

Based on the methodology summarized in Section 4.2, Methodology and Assumptions, the year 2020 primary sources of direct and indirect GHG emissions have been calculated. Additionally, for informational purposes, the buildout year 2035 GHG emissions have been calculated. Table 8 summarizes the LOCP emissions. The complete model outputs for year 2020 and year 2035 GHG emission calculations are included in Attachments 2 and 3, respectively.

Table 8
Year 2020 and Year 2035 Annual GHG Emissions
(MT CO_2E)

Emission Source	Year 2020 GHG Emissions	Year 2035 GHG Emissions
Vehicles	51,965	44,364
Energy Use	26,787	22,160
Area Sources	10,599	10,599
Water Use	1,726	1,380
Solid Waste Disposal	3,249	3,249
Construction	405	349
TOTAL	**94,731**	**82,100**
Service Population	*21,942*	*21,942*
GHG Emissions per Service Population	***4.3***	***3.7***
NOTE: Totals may vary due to independent rounding.		

As shown, year 2020 GHG emissions associated with implementation of the LOCP would be 94,731 MT CO_2E and year 2035 GHG emissions would be 82,100 MT CO_2E. This decrease is a result of federal, state, and local implementation measures such as increased vehicle efficiency standards and PG&E's increase in renewable sources of energy in accordance with RPS goals.

The service population for the LOCP was determined using the average household size for Los Osos and employment densities provided by SLOCOG. In Los Osos, there is an average of 2.38 persons per occupied dwelling unit. Retail uses have on average 2.39 employees per 1,000 square feet and office uses have on average 2.52 employees per 1,000 square feet (SLOAPCD 2012). Using this data, it was calculated that buildout of the LOCP would have a service population of 21,942. As shown in Table 8, in year 2020, the LOCP would result in GHG emissions of 4.3 MT CO_2E per service population annually. By year 2035, GHG emissions would decrease to 3.7 MT CO_2E per service population annually.

6.1.2 Significance of Impacts

As demonstrated, the LOCP would result in year 2020 emissions of 4.3 MT CO_2E per service population annually. By emitting less than 4.9 MT CO_2E per service population, the project's contribution of GHGs to cumulative statewide emissions would be less than cumulatively considerable. Therefore, the project's direct and indirect GHG emissions would have a less than significant impact on the environment.

6.2 Applicable Adopted Plans, Policies, and Regulations Intended to Reduce GHG Emissions

6.2.1 Impacts

The following analysis is based on the whether the proposed LOCP and subsequent development would conflict with policies, plans, or regulations. Thus, the question is not whether the GHG emissions from future development would be controlled by regulations to the extent they are not considered significant, but rather would the LOCP result in a conflict with a policy, plans, or regulations that would result in the policy, plan, or regulation not be implemented or creating a situation where the goals of the plan, policy, or regulation could not be achieved.

EO S-3-05 established GHG emission reduction targets for the state, and AB 32 codified the 2020 goal of EO S-3-05 and launched the Climate Change Scoping Plan that outlined the reduction measures needed to reach these targets. The project would not exceed the efficiency threshold of 4.9 MT CO_2E per service population. This threshold was developed by the SLOAPCD and is based on comprehensive policy and regulatory analysis, as well as technical evaluation of development trends in the County. As the project is below the efficiency threshold, it would not conflict with the AB 32 mandate for reducing GHG emissions at the state level nor would it conflict with the County's EnergyWise Plan for reducing GHG emissions at the local level (SLOAPCD 2012).

As discussed in Section 4.2.2.1, EO S-3-05 establishes an executive policy of reducing GHG emissions to 80 percent below 1990 levels by 2050. Additionally, EO B-30-15 establishes an interim GHG emission reduction policy by the executive branch for the state of California to reduce GHG emissions 40 percent below 1990 levels by 2030. The 2020 GHG emission policy of EO S-3-05, to reduce GHG emissions to 1990 levels by 2020, was codified by the Legislature's adoption of AB 32. As discussed above, the project would be consistent with the reduction goals of AB 32. The 2050 goal of EO S-3-05 was not codified by the Legislature. Similarly, EO B-30-15's goal to reduce statewide GHG emissions to 40 percent below 1990 levels by 2030 has not been codified by the Legislature. Nonetheless, because these two EOs represent a GHG reduction policy in the context of CEQA and the strong interest in California's post-2020 climate policy, this analysis renders a determination as to whether the project would conflict with or impede substantial progress towards the statewide reduction policies established by EO B-30-15 for 2030 and by EO S-3-05 for 2050.

As illustrated above, the project would emit less than 4.9 MT CO_2E per service population annually and would not interfere with the County's ability to achieve the GHG reduction goals outlined in the EnergyWise Plan. Further, the project's 2020 emissions represent the maximum emissions inventory for the project; as project emissions would continue to decline from 2020 through at least 2050 based on regulatory forecasting. Given the reasonably anticipated decline in project emissions, due to existing regulatory programs, once the project is fully constructed and operational, the project emissions would continue to decline in line with the GHG reductions needed to achieve the EOs' interim (2030) and horizon-year (2050) goals. Therefore, the project would not conflict with the long-term GHG policy goals of the state. As such, the project's impacts with respect to the state's post-2020 GHG emissions goals under EO B-30-15 and EO S-3-05 would be less than significant.

6.2.2 Significance of Impacts

The LOCP would not conflict with any local or state plan, policy, or regulation aimed at reducing GHG emissions from land use and development. Thus, impacts would be less than significant.

7.0 Conclusions

As summarized in Table 8, in year 2020, the LOCP would result in GHG emissions of 4.3 MT CO_2E per service population annually. By year 2035, GHG emissions would decrease to 3.7 MT CO_2E per service population annually. By emitting less than 4.9 MT CO_2E per service population, the project's contribution of GHGs to cumulative statewide emissions would be less than cumulatively considerable. Therefore, the project's direct and indirect GHG emissions would have a less than significant impact on the environment. In addition, the project would not conflict with the goals and strategies of local and state plans, policies, and regulations adopted to reduce GHG emissions. Thus, impacts associated with applicable policies, plans, and regulations would be less than significant.

8.0 References Cited

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ATTACHMENTS

ATTACHMENT 1

CalEEMod Output – Existing Emissions

7773 Los Osos - Existing 2016

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	231.10	1000sqft	5.31	231,100.00	0
Apartments Low Rise	895.00	Dwelling Unit	55.94	895,000.00	2560
Single Family Housing	5,426.00	Dwelling Unit	1,761.69	9,766,800.00	15518
Strip Mall	439.20	1000sqft	10.08	439,200.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 3.2 **Precipitation Freq (Days)** 44

Climate Zone 4 **Operational Year** 2016

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 552.2 **CH4 Intensity (lb/MWhr)** 0.025 **N2O Intensity (lb/MWhr)** 0.005

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS status - PGE currently at 28.0%
CalEEMod accounts for 14.1%
Additional 13.9% reduction applied
(552.20, 0.025, 0.005)

Land Use - Existing land uses

Construction Phase - Existing uses - no construction

Vehicle Trips - TIA
Existing trip length = 5.56 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - Historical data

Mobile Land Use Mitigation -

Area Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	155,000.00	1.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	492.00
tblFireplaces	NumberGas	0.00	2,984.00
tblFireplaces	NumberNoFireplace	0.00	90.00
tblFireplaces	NumberNoFireplace	0.00	543.00

tblFireplaces	NumberWood	0.00	313.00
tblFireplaces	NumberWood	0.00	1,899.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.025
tblProjectCharacteristics	CO2IntensityFactor	641.35	552.2
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.005
tblProjectCharacteristics	OperationalYear	2014	2016
tblVehicleTrips	CC_TL	5.00	5.56
tblVehicleTrips	CC_TL	5.00	5.56
tblVehicleTrips	CNW_TL	5.00	5.56
tblVehicleTrips	CNW_TL	5.00	5.56
tblVehicleTrips	CW_TL	13.00	5.56
tblVehicleTrips	CW_TL	13.00	5.56
tblVehicleTrips	HO_TL	5.00	5.56
tblVehicleTrips	HO_TL	5.00	5.56
tblVehicleTrips	HS_TL	5.00	5.56
tblVehicleTrips	HS_TL	5.00	5.56
tblVehicleTrips	HW_TL	13.00	5.56
tblVehicleTrips	HW_TL	13.00	5.56
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	25.34
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2017	0.0116	0.0512	0.1396	2.3000e-004	0.0153	1.3700e-003	0.0167	4.1000e-003	1.2800e-003	5.3800e-003	0.0000	18.2296	18.2296	9.6000e-004	0.0000	18.2498
Total	**0.0116**	**0.0512**	**0.1396**	**2.3000e-004**	**0.0153**	**1.3700e-003**	**0.0167**	**4.1000e-003**	**1.2800e-003**	**5.3800e-003**	**0.0000**	**18.2296**	**18.2296**	**9.6000e-004**	**0.0000**	**18.2498**

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2017	0.0116	0.0512	0.1396	2.3000e-004	0.0153	1.3700e-003	0.0167	4.1000e-003	1.2800e-003	5.3800e-003	0.0000	18.2296	18.2296	9.6000e-004	0.0000	18.2498
Total	**0.0116**	**0.0512**	**0.1396**	**2.3000e-004**	**0.0153**	**1.3700e-003**	**0.0167**	**4.1000e-003**	**1.2800e-003**	**5.3800e-003**	**0.0000**	**18.2296**	**18.2296**	**9.6000e-004**	**0.0000**	**18.2498**

	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**	**N20**	**CO2e**
Percent Reduction	**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**	**0.00**

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	440.0984	5.3619	509.0170	4.5400e-003		58.4306	58.4306		58.4286	58.4286	5,149.8155	2,878.4472	8,028.2627	0.1958	0.5046	8,188.7968
Energy	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	25,158.0166	25,158.0166	0.8251	0.3393	25,280.5407
Mobile	52.9779	110.7324	464.0889	0.6580	45.2350	1.2293	46.4643	12.1224	1.1281	13.2505	0.0000	52,547.2101	52,547.2101	2.6338	0.0000	52,602.5202
Waste						0.0000	0.0000		0.0000	0.0000	1,512.3152	0.0000	1,512.3152	89.3753	0.0000	3,389.1957
Water						0.0000	0.0000		0.0000	0.0000	154.0095	925.0934	1,079.1029	15.8601	0.3819	1,530.5483
Total	**494.2910**	**126.4921**	**977.6502**	**0.7288**	**45.2350**	**60.4992**	**105.7342**	**12.1224**	**60.3960**	**72.5184**	**6,816.1401**	**81,508.7673**	**88,324.9074**	**108.8901**	**1.2258**	**90,991.6016**

2.2 Overall Operational

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	440.0984	5.3619	509.0170	4.5400e-003		58.4306	58.4306		58.4286	58.4286	5,149.8155	2,878.4472	8,028.2627	0.1958	0.5046	8,188.7968
Energy	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	25,158.0166	25,158.0166	0.8251	0.3393	25,280.5407
Mobile	51.3236	100.1383	431.5315	0.5819	39.7022	1.0950	40.7972	10.6397	1.0048	11.6445	0.0000	46,444.5862	46,444.5862	2.3741	0.0000	46,494.4420
Waste						0.0000	0.0000		0.0000	0.0000	1,512.3152	0.0000	1,512.3152	89.3753	0.0000	3,389.1957
Water						0.0000	0.0000		0.0000	0.0000	154.0095	925.0934	1,079.1029	15.8576	0.3814	1,530.3418
Total	**492.6366**	**115.8979**	**945.0929**	**0.6527**	**39.7022**	**60.3649**	**100.0671**	**10.6397**	**60.2727**	**70.9124**	**6,816.1401**	**75,406.1434**	**82,222.2835**	**108.6279**	**1.2253**	**84,883.3170**

	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	N20	CO2e
Percent Reduction	0.33	8.38	3.33	10.44	12.23	0.22	5.36	12.23	0.20	2.21	0.00	7.49	6.91	0.24	0.04	6.71

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	2,812.00	786.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6900e-003	0.0292	0.0540	7.0000e-005	1.7500e-003	3.8000e-004	2.1300e-003	5.0000e-004	3.5000e-004	8.5000e-004	0.0000	5.9399	5.9399	5.0000e-005	0.0000	5.9409
Worker	5.3800e-003	8.7600e-003	0.0765	1.5000e-004	0.0135	1.0000e-004	0.0136	3.6000e-003	9.0000e-005	3.6900e-003	0.0000	11.0923	11.0923	6.2000e-004	0.0000	11.1053
Total	**0.0101**	**0.0380**	**0.1305**	**2.2000e-004**	**0.0153**	**4.8000e-004**	**0.0158**	**4.1000e-003**	**4.4000e-004**	**4.5400e-003**	**0.0000**	**17.0322**	**17.0322**	**6.7000e-004**	**0.0000**	**17.0462**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6900e-003	0.0292	0.0540	7.0000e-005	1.7500e-003	3.8000e-004	2.1300e-003	5.0000e-004	3.5000e-004	8.5000e-004	0.0000	5.9399	5.9399	5.0000e-005	0.0000	5.9409
Worker	5.3800e-003	8.7600e-003	0.0765	1.5000e-004	0.0135	1.0000e-004	0.0136	3.6000e-003	9.0000e-005	3.6900e-003	0.0000	11.0923	11.0923	6.2000e-004	0.0000	11.1053
Total	**0.0101**	**0.0380**	**0.1305**	**2.2000e-004**	**0.0153**	**4.8000e-004**	**0.0158**	**4.1000e-003**	**4.4000e-004**	**4.5400e-003**	**0.0000**	**17.0322**	**17.0322**	**6.7000e-004**	**0.0000**	**17.0462**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Category	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
	tons/yr										MT/yr					
Mitigated	51.3236	100.1383	431.5315	0.5819	39.7022	1.0950	40.7972	10.6397	1.0048	11.6445	0.0000	46,444.5862	46,444.5862	2.3741	0.0000	46,494.4420
Unmitigated	52.9779	110.7324	464.0889	0.6580	45.2350	1.2293	46.4643	12.1224	1.1281	13.2505	0.0000	52,547.2101	52,547.2101	2.6338	0.0000	52,602.5202

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,674.30	6,408.20	5432.65	10,324,521	9,061,691
General Office Building	5,856.07	547.71	226.48	7,109,814	6,240,186
Single Family Housing	44,438.94	54,694.08	47586.02	83,308,905	73,119,087
Strip Mall	18,850.46	18,463.97	8972.86	19,445,438	17,066,996
Total	74,819.78	80,113.96	62,218.00	120,188,678	105,487,960

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.56	5.56	5.56	35.80	21.00	43.20	86	11	3
General Office Building	5.56	5.56	5.56	33.00	48.00	19.00	77	19	4
Single Family Housing	5.56	5.56	5.56	35.80	21.00	43.20	86	11	3
Strip Mall	5.56	5.56	5.56	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455937	0.042338	0.214948	0.150714	0.068093	0.009944	0.017510	0.022507	0.002330	0.001401	0.008743	0.000855	0.004680

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	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						0.0000	0.0000		0.0000	0.0000	0.0000	13,136.3971	13,136.3971	0.5947	0.1190	13,185.7597
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	13,136.3971	13,136.3971	0.5947	0.1190	13,185.7597
NaturalGas Mitigated	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	12,021.6195	12,021.6195	0.2304	0.2204	12,094.7811
NaturalGas Unmitigated	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	12,021.6195	12,021.6195	0.2304	0.2204	12,094.7811

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/yr	tons/yr										MT/yr					
General Office Building	4.61276e+006	0.0249	0.2261	0.1899	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.1542	246.1542	4.7200e-003	4.5100e-003	247.6523
Single Family Housing	2.09174e+008	1.1279	9.6384	4.1015	0.0615		0.7793	0.7793		0.7793	0.7793	0.0000	11,162.3203	11,162.3203	0.2139	0.2046	11,230.2523
Strip Mall	1.28246e+006	6.9200e-003	0.0629	0.0528	3.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	68.4372	68.4372	1.3100e-003	1.2500e-003	68.8537
Apartments Low Rise	1.02074e+007	0.0550	0.4703	0.2002	3.0000e-003		0.0380	0.0380		0.0380	0.0380	0.0000	544.7078	544.7078	0.0104	9.9900e-003	548.0228
Total		**1.2147**	**10.3977**	**4.5444**	**0.0663**		**0.8393**	**0.8393**		**0.8393**	**0.8393**	**0.0000**	**12,021.6195**	**12,021.6195**	**0.2304**	**0.2204**	**12,094.7811**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.09174e+008	1.1279	9.6384	4.1015	0.0615		0.7793	0.7793		0.7793	0.7793	0.0000	11,162.3203	11,162.3203	0.2139	0.2046	11,230.2523
Strip Mall	1.28246e+006	6.9200e-003	0.0629	0.0528	3.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	68.4372	68.4372	1.3100e-003	1.2500e-003	68.8537
Apartments Low Rise	1.02074e+007	0.0550	0.4703	0.2002	3.0000e-003		0.0380	0.0380		0.0380	0.0380	0.0000	544.7078	544.7078	0.0104	9.9900e-003	548.0228
General Office Building	4.61276e+006	0.0249	0.2261	0.1899	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.1542	246.1542	4.7200e-003	4.5100e-003	247.6523
Total		**1.2147**	**10.3977**	**4.5444**	**0.0663**		**0.8393**	**0.8393**		**0.8393**	**0.8393**	**0.0000**	**12,021.6195**	**12,021.6195**	**0.2304**	**0.2204**	**12,094.7811**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	3.34715e +006	838.3725	0.0380	7.5900e-003	841.5229
General Office Building	4.75373e +006	1,190.683 6	0.0539	0.0108	1,195.157 9
Single Family Housing	3.89651e +007	9,759.742 3	0.4419	0.0884	9,796.416 4
Strip Mall	5.3802e +006	1,347.598 6	0.0610	0.0122	1,352.662 5
Total		**13,136.39 71**	**0.5947**	**0.1189**	**13,185.75 97**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	3.34715e +006	838.3725	0.0380	7.5900e-003	841.5229
General Office Building	4.75373e +006	1,190.683 6	0.0539	0.0108	1,195.157 9
Single Family Housing	3.89651e +007	9,759.742 3	0.4419	0.0884	9,796.416 4
Strip Mall	5.3802e +006	1,347.598 6	0.0610	0.0122	1,352.662 5
Total		**13,136.39 71**	**0.5947**	**0.1189**	**13,185.75 97**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	440.0984	5.3619	509.0170	4.5400e-003		58.4306	58.4306		58.4286	58.4286	5,149.815 5	2,878.447 2	8,028.262 7	0.1958	0.5046	8,188.796 8
Unmitigated	440.0984	5.3619	509.0170	4.5400e-003		58.4306	58.4306		58.4286	58.4286	5,149.815 5	2,878.447 2	8,028.262 7	0.1958	0.5046	8,188.796 8

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	10.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	44.2575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	382.6191	4.3410	421.7605	0.0000		57.9599	57.9599		57.9579	57.9579	5,149.8155	2,737.8707	7,887.6862	0.0525	0.5046	8,045.2110
Landscaping	2.7487	1.0209	87.2565	4.5400e-003		0.4707	0.4707		0.4707	0.4707	0.0000	140.5765	140.5765	0.1433	0.0000	143.5857
Total	**440.0984**	**5.3619**	**509.0170**	**4.5400e-003**		**58.4306**	**58.4306**		**58.4286**	**58.4286**	**5,149.8155**	**2,878.4472**	**8,028.2627**	**0.1958**	**0.5046**	**8,188.7968**

6.2 Area by SubCategory

Mitigated

SubCategory	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
	tons/yr										MT/yr					
Architectural Coating	10.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	44.2575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	382.6191	4.3410	421.7605	0.0000		57.9599	57.9599		57.9579	57.9579	5,149.8155	2,737.8707	7,887.6862	0.0525	0.5046	8,045.2110
Landscaping	2.7487	1.0209	87.2565	4.5400e-003		0.4707	0.4707		0.4707	0.4707	0.0000	140.5765	140.5765	0.1433	0.0000	143.5857
Total	**440.0984**	**5.3619**	**509.0170**	**4.5400e-003**		**58.4306**	**58.4306**		**58.4286**	**58.4286**	**5,149.8155**	**2,878.4472**	**8,028.2627**	**0.1958**	**0.5046**	**8,188.7968**

7.0 Water Detail

7.1 Mitigation Measures Water

Category	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	1,079.1029	15.8576	0.3814	1,530.3418
Unmitigated	1,079.1029	15.8601	0.3819	1,530.5483

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	58.3129 / 36.7625	129.7603	1.9052	0.0459	183.9895
General Office Building	41.0743 / 25.1746	90.7689	1.3419	0.0323	128.9644
Single Family Housing	353.526 / 222.875	786.6806	11.5502	0.2781	1,115.4489
Strip Mall	32.5327 / 19.9394	71.8931	1.0629	0.0256	102.1456
Total		**1,079.1028**	**15.8601**	**0.3819**	**1,530.5483**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	58.3129 / 36.7625	129.7603	1.9049	0.0458	183.9646
General Office Building	41.0743 / 25.1746	90.7689	1.3417	0.0323	128.9469
Single Family Housing	353.526 / 222.875	786.6806	11.5484	0.2778	1,115.2985
Strip Mall	32.5327 / 19.9394	71.8931	1.0627	0.0256	102.1317
Total		**1,079.1028**	**15.8576**	**0.3814**	**1,530.3418**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	1,512.3152	89.3753	0.0000	3,389.1957
Mitigated	1,512.3152	89.3753	0.0000	3,389.1957

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	411.7	83.5714	4.9389	0.0000	187.2889
General Office Building	214.92	43.6268	2.5783	0.0000	97.7705
Single Family Housing	6362.38	1,291.5056	76.3258	0.0000	2,894.3474
Strip Mall	461.16	93.6113	5.5323	0.0000	209.7890
Total		**1,512.3152**	**89.3753**	**0.0000**	**3,389.1957**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	411.7	83.5714	4.9389	0.0000	187.2889
General Office Building	214.92	43.6268	2.5783	0.0000	97.7705
Single Family Housing	6362.38	1,291.505 6	76.3258	0.0000	2,894.347 4
Strip Mall	461.16	93.6113	5.5323	0.0000	209.7890
Total		**1,512.315 2**	**89.3753**	**0.0000**	**3,389.195 7**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

ATTACHMENT 2

CalEEMod Output – Year 2020 LOCP Emissions

EXISTING LAND USES - 2016

Vehicles	46,494
Energy	25,281
Area	8,189
Water	1,530
Waste	3,389
Total	84,883
Per Service Pop. (16,676)	5

PROPOSED LOCP - 2020

	CalEEMod Output	Additional Reductions
Vehicles	53,572	51,965
Energy	28,342	26,787
Area	10,599	10,599
Water	1,726	1,726
Waste	3,249	3,249
Construction	405	405
Total	97,893	94,731
Per Service Pop. (21,942)		*4.32*

EXISTING LAND USES - 2020

	CalEEMod Output	Additional Reductions*
Vehicles	41,971	40,712
Energy	22,788	22,788
Area	8,189	8,189
Water	1,355	1,355
Waste	2,542	2,542
Construction	0	0
Total	76,845	75,586
Per Service Pop. (16,676)		*4.53*

*LEV III and Tire Pressure Program (3%)

PROPOSED LOCP NET INCREASE OVER EXISTING LAND USES - 2020

	CalEEMod Output	Additional Reductions*
Vehicles	11,601	11,253
Energy	5,554	3,999
Area	2,411	2,411
Water	371	371
Waste	707	707
Construction	405	405
Total	21,048	19,145
Per Service Pop. (5,266)		*3.64*

*LEV III and Tire Pressure Program (3%), and 2016 Title 24 (28%)

PROPOSED LOCP - 2035

	CalEEMod Output	Additional Reductions
Vehicles	45,736	44,364
Energy	23,407	22,160
Area	10,599	10,599
Water	1,380	1,380
Waste	3,249	3,249
Construction	349	349
Total	84,720	82,100
Per Service Pop. (21,942)		*3.74*

EXISTING LAND USES - 2035

	CalEEMod Output	Additional Reductions*
Vehicles	35,823	34,748
Energy	18,952	18,952
Area	8,189	8,189
Water	1,085	1,085
Waste	2,542	2,542
Construction	0	0
Total	66,591	65,516
Per Service Pop. (16,676)		*3.93*

*LEV III and Tire Pressure Program (3%)

PROPOSED LOCP NET INCREASE OVER EXISTING LAND USES - 2035

	CalEEMod Output	Additional Reductions*
Vehicles	9,913	9,615
Energy	4,455	3,208
Area	2,411	2,411
Water	295	295
Waste	707	707
Construction	349	349
Total	18,129	16,584
Per Service Pop. (5,266)		*3.15*

*LEV III and Tire Pressure Program (3%), and 2016 Title 24 (28%)

7773 Los Osos - Existing 2020

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	231.10	1000sqft	5.31	231,100.00	0
Apartments Low Rise	895.00	Dwelling Unit	55.94	895,000.00	2560
Single Family Housing	5,426.00	Dwelling Unit	1,761.69	9,766,800.00	15518
Strip Mall	439.20	1000sqft	10.08	439,200.00	0

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 3.2 **Precipitation Freq (Days)** 44

Climate Zone 4 **Operational Year** 2020

Utility Company Pacific Gas & Electric Company

CO2 Intensity (lb/MWhr) 447.84 **CH4 Intensity (lb/MWhr)** 0.02 **N2O Intensity (lb/MWhr)** 0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2020 33% required
CalEEMod accounts for 14.1%
Additional 18.9% reduction applied
(447.84, 0.020, 0.004)

Land Use - Existing land uses

Construction Phase - Existing uses - no construction

Vehicle Trips - TIA
2020 trip length = 5.67 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - Historical data

Mobile Land Use Mitigation -

Area Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	155,000.00	1.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	492.00
tblFireplaces	NumberGas	0.00	2,984.00
tblFireplaces	NumberNoFireplace	0.00	90.00

tblFireplaces	NumberNoFireplace	0.00	543.00
tblFireplaces	NumberWood	0.00	313.00
tblFireplaces	NumberWood	0.00	1,899.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	447.84
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TL	5.00	5.67
tblVehicleTrips	CC_TL	5.00	5.67
tblVehicleTrips	CNW_TL	5.00	5.67
tblVehicleTrips	CNW_TL	5.00	5.67
tblVehicleTrips	CW_TL	13.00	5.67
tblVehicleTrips	CW_TL	13.00	5.67
tblVehicleTrips	HO_TL	5.00	5.67
tblVehicleTrips	HO_TL	5.00	5.67
tblVehicleTrips	HS_TL	5.00	5.67
tblVehicleTrips	HS_TL	5.00	5.67
tblVehicleTrips	HW_TL	13.00	5.67
tblVehicleTrips	HW_TL	13.00	5.67
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	25.34
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2017	0.0116	0.0512	0.1396	2.3000e-004	0.0153	1.3700e-003	0.0167	4.1000e-003	1.2800e-003	5.3800e-003	0.0000	18.2296	18.2296	9.6000e-004	0.0000	18.2498
Total	**0.0116**	**0.0512**	**0.1396**	**2.3000e-004**	**0.0153**	**1.3700e-003**	**0.0167**	**4.1000e-003**	**1.2800e-003**	**5.3800e-003**	**0.0000**	**18.2296**	**18.2296**	**9.6000e-004**	**0.0000**	**18.2498**

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2017	0.0116	0.0512	0.1396	2.3000e-004	0.0153	1.3700e-003	0.0167	4.1000e-003	1.2800e-003	5.3800e-003	0.0000	18.2296	18.2296	9.6000e-004	0.0000	18.2498
Total	**0.0116**	**0.0512**	**0.1396**	**2.3000e-004**	**0.0153**	**1.3700e-003**	**0.0167**	**4.1000e-003**	**1.2800e-003**	**5.3800e-003**	**0.0000**	**18.2296**	**18.2296**	**9.6000e-004**	**0.0000**	**18.2498**

	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	N20	CO2e
Percent Reduction	**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**	**0.00**

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	439.9796	5.3396	508.1038	4.5400e-003		58.4347	58.4347		58.4327	58.4327	5,149.8155	2,878.4473	8,028.2627	0.1896	0.5046	8,188.6669
Energy	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	22,675.3755	22,675.3755	0.7062	0.3156	22,788.0271
Mobile	39.4449	78.9117	337.7405	0.6705	46.1384	0.9764	47.1148	12.3652	0.9002	13.2654	0.0000	47,449.3639	47,449.3639	1.9051	0.0000	47,489.3701
Waste						0.0000	0.0000		0.0000	0.0000	1,512.3152	0.0000	1,512.3152	89.3753	0.0000	3,389.1957
Water						0.0000	0.0000		0.0000	0.0000	154.0095	750.2605	904.2699	15.8518	0.3802	1,355.0201
Total	**480.6393**	**94.6491**	**850.3886**	**0.7413**	**46.1384**	**60.2503**	**106.3887**	**12.3652**	**60.1722**	**72.5373**	**6,816.1401**	**73,753.4471**	**80,569.5872**	**108.0279**	**1.2003**	**83,210.2800**

2.2 Overall Operational

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	439.9796	5.3396	508.1038	4.5400e-003		58.4347	58.4347		58.4327	58.4327	5,149.8155	2,878.4473	8,028.2627	0.1896	0.5046	8,188.6669
Energy	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	22,675.3755	22,675.3755	0.7062	0.3156	22,788.0271
Mobile	38.2955	71.6097	315.2173	0.5928	40.4950	0.8718	41.3668	10.8527	0.8038	11.6566	0.0000	41,935.4737	41,935.4737	1.7124	0.0000	41,971.4340
Waste						0.0000	0.0000		0.0000	0.0000	1,134.2364	0.0000	1,134.2364	67.0315	0.0000	2,541.8968
Water						0.0000	0.0000		0.0000	0.0000	154.0095	750.2605	904.2699	15.8498	0.3798	1,354.8549
Total	**479.4899**	**87.3471**	**827.8655**	**0.6636**	**40.4950**	**60.1457**	**100.6407**	**10.8527**	**60.0757**	**70.9285**	**6,438.0613**	**68,239.5569**	**74,677.6182**	**85.4894**	**1.2000**	**76,844.8798**

	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**	**N20**	**CO2e**
Percent Reduction	**0.24**	**7.71**	**2.65**	**10.48**	**12.23**	**0.17**	**5.40**	**12.23**	**0.16**	**2.22**	**5.55**	**7.48**	**7.31**	**20.86**	**0.03**	**7.65**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	2,812.00	786.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6900e-003	0.0292	0.0540	7.0000e-005	1.7500e-003	3.8000e-004	2.1300e-003	5.0000e-004	3.5000e-004	8.5000e-004	0.0000	5.9399	5.9399	5.0000e-005	0.0000	5.9409
Worker	5.3800e-003	8.7600e-003	0.0765	1.5000e-004	0.0135	1.0000e-004	0.0136	3.6000e-003	9.0000e-005	3.6900e-003	0.0000	11.0923	11.0923	6.2000e-004	0.0000	11.1053
Total	**0.0101**	**0.0380**	**0.1305**	**2.2000e-004**	**0.0153**	**4.8000e-004**	**0.0158**	**4.1000e-003**	**4.4000e-004**	**4.5400e-003**	**0.0000**	**17.0322**	**17.0322**	**6.7000e-004**	**0.0000**	**17.0462**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6900e-003	0.0292	0.0540	7.0000e-005	1.7500e-003	3.8000e-004	2.1300e-003	5.0000e-004	3.5000e-004	8.5000e-004	0.0000	5.9399	5.9399	5.0000e-005	0.0000	5.9409
Worker	5.3800e-003	8.7600e-003	0.0765	1.5000e-004	0.0135	1.0000e-004	0.0136	3.6000e-003	9.0000e-005	3.6900e-003	0.0000	11.0923	11.0923	6.2000e-004	0.0000	11.1053
Total	**0.0101**	**0.0380**	**0.1305**	**2.2000e-004**	**0.0153**	**4.8000e-004**	**0.0158**	**4.1000e-003**	**4.4000e-004**	**4.5400e-003**	**0.0000**	**17.0322**	**17.0322**	**6.7000e-004**	**0.0000**	**17.0462**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

	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	38.2955	71.6097	315.2173	0.5928	40.4950	0.8718	41.3668	10.8527	0.8038	11.6566	0.0000	41,935.4737	41,935.4737	1.7124	0.0000	41,971.4340
Unmitigated	39.4449	78.9117	337.7405	0.6705	46.1384	0.9764	47.1148	12.3652	0.9002	13.2654	0.0000	47,449.3639	47,449.3639	1.9051	0.0000	47,489.3701

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,674.30	6,408.20	5432.65	10,528,659	9,240,860
General Office Building	5,856.07	547.71	226.48	7,250,352	6,363,535
Single Family Housing	44,438.94	54,694.08	47586.02	84,956,101	74,564,809
Strip Mall	18,850.46	18,463.97	8972.86	19,828,273	17,403,004
Total	74,819.78	80,113.96	62,218.00	122,563,384	107,572,207

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.67	5.67	5.67	35.80	21.00	43.20	86	11	3
General Office Building	5.67	5.67	5.67	33.00	48.00	19.00	77	19	4
Single Family Housing	5.67	5.67	5.67	35.80	21.00	43.20	86	11	3
Strip Mall	5.67	5.67	5.67	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455364	0.042256	0.214716	0.150220	0.067756	0.009843	0.017984	0.023763	0.002333	0.001397	0.008836	0.000832	0.004699

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: Y

5.1 Mitigation Measures Energy

Category	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
	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10,653.7560	10,653.7560	0.4758	0.0952	10,693.2461
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	10,653.7560	10,653.7560	0.4758	0.0952	10,693.2461
NaturalGas Mitigated	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	12,021.6195	12,021.6195	0.2304	0.2204	12,094.7811
NaturalGas Unmitigated	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	12,021.6195	12,021.6195	0.2304	0.2204	12,094.7811

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/yr	tons/yr										MT/yr					
General Office Building	4.61276e+006	0.0249	0.2261	0.1899	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.1542	246.1542	4.7200e-003	4.5100e-003	247.6523
Single Family Housing	2.09174e+008	1.1279	9.6384	4.1015	0.0615		0.7793	0.7793		0.7793	0.7793	0.0000	11,162.3203	11,162.3203	0.2139	0.2046	11,230.2523
Strip Mall	1.28246e+006	6.9200e-003	0.0629	0.0528	3.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	68.4372	68.4372	1.3100e-003	1.2500e-003	68.8537
Apartments Low Rise	1.02074e+007	0.0550	0.4703	0.2002	3.0000e-003		0.0380	0.0380		0.0380	0.0380	0.0000	544.7078	544.7078	0.0104	9.9900e-003	548.0228
Total		**1.2147**	**10.3977**	**4.5444**	**0.0663**		**0.8393**	**0.8393**		**0.8393**	**0.8393**	**0.0000**	**12,021.6195**	**12,021.6195**	**0.2304**	**0.2204**	**12,094.7811**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.09174e+008	1.1279	9.6384	4.1015	0.0615		0.7793	0.7793		0.7793	0.7793	0.0000	11,162.3203	11,162.3203	0.2139	0.2046	11,230.2523
Strip Mall	1.28246e+006	6.9200e-003	0.0629	0.0528	3.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	68.4372	68.4372	1.3100e-003	1.2500e-003	68.8537
Apartments Low Rise	1.02074e+007	0.0550	0.4703	0.2002	3.0000e-003		0.0380	0.0380		0.0380	0.0380	0.0000	544.7078	544.7078	0.0104	9.9900e-003	548.0228
General Office Building	4.61276e+006	0.0249	0.2261	0.1899	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.1542	246.1542	4.7200e-003	4.5100e-003	247.6523
Total		**1.2147**	**10.3977**	**4.5444**	**0.0663**		**0.8393**	**0.8393**		**0.8393**	**0.8393**	**0.0000**	**12,021.6195**	**12,021.6195**	**0.2304**	**0.2204**	**12,094.7811**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	3.34715e +006	679.9289	0.0304	6.0700e-003	682.4492
General Office Building	4.75373e +006	965.6569	0.0431	8.6300e-003	969.2363
Single Family Housing	3.89651e +007	7,915.253 5	0.3535	0.0707	7,944.592 8
Strip Mall	5.3802e +006	1,092.916 7	0.0488	9.7600e-003	1,096.967 7
Total		**10,653.75 60**	**0.4758**	**0.0952**	**10,693.24 61**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	3.34715e +006	679.9289	0.0304	6.0700e-003	682.4492
General Office Building	4.75373e +006	965.6569	0.0431	8.6300e-003	969.2363
Single Family Housing	3.89651e +007	7,915.253 5	0.3535	0.0707	7,944.592 8
Strip Mall	5.3802e +006	1,092.916 7	0.0488	9.7600e-003	1,096.967 7
Total		**10,653.75 60**	**0.4758**	**0.0952**	**10,693.24 61**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	439.9796	5.3396	508.1038	4.5400e-003		58.4347	58.4347		58.4327	58.4327	5,149.815 5	2,878.447 3	8,028.262 7	0.1896	0.5046	8,188.666 9
Unmitigated	439.9796	5.3396	508.1038	4.5400e-003		58.4347	58.4347		58.4327	58.4327	5,149.815 5	2,878.447 3	8,028.262 7	0.1896	0.5046	8,188.666 9

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	10.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	44.2575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	382.6191	4.3410	421.7605	0.0000		57.9599	57.9599		57.9579	57.9579	5,149.815 5	2,737.870 7	7,887.686 2	0.0525	0.5046	8,045.2110
Landscaping	2.6300	0.9986	86.3433	4.5400e-003		0.4748	0.4748		0.4748	0.4748	0.0000	140.5765	140.5765	0.1371	0.0000	143.4559
Total	**439.9796**	**5.3396**	**508.1038**	**4.5400e-003**		**58.4347**	**58.4347**		**58.4327**	**58.4327**	**5,149.815 5**	**2,878.447 3**	**8,028.262 7**	**0.1896**	**0.5046**	**8,188.666 9**

6.2 Area by SubCategory

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	10.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	44.2575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	382.6191	4.3410	421.7605	0.0000		57.9599	57.9599		57.9579	57.9579	5,149.815 5	2,737.870 7	7,887.686 2	0.0525	0.5046	8,045.2110
Landscaping	2.6300	0.9986	86.3433	4.5400e-003		0.4748	0.4748		0.4748	0.4748	0.0000	140.5765	140.5765	0.1371	0.0000	143.4559
Total	**439.9796**	**5.3396**	**508.1038**	**4.5400e-003**		**58.4347**	**58.4347**		**58.4327**	**58.4327**	**5,149.815 5**	**2,878.447 3**	**8,028.262 7**	**0.1896**	**0.5046**	**8,188.666 9**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	904.2699	15.8498	0.3798	1,354.854 9
Unmitigated	904.2699	15.8518	0.3802	1,355.020 1

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	58.3129 / 36.7625	108.7332	1.9042	0.0457	162.8788
General Office Building	41.0743 / 25.1746	76.0773	1.3412	0.0322	114.2143
Single Family Housing	353.526 / 222.875	659.2028	11.5441	0.2769	987.4641
Strip Mall	32.5327 / 19.9394	60.2566	1.0623	0.0255	90.4628
Total		**904.2699**	**15.8518**	**0.3802**	**1,355.0201**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	58.3129 / 36.7625	108.7332	1.9039	0.0456	162.8590
General Office Building	41.0743 / 25.1746	76.0773	1.3411	0.0321	114.2003
Single Family Housing	353.526 / 222.875	659.2028	11.5426	0.2766	987.3438
Strip Mall	32.5327 / 19.9394	60.2566	1.0622	0.0255	90.4518
Total		**904.2699**	**15.8498**	**0.3798**	**1,354.8549**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	1,512.3152	89.3753	0.0000	3,389.1957
Mitigated	1,134.2364	67.0315	0.0000	2,541.8968

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	411.7	83.5714	4.9389	0.0000	187.2889
General Office Building	214.92	43.6268	2.5783	0.0000	97.7705
Single Family Housing	6362.38	1,291.5056	76.3258	0.0000	2,894.3474
Strip Mall	461.16	93.6113	5.5323	0.0000	209.7890
Total		**1,512.3152**	**89.3753**	**0.0000**	**3,389.1957**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	308.775	62.6785	3.7042	0.0000	140.4666
General Office Building	161.19	32.7201	1.9337	0.0000	73.3279
Single Family Housing	4771.78	968.6292	57.2444	0.0000	2,170.7605
Strip Mall	345.87	70.2085	4.1492	0.0000	157.3417
Total		**1,134.2364**	**67.0315**	**0.0000**	**2,541.8968**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

7773 Los Osos - Proposed LOCP Net Increase 2020

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	115.10	1000sqft	2.64	115,100.00	0
Racquet Club	20.00	1000sqft	0.46	20,000.00	0
Apartments Low Rise	800.00	Dwelling Unit	50.00	800,000.00	2288
Single Family Housing	1,061.00	Dwelling Unit	344.48	1,909,800.00	3034
Strip Mall	228.90	1000sqft	5.25	228,900.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2020
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	447.84	**CH4 Intensity (lb/MWhr)**	0.02	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2020 33% required
CalEEMod accounts for 14.1%
Additional 18.9% reduction applied
(447.84, 0.020, 0.004)

Land Use - Proposed LOCP net increase over existing land uses

Construction Phase - Construction calculated seperately

Vehicle Trips - TIA
2020 trip length = 5.67 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - 2013 Title 24

Water And Wastewater - CalGreen 20% decrease in indoor water use

Mobile Land Use Mitigation -

Area Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	7,750.00	1.00
tblEnergyUse	T24E	236.91	181.71
tblEnergyUse	T24E	7.46	5.83
tblEnergyUse	T24E	1.81	1.42
tblEnergyUse	T24E	368.61	234.44
tblEnergyUse	T24E	3.37	2.64
tblEnergyUse	T24NG	8,283.47	7,968.70
tblEnergyUse	T24NG	17.16	14.28
tblEnergyUse	T24NG	20.74	17.26

tblEnergyUse	T24NG	29,406.10	27,494.70
tblEnergyUse	T24NG	2.49	2.07
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	440.00
tblFireplaces	NumberGas	0.00	584.00
tblFireplaces	NumberNoFireplace	0.00	80.00
tblFireplaces	NumberNoFireplace	0.00	106.00
tblFireplaces	NumberWood	0.00	280.00
tblFireplaces	NumberWood	0.00	371.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.02
tblProjectCharacteristics	CO2IntensityFactor	641.35	447.84
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.004
tblProjectCharacteristics	OperationalYear	2014	2020
tblVehicleTrips	CC_TL	5.00	5.67
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	5.67
tblVehicleTrips	CNW_TL	5.00	5.67
tblVehicleTrips	CNW_TL	5.00	0.00
tblVehicleTrips	CNW_TL	5.00	5.67
tblVehicleTrips	CW_TL	13.00	5.67
tblVehicleTrips	CW_TL	13.00	0.00
tblVehicleTrips	CW_TL	13.00	5.67
tblVehicleTrips	HO_TL	5.00	5.67

tblVehicleTrips	HO_TL	5.00	5.67
tblVehicleTrips	HS_TL	5.00	5.67
tblVehicleTrips	HS_TL	5.00	5.67
tblVehicleTrips	HW_TL	13.00	5.67
tblVehicleTrips	HW_TL	13.00	5.67
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	19.29
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWater	IndoorWaterUseRate	52,123,220.50	41,698,576.40
tblWater	IndoorWaterUseRate	20,457,154.39	16,365,723.51
tblWater	IndoorWaterUseRate	1,182,862.88	946,290.30
tblWater	IndoorWaterUseRate	69,128,421.18	55,302,736.94
tblWater	IndoorWaterUseRate	16,955,200.17	13,564,160.14
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2017	5.1500e-003	0.0262	0.0561	9.0000e-005	5.7600e-003	1.0500e-003	6.8100e-003	1.5400e-003	9.9000e-004	2.5300e-003	0.0000	7.3991	7.3991	5.5000e-004	0.0000	7.4106
Total	**5.1500e-003**	**0.0262**	**0.0561**	**9.0000e-005**	**5.7600e-003**	**1.0500e-003**	**6.8100e-003**	**1.5400e-003**	**9.9000e-004**	**2.5300e-003**	**0.0000**	**7.3991**	**7.3991**	**5.5000e-004**	**0.0000**	**7.4106**

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2017	5.1500e-003	0.0262	0.0561	9.0000e-005	5.7600e-003	1.0500e-003	6.8100e-003	1.5400e-003	9.9000e-004	2.5300e-003	0.0000	7.3991	7.3991	5.5000e-004	0.0000	7.4106
Total	**5.1500e-003**	**0.0262**	**0.0561**	**9.0000e-005**	**5.7600e-003**	**1.0500e-003**	**6.8100e-003**	**1.5400e-003**	**9.9000e-004**	**2.5300e-003**	**0.0000**	**7.3991**	**7.3991**	**5.5000e-004**	**0.0000**	**7.4106**

	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**	**N20**	**CO2e**
Percent Reduction	**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**	**0.00**

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	128.1821	1.5716	149.5494	1.3400e-003		17.1977	17.1977		17.1971	17.1971	1,515.6103	847.9468	2,363.5570	0.0558	0.1485	2,410.7700
Energy	0.2501	2.1449	0.9656	0.0136		0.1728	0.1728		0.1728	0.1728	0.0000	5,527.4945	5,527.4945	0.1838	0.0726	5,553.8720
Mobile	13.1415	25.5435	110.6284	0.2147	14.7297	0.3139	15.0437	3.9476	0.2895	4.2370	0.0000	15,191.5320	15,191.5320	0.6142	0.0000	15,204.4305
Waste						0.0000	0.0000		0.0000	0.0000	420.8673	0.0000	420.8673	24.8725	0.0000	943.1906
Water						0.0000	0.0000		0.0000	0.0000	40.5696	211.7259	252.2956	4.1764	0.1003	371.0857
Total	**141.5736**	**29.2600**	**261.1434**	**0.2297**	**14.7297**	**17.6844**	**32.4141**	**3.9476**	**17.6593**	**21.6069**	**1,977.0471**	**21,778.6992**	**23,755.7463**	**29.9027**	**0.3214**	**24,483.3489**

2.2 Overall Operational

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	128.1821	1.5716	149.5494	1.3400e-003		17.1977	17.1977		17.1971	17.1971	1,515.6103	847.9468	2,363.5570	0.0558	0.1485	2,410.7700
Energy	0.2501	2.1449	0.9656	0.0136		0.1728	0.1728		0.1728	0.1728	0.0000	5,527.4945	5,527.4945	0.1838	0.0726	5,553.8720
Mobile	12.3908	20.7745	95.9187	0.1640	11.0441	0.2456	11.2897	2.9598	0.2265	3.1863	0.0000	11,590.4337	11,590.4337	0.4884	0.0000	11,600.6898
Waste						0.0000	0.0000		0.0000	0.0000	315.6504	0.0000	315.6504	18.6544	0.0000	707.3930
Water						0.0000	0.0000		0.0000	0.0000	40.5696	211.7259	252.2956	4.1758	0.1002	371.0422
Total	**140.8230**	**24.4911**	**246.4336**	**0.1789**	**11.0441**	**17.6161**	**28.6602**	**2.9598**	**17.5963**	**20.5562**	**1,871.8303**	**18,177.6008**	**20,049.4312**	**23.5582**	**0.3213**	**20,643.7670**

	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**	**N20**	**CO2e**
Percent Reduction	**0.53**	**16.30**	**5.63**	**22.10**	**25.02**	**0.39**	**11.58**	**25.02**	**0.36**	**4.86**	**5.32**	**16.53**	**15.60**	**21.22**	**0.03**	**15.68**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	1,076.00	259.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5500e-003	9.6300e-003	0.0178	2.0000e-005	5.8000e-004	1.3000e-004	7.0000e-004	1.7000e-004	1.2000e-004	2.8000e-004	0.0000	1.9573	1.9573	2.0000e-005	0.0000	1.9576
Worker	2.0600e-003	3.3500e-003	0.0293	6.0000e-005	5.1800e-003	4.0000e-005	5.2200e-003	1.3800e-003	4.0000e-005	1.4100e-003	0.0000	4.2444	4.2444	2.4000e-004	0.0000	4.2494
Total	**3.6100e-003**	**0.0130**	**0.0471**	**8.0000e-005**	**5.7600e-003**	**1.7000e-004**	**5.9200e-003**	**1.5500e-003**	**1.6000e-004**	**1.6900e-003**	**0.0000**	**6.2017**	**6.2017**	**2.6000e-004**	**0.0000**	**6.2070**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5500e-003	9.6300e-003	0.0178	2.0000e-005	5.8000e-004	1.3000e-004	7.0000e-004	1.7000e-004	1.2000e-004	2.8000e-004	0.0000	1.9573	1.9573	2.0000e-005	0.0000	1.9576
Worker	2.0600e-003	3.3500e-003	0.0293	6.0000e-005	5.1800e-003	4.0000e-005	5.2200e-003	1.3800e-003	4.0000e-005	1.4100e-003	0.0000	4.2444	4.2444	2.4000e-004	0.0000	4.2494
Total	**3.6100e-003**	**0.0130**	**0.0471**	**8.0000e-005**	**5.7600e-003**	**1.7000e-004**	**5.9200e-003**	**1.5500e-003**	**1.6000e-004**	**1.6900e-003**	**0.0000**	**6.2017**	**6.2017**	**2.6000e-004**	**0.0000**	**6.2070**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

	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	12.3908	20.7745	95.9187	0.1640	11.0441	0.2456	11.2897	2.9598	0.2265	3.1863	0.0000	11,590.4337	11,590.4337	0.4884	0.0000	11,600.6898
Unmitigated	13.1415	25.5435	110.6284	0.2147	14.7297	0.3139	15.0437	3.9476	0.2895	4.2370	0.0000	15,191.5320	15,191.5320	0.6142	0.0000	15,204.4305

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,072.00	5,728.00	4856.00	9,411,092	7,056,264
General Office Building	2,220.28	272.79	112.80	2,771,116	2,077,732
Racquet Club	0.00	0.00	0.00		
Single Family Housing	8,689.59	10,694.88	9304.97	16,612,315	12,455,609
Strip Mall	9,824.39	9,622.96	4676.43	10,333,997	7,748,241
Total	25,806.26	26,318.62	18,950.20	39,128,520	29,337,846

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.67	5.67	5.67	35.80	21.00	43.20	86	11	3
General Office Building	5.67	5.67	5.67	33.00	48.00	19.00	77	19	4
Racquet Club	0.00	0.00	0.00	11.50	69.50	19.00	52	39	9
Single Family Housing	5.67	5.67	5.67	35.80	21.00	43.20	86	11	3
Strip Mall	5.67	5.67	5.67	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.455364	0.042256	0.214716	0.150220	0.067756	0.009843	0.017984	0.023763	0.002333	0.001397	0.008836	0.000832	0.004699

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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						0.0000	0.0000		0.0000	0.0000	0.0000	3,052.2920	3,052.2920	0.1363	0.0273	3,063.6059
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	3,052.2920	3,052.2920	0.1363	0.0273	3,063.6059
NaturalGas Mitigated	0.2501	2.1449	0.9656	0.0136		0.1728	0.1728		0.1728	0.1728	0.0000	2,475.2025	2,475.2025	0.0474	0.0454	2,490.2661
NaturalGas Unmitigated	0.2501	2.1449	0.9656	0.0136		0.1728	0.1728		0.1728	0.1728	0.0000	2,475.2025	2,475.2025	0.0474	0.0454	2,490.2661

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/yr	tons/yr										MT/yr					
Racquet Club	478600	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.5399	25.5399	4.9000e-004	4.7000e-004	25.6954
Single Family Housing	3.54072e+007	0.1909	1.6315	0.6943	0.0104		0.1319	0.1319		0.1319	0.1319	0.0000	1,889.4644	1,889.4644	0.0362	0.0346	1,900.9633
Strip Mall	473823	2.5500e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2850	25.2850	4.8000e-004	4.6000e-004	25.4389
Apartments Low Rise	8.37336e+006	0.0452	0.3858	0.1642	2.4600e-003		0.0312	0.0312		0.0312	0.0312	0.0000	446.8344	446.8344	8.5600e-003	8.1900e-003	449.5537
General Office Building	1.65053e+006	8.9000e-003	0.0809	0.0680	4.9000e-004		6.1500e-003	6.1500e-003		6.1500e-003	6.1500e-003	0.0000	88.0788	88.0788	1.6900e-003	1.6100e-003	88.6148
Total		**0.2501**	**2.1449**	**0.9656**	**0.0136**		**0.1728**	**0.1728**		**0.1728**	**0.1728**	**0.0000**	**2,475.2025**	**2,475.2025**	**0.0474**	**0.0454**	**2,490.2661**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Racquet Club	478600	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.5399	25.5399	4.9000e-004	4.7000e-004	25.6954
Single Family Housing	3.54072e+007	0.1909	1.6315	0.6943	0.0104		0.1319	0.1319		0.1319	0.1319	0.0000	1,889.4644	1,889.4644	0.0362	0.0346	1,900.9633
Strip Mall	473823	2.5500e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2850	25.2850	4.8000e-004	4.6000e-004	25.4389
Apartments Low Rise	8.37336e+006	0.0452	0.3858	0.1642	2.4600e-003		0.0312	0.0312		0.0312	0.0312	0.0000	446.8344	446.8344	8.5600e-003	8.1900e-003	449.5537
General Office Building	1.65053e+006	8.9000e-003	0.0809	0.0680	4.9000e-004		6.1500e-003	6.1500e-003		6.1500e-003	6.1500e-003	0.0000	88.0788	88.0788	1.6900e-003	1.6100e-003	88.6148
Total		**0.2501**	**2.1449**	**0.9656**	**0.0136**		**0.1728**	**0.1728**		**0.1728**	**0.1728**	**0.0000**	**2,475.2025**	**2,475.2025**	**0.0474**	**0.0454**	**2,490.2661**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	2.90121e +006	589.3421	0.0263	5.2600e-003	591.5266
General Office Building	2.08101e +006	422.7293	0.0189	3.7800e-003	424.2962
Racquet Club	172800	35.1020	1.5700e-003	3.1000e-004	35.2322
Single Family Housing	7.36203e +006	1,495.5003	0.0668	0.0134	1,501.0436
Strip Mall	2.50874e +006	509.6183	0.0228	4.5500e-003	511.5072
Total		**3,052.2920**	**0.1363**	**0.0273**	**3,063.6059**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	2.90121e +006	589.3421	0.0263	5.2600e-003	591.5266
General Office Building	2.08101e +006	422.7293	0.0189	3.7800e-003	424.2962
Racquet Club	172800	35.1020	1.5700e-003	3.1000e-004	35.2322
Single Family Housing	7.36203e +006	1,495.500 3	0.0668	0.0134	1,501.043 6
Strip Mall	2.50874e +006	509.6183	0.0228	4.5500e-003	511.5072
Total		**3,052.292 0**	**0.1363**	**0.0273**	**3,063.605 9**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	128.1821	1.5716	149.5494	1.3400e-003		17.1977	17.1977		17.1971	17.1971	1,515.6103	847.9468	2,363.5570	0.0558	0.1485	2,410.7700
Unmitigated	128.1821	1.5716	149.5494	1.3400e-003		17.1977	17.1977		17.1971	17.1971	1,515.6103	847.9468	2,363.5570	0.0558	0.1485	2,410.7700

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	2.7965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	12.0047					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	112.6063	1.2776	124.1257	0.0000		17.0579	17.0579		17.0573	17.0573	1,515.6103	806.5534	2,322.1637	0.0155	0.1485	2,368.5286
Landscaping	0.7746	0.2940	25.4236	1.3400e-003		0.1398	0.1398		0.1398	0.1398	0.0000	41.3934	41.3934	0.0404	0.0000	42.2414
Total	**128.1821**	**1.5716**	**149.5494**	**1.3400e-003**		**17.1977**	**17.1977**		**17.1971**	**17.1971**	**1,515.6103**	**847.9468**	**2,363.5570**	**0.0558**	**0.1485**	**2,410.7700**

6.2 Area by SubCategory

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	2.7965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	12.0047					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	112.6063	1.2776	124.1257	0.0000		17.0579	17.0579		17.0573	17.0573	1,515.6103	806.5534	2,322.1637	0.0155	0.1485	2,368.5286
Landscaping	0.7746	0.2940	25.4236	1.3400e-003		0.1398	0.1398		0.1398	0.1398	0.0000	41.3934	41.3934	0.0404	0.0000	42.2414
Total	**128.1821**	**1.5716**	**149.5494**	**1.3400e-003**		**17.1977**	**17.1977**		**17.1971**	**17.1971**	**1,515.6103**	**847.9468**	**2,363.5570**	**0.0558**	**0.1485**	**2,410.7700**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	252.2956	4.1758	0.1002	371.0422
Unmitigated	252.2956	4.1764	0.1003	371.0857

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	41.6986 / 32.8603	82.4260	1.3618	0.0327	121.1619
General Office Building	16.3657 / 12.5383	32.0953	0.5345	0.0128	47.2973
Racquet Club	0.94629 / 0.72498	1.8558	0.0309	7.4000e-004	2.7348
Single Family Housing	55.3027 / 43.581	109.3174	1.8061	0.0434	160.6910
Strip Mall	13.5642 / 10.3919	26.6011	0.4430	0.0106	39.2007
Total		**252.2956**	**4.1763**	**0.1003**	**371.0857**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	41.6986 / 32.8603	82.4260	1.3617	0.0327	121.1477
General Office Building	16.3657 / 12.5383	32.0953	0.5344	0.0128	47.2917
Racquet Club	0.94629 / 0.72498	1.8558	0.0309	7.4000e-004	2.7345
Single Family Housing	55.3027 / 43.581	109.3174	1.8059	0.0433	160.6722
Strip Mall	13.5642 / 10.3919	26.6011	0.4429	0.0106	39.1961
Total		**252.2956**	**4.1758**	**0.1002**	**371.0422**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	420.8673	24.8725	0.0000	943.1906
Mitigated	315.6504	18.6544	0.0000	707.3930

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	368	74.7007	4.4147	0.0000	167.4090
General Office Building	107.04	21.7282	1.2841	0.0000	48.6942
Racquet Club	114	23.1410	1.3676	0.0000	51.8604
Single Family Housing	1243.94	252.5086	14.9228	0.0000	565.8880
Strip Mall	240.35	48.7889	2.8833	0.0000	109.3390
Total		**420.8673**	**24.8725**	**0.0000**	**943.1906**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	276	56.0255	3.3110	0.0000	125.5568
General Office Building	80.28	16.2961	0.9631	0.0000	36.5206
Racquet Club	85.5	17.3557	1.0257	0.0000	38.8953
Single Family Housing	932.955	189.3814	11.1921	0.0000	424.4160
Strip Mall	180.262	36.5917	2.1625	0.0000	82.0043
Total		**315.6504**	**18.6544**	**0.0000**	**707.3930**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

ATTACHMENT 3

CalEEMod Output – Year 2035 LOCP Emissions

7773 Los Osos - Existing 2035

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	231.10	1000sqft	5.31	231,100.00	0
Apartments Low Rise	895.00	Dwelling Unit	55.94	895,000.00	2560
Single Family Housing	5,426.00	Dwelling Unit	1,761.69	9,766,800.00	15518
Strip Mall	439.20	1000sqft	10.08	439,200.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	287.06	**CH4 Intensity (lb/MWhr)**	0.013	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2030 50% required
CalEEMod accounts for 14.1%
Additional 35.9% reduction applied
(287.06, 0.013, 0.003)

Land Use - Existing land uses

Construction Phase - Existing uses - no construction

Vehicle Trips - TIA
2035 trip length = 5.20 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - Historical data

Mobile Land Use Mitigation -

Area Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	155,000.00	1.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	492.00
tblFireplaces	NumberGas	0.00	2,984.00
tblFireplaces	NumberNoFireplace	0.00	90.00

tblFireplaces	NumberNoFireplace	0.00	543.00
tblFireplaces	NumberWood	0.00	313.00
tblFireplaces	NumberWood	0.00	1,899.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.013
tblProjectCharacteristics	CO2IntensityFactor	641.35	287.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	25.34
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2017	0.0116	0.0512	0.1396	2.3000e-004	0.0153	1.3700e-003	0.0167	4.1000e-003	1.2800e-003	5.3800e-003	0.0000	18.2296	18.2296	9.6000e-004	0.0000	18.2498
Total	**0.0116**	**0.0512**	**0.1396**	**2.3000e-004**	**0.0153**	**1.3700e-003**	**0.0167**	**4.1000e-003**	**1.2800e-003**	**5.3800e-003**	**0.0000**	**18.2296**	**18.2296**	**9.6000e-004**	**0.0000**	**18.2498**

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2017	0.0116	0.0512	0.1396	2.3000e-004	0.0153	1.3700e-003	0.0167	4.1000e-003	1.2800e-003	5.3800e-003	0.0000	18.2296	18.2296	9.6000e-004	0.0000	18.2498
Total	**0.0116**	**0.0512**	**0.1396**	**2.3000e-004**	**0.0153**	**1.3700e-003**	**0.0167**	**4.1000e-003**	**1.2800e-003**	**5.3800e-003**	**0.0000**	**18.2296**	**18.2296**	**9.6000e-004**	**0.0000**	**18.2498**

	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	N20	CO2e
Percent Reduction	**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**	**0.00**

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	439.9144	5.3304	507.5152	4.5400e-003		58.4371	58.4371		58.4351	58.4351	5,149.8155	2,878.4472	8,028.2627	0.1863	0.5046	8,188.5985
Energy	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	18,850.5477	18,850.5477	0.5397	0.2918	18,952.3277
Mobile	24.5331	38.4701	193.6195	0.6182	42.3252	0.7918	43.1171	11.3429	0.7310	12.0740	0.0000	40,486.6970	40,486.6970	1.0480	0.0000	40,508.7052
Waste						0.0000	0.0000		0.0000	0.0000	1,512.3152	0.0000	1,512.3152	89.3753	0.0000	3,389.1957
Water						0.0000	0.0000		0.0000	0.0000	154.0095	480.9078	634.9173	15.8400	0.3785	1,084.9019
Total	**465.6622**	**54.1982**	**705.6791**	**0.6890**	**42.3252**	**60.0682**	**102.3934**	**11.3429**	**60.0054**	**71.3483**	**6,816.1401**	**62,696.5997**	**69,512.7398**	**106.9893**	**1.1749**	**72,123.7289**

2.2 Overall Operational

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	439.9144	5.3304	507.5152	4.5400e-003		58.4371	58.4371		58.4351	58.4351	5,149.8155	2,878.4472	8,028.2627	0.1863	0.5046	8,188.5985
Energy	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	18,850.5477	18,850.5477	0.5397	0.2918	18,952.3277
Mobile	23.8559	35.3645	181.4345	0.5468	37.1483	0.7130	37.8612	9.9555	0.6583	10.6138	0.0000	35,803.3807	35,803.3807	0.9379	0.0000	35,823.0765
Waste						0.0000	0.0000		0.0000	0.0000	1,134.2364	0.0000	1,134.2364	67.0315	0.0000	2,541.8968
Water						0.0000	0.0000		0.0000	0.0000	154.0095	480.9078	634.9173	15.8387	0.3782	1,084.7822
Total	**464.9850**	**51.0926**	**693.4940**	**0.6176**	**37.1483**	**59.9893**	**97.1376**	**9.9555**	**59.9327**	**69.8882**	**6,438.0613**	**58,013.2835**	**64,451.3448**	**84.5341**	**1.1746**	**66,590.6816**

	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**	**N20**	**CO2e**
Percent Reduction	**0.15**	**5.73**	**1.73**	**10.36**	**12.23**	**0.13**	**5.13**	**12.23**	**0.12**	**2.05**	**5.55**	**7.47**	**7.28**	**20.99**	**0.03**	**7.67**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	2,812.00	786.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6900e-003	0.0292	0.0540	7.0000e-005	1.7500e-003	3.8000e-004	2.1300e-003	5.0000e-004	3.5000e-004	8.5000e-004	0.0000	5.9399	5.9399	5.0000e-005	0.0000	5.9409
Worker	5.3800e-003	8.7600e-003	0.0765	1.5000e-004	0.0135	1.0000e-004	0.0136	3.6000e-003	9.0000e-005	3.6900e-003	0.0000	11.0923	11.0923	6.2000e-004	0.0000	11.1053
Total	**0.0101**	**0.0380**	**0.1305**	**2.2000e-004**	**0.0153**	**4.8000e-004**	**0.0158**	**4.1000e-003**	**4.4000e-004**	**4.5400e-003**	**0.0000**	**17.0322**	**17.0322**	**6.7000e-004**	**0.0000**	**17.0462**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6900e-003	0.0292	0.0540	7.0000e-005	1.7500e-003	3.8000e-004	2.1300e-003	5.0000e-004	3.5000e-004	8.5000e-004	0.0000	5.9399	5.9399	5.0000e-005	0.0000	5.9409
Worker	5.3800e-003	8.7600e-003	0.0765	1.5000e-004	0.0135	1.0000e-004	0.0136	3.6000e-003	9.0000e-005	3.6900e-003	0.0000	11.0923	11.0923	6.2000e-004	0.0000	11.1053
Total	**0.0101**	**0.0380**	**0.1305**	**2.2000e-004**	**0.0153**	**4.8000e-004**	**0.0158**	**4.1000e-003**	**4.4000e-004**	**4.5400e-003**	**0.0000**	**17.0322**	**17.0322**	**6.7000e-004**	**0.0000**	**17.0462**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Category	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
	tons/yr										MT/yr					
Mitigated	23.8559	35.3645	181.4345	0.5468	37.1483	0.7130	37.8612	9.9555	0.6583	10.6138	0.0000	35,803.3807	35,803.3807	0.9379	0.0000	35,823.0765
Unmitigated	24.5331	38.4701	193.6195	0.6182	42.3252	0.7918	43.1171	11.3429	0.7310	12.0740	0.0000	40,486.6970	40,486.6970	1.0480	0.0000	40,508.7052

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,674.30	6,408.20	5432.65	9,656,433	8,475,319
General Office Building	5,856.07	547.71	226.48	6,649,871	5,836,501
Single Family Housing	44,438.94	54,694.08	47586.02	77,918,081	68,387,634
Strip Mall	18,850.46	18,463.97	8972.86	18,192,527	15,967,332
Total	74,819.78	80,113.96	62,218.00	112,416,911	98,666,786

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
General Office Building	5.20	5.20	5.20	33.00	48.00	19.00	77	19	4
Single Family Housing	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
Strip Mall	5.20	5.20	5.20	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.457495	0.042122	0.213987	0.146817	0.067454	0.009853	0.017888	0.026015	0.002466	0.001424	0.009078	0.000704	0.004697

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	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						0.0000	0.0000		0.0000	0.0000	0.0000	6,828.928 2	6,828.928 2	0.3093	0.0714	6,857.546 6
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	6,828.928 2	6,828.928 2	0.3093	0.0714	6,857.546 6
NaturalGas Mitigated	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	12,021.61 95	12,021.61 95	0.2304	0.2204	12,094.78 11
NaturalGas Unmitigated	1.2147	10.3977	4.5443	0.0663		0.8393	0.8393		0.8393	0.8393	0.0000	12,021.61 95	12,021.61 95	0.2304	0.2204	12,094.78 11

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/yr	tons/yr										MT/yr					
General Office Building	4.61276e+006	0.0249	0.2261	0.1899	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.1542	246.1542	4.7200e-003	4.5100e-003	247.6523
Single Family Housing	2.09174e+008	1.1279	9.6384	4.1015	0.0615		0.7793	0.7793		0.7793	0.7793	0.0000	11,162.3203	11,162.3203	0.2139	0.2046	11,230.2523
Strip Mall	1.28246e+006	6.9200e-003	0.0629	0.0528	3.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	68.4372	68.4372	1.3100e-003	1.2500e-003	68.8537
Apartments Low Rise	1.02074e+007	0.0550	0.4703	0.2002	3.0000e-003		0.0380	0.0380		0.0380	0.0380	0.0000	544.7078	544.7078	0.0104	9.9900e-003	548.0228
Total		**1.2147**	**10.3977**	**4.5444**	**0.0663**		**0.8393**	**0.8393**		**0.8393**	**0.8393**	**0.0000**	**12,021.6195**	**12,021.6195**	**0.2304**	**0.2204**	**12,094.7811**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	2.09174e+008	1.1279	9.6384	4.1015	0.0615		0.7793	0.7793		0.7793	0.7793	0.0000	11,162.3203	11,162.3203	0.2139	0.2046	11,230.2523
Strip Mall	1.28246e+006	6.9200e-003	0.0629	0.0528	3.8000e-004		4.7800e-003	4.7800e-003		4.7800e-003	4.7800e-003	0.0000	68.4372	68.4372	1.3100e-003	1.2500e-003	68.8537
Apartments Low Rise	1.02074e+007	0.0550	0.4703	0.2002	3.0000e-003		0.0380	0.0380		0.0380	0.0380	0.0000	544.7078	544.7078	0.0104	9.9900e-003	548.0228
General Office Building	4.61276e+006	0.0249	0.2261	0.1899	1.3600e-003		0.0172	0.0172		0.0172	0.0172	0.0000	246.1542	246.1542	4.7200e-003	4.5100e-003	247.6523
Total		**1.2147**	**10.3977**	**4.5444**	**0.0663**		**0.8393**	**0.8393**		**0.8393**	**0.8393**	**0.0000**	**12,021.6195**	**12,021.6195**	**0.2304**	**0.2204**	**12,094.7811**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	3.34715e +006	435.8262	0.0197	4.5500e-003	437.6526
General Office Building	4.75373e +006	618.9744	0.0280	6.4700e-003	621.5683
Single Family Housing	3.89651e +007	5,073.581 4	0.2298	0.0530	5,094.843 5
Strip Mall	5.3802e +006	700.5463	0.0317	7.3200e-003	703.4821
Total		**6,828.928 2**	**0.3093**	**0.0714**	**6,857.546 6**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	3.34715e +006	435.8262	0.0197	4.5500e-003	437.6526
General Office Building	4.75373e +006	618.9744	0.0280	6.4700e-003	621.5683
Single Family Housing	3.89651e +007	5,073.581 4	0.2298	0.0530	5,094.843 5
Strip Mall	5.3802e +006	700.5463	0.0317	7.3200e-003	703.4821
Total		**6,828.928 2**	**0.3093**	**0.0714**	**6,857.546 6**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	439.9144	5.3304	507.5152	4.5400e-003		58.4371	58.4371		58.4351	58.4351	5,149.815 5	2,878.447 2	8,028.262 7	0.1863	0.5046	8,188.598 5
Unmitigated	439.9144	5.3304	507.5152	4.5400e-003		58.4371	58.4371		58.4351	58.4351	5,149.815 5	2,878.447 2	8,028.262 7	0.1863	0.5046	8,188.598 5

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	10.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	44.2575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	382.6191	4.3410	421.7605	0.0000		57.9599	57.9599		57.9579	57.9579	5,149.8155	2,737.8707	7,887.6862	0.0525	0.5046	8,045.2110
Landscaping	2.5647	0.9893	85.7547	4.5400e-003		0.4772	0.4772		0.4772	0.4772	0.0000	140.5765	140.5765	0.1339	0.0000	143.3875
Total	**439.9144**	**5.3304**	**507.5152**	**4.5400e-003**		**58.4371**	**58.4371**		**58.4351**	**58.4351**	**5,149.8155**	**2,878.4472**	**8,028.2627**	**0.1863**	**0.5046**	**8,188.5985**

6.2 Area by SubCategory

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	10.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	44.2575					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	382.6191	4.3410	421.7605	0.0000		57.9599	57.9599		57.9579	57.9579	5,149.8155	2,737.8707	7,887.6862	0.0525	0.5046	8,045.2110
Landscaping	2.5647	0.9893	85.7547	4.5400e-003		0.4772	0.4772		0.4772	0.4772	0.0000	140.5765	140.5765	0.1339	0.0000	143.3875
Total	**439.9144**	**5.3304**	**507.5152**	**4.5400e-003**		**58.4371**	**58.4371**		**58.4351**	**58.4351**	**5,149.8155**	**2,878.4472**	**8,028.2627**	**0.1863**	**0.5046**	**8,188.5985**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	634.9173	15.8387	0.3782	1,084.7822
Unmitigated	634.9173	15.8400	0.3785	1,084.9019

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	58.3129 / 36.7625	76.3384	1.9027	0.0455	130.3919
General Office Building	41.0743 / 25.1746	53.4429	1.3402	0.0320	91.5156
Single Family Housing	353.526 / 222.875	462.8069	11.5355	0.2757	790.5100
Strip Mall	32.5327 / 19.9394	42.3292	1.0615	0.0254	72.4844
Total		**634.9173**	**15.8400**	**0.3785**	**1,084.9019**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	58.3129 / 36.7625	76.3384	1.9026	0.0454	130.3775
General Office Building	41.0743 / 25.1746	53.4429	1.3401	0.0320	91.5055
Single Family Housing	353.526 / 222.875	462.8069	11.5346	0.2755	790.4228
Strip Mall	32.5327 / 19.9394	42.3292	1.0614	0.0254	72.4764
Total		**634.9173**	**15.8387**	**0.3782**	**1,084.7822**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	1,512.315 2	89.3753	0.0000	3,389.195 7
Mitigated	1,134.236 4	67.0315	0.0000	2,541.896 8

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	411.7	83.5714	4.9389	0.0000	187.2889
General Office Building	214.92	43.6268	2.5783	0.0000	97.7705
Single Family Housing	6362.38	1,291.505 6	76.3258	0.0000	2,894.347 4
Strip Mall	461.16	93.6113	5.5323	0.0000	209.7890
Total		**1,512.315 2**	**89.3753**	**0.0000**	**3,389.195 7**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	308.775	62.6785	3.7042	0.0000	140.4666
General Office Building	161.19	32.7201	1.9337	0.0000	73.3279
Single Family Housing	4771.78	968.6292	57.2444	0.0000	2,170.760 5
Strip Mall	345.87	70.2085	4.1492	0.0000	157.3417
Total		**1,134.236 4**	**67.0315**	**0.0000**	**2,541.896 8**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

7773 Los Osos - Proposed LOCP Net Increase 2035

San Luis Obispo County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	115.10	1000sqft	2.64	115,100.00	0
Racquet Club	20.00	1000sqft	0.46	20,000.00	0
Apartments Low Rise	800.00	Dwelling Unit	50.00	800,000.00	2288
Single Family Housing	1,061.00	Dwelling Unit	344.48	1,909,800.00	3034
Strip Mall	228.90	1000sqft	5.25	228,900.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.2	**Precipitation Freq (Days)**	44
Climate Zone	4			**Operational Year**	2035
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	287.06	**CH4 Intensity (lb/MWhr)**	0.013	**N2O Intensity (lb/MWhr)**	0.003

1.3 User Entered Comments & Non-Default Data

Project Characteristics - RPS 2030 50% required
CalEEMod accounts for 14.1%
Additional 35.9% reduction applied
(287.06, 0.013, 0.003)

Land Use - Proposed LOCP net increase over existing land uses

Construction Phase - Construction calculated seperately

Vehicle Trips - TIA
2035 trip length = 5.20 miles

Woodstoves - No woodstoves
Fireplaces - Statewide average (35%/55%/10%)

Area Coating - SLOAPCD Rule 433

Energy Use - 2013 Title 24

Water And Wastewater - CalGreen 20% decrease in indoor water use

Mobile Land Use Mitigation -

Area Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	150
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	150
tblConstructionPhase	NumDays	7,750.00	1.00
tblEnergyUse	T24E	236.91	181.71
tblEnergyUse	T24E	7.46	5.83
tblEnergyUse	T24E	1.81	1.42
tblEnergyUse	T24E	368.61	234.44
tblEnergyUse	T24E	3.37	2.64
tblEnergyUse	T24NG	8,283.47	7,968.70
tblEnergyUse	T24NG	17.16	14.28
tblEnergyUse	T24NG	20.74	17.26

tblEnergyUse	T24NG	29,406.10	27,494.70
tblEnergyUse	T24NG	2.49	2.07
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceDayYear	0.00	82.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceHourDay	0.00	3.00
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	FireplaceWoodMass	0.00	3,019.20
tblFireplaces	NumberGas	0.00	440.00
tblFireplaces	NumberGas	0.00	584.00
tblFireplaces	NumberNoFireplace	0.00	80.00
tblFireplaces	NumberNoFireplace	0.00	106.00
tblFireplaces	NumberWood	0.00	280.00
tblFireplaces	NumberWood	0.00	371.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.013
tblProjectCharacteristics	CO2IntensityFactor	641.35	287.06
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.003
tblProjectCharacteristics	OperationalYear	2014	2035
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CC_TL	5.00	0.00
tblVehicleTrips	CC_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CNW_TL	5.00	0.00
tblVehicleTrips	CNW_TL	5.00	5.20
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	CW_TL	13.00	0.00
tblVehicleTrips	CW_TL	13.00	5.20
tblVehicleTrips	HO_TL	5.00	5.20

tblVehicleTrips	HO_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HS_TL	5.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	HW_TL	13.00	5.20
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	WD_TR	6.59	6.34
tblVehicleTrips	WD_TR	11.01	19.29
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	9.57	8.19
tblVehicleTrips	WD_TR	44.32	42.92
tblWater	IndoorWaterUseRate	52,123,220.50	41,698,576.40
tblWater	IndoorWaterUseRate	20,457,154.39	16,365,723.51
tblWater	IndoorWaterUseRate	1,182,862.88	946,290.30
tblWater	IndoorWaterUseRate	69,128,421.18	55,302,736.94
tblWater	IndoorWaterUseRate	16,955,200.17	13,564,160.14
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveDayYear	60.00	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00
tblWoodstoves	WoodstoveWoodMass	2,016.50	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	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
Year	tons/yr										MT/yr					
2017	5.1500e-003	0.0262	0.0561	9.0000e-005	5.7600e-003	1.0500e-003	6.8100e-003	1.5400e-003	9.9000e-004	2.5300e-003	0.0000	7.3991	7.3991	5.5000e-004	0.0000	7.4106
Total	**5.1500e-003**	**0.0262**	**0.0561**	**9.0000e-005**	**5.7600e-003**	**1.0500e-003**	**6.8100e-003**	**1.5400e-003**	**9.9000e-004**	**2.5300e-003**	**0.0000**	**7.3991**	**7.3991**	**5.5000e-004**	**0.0000**	**7.4106**

Mitigated Construction

	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
Year	tons/yr										MT/yr					
2017	5.1500e-003	0.0262	0.0561	9.0000e-005	5.7600e-003	1.0500e-003	6.8100e-003	1.5400e-003	9.9000e-004	2.5300e-003	0.0000	7.3991	7.3991	5.5000e-004	0.0000	7.4106
Total	**5.1500e-003**	**0.0262**	**0.0561**	**9.0000e-005**	**5.7600e-003**	**1.0500e-003**	**6.8100e-003**	**1.5400e-003**	**9.9000e-004**	**2.5300e-003**	**0.0000**	**7.3991**	**7.3991**	**5.5000e-004**	**0.0000**	**7.4106**

	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**	**N20**	**CO2e**
Percent Reduction	**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**	**0.00**

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	128.1629	1.5689	149.3760	1.3400e-003		17.1984	17.1984		17.1978	17.1978	1,515.6103	847.9468	2,363.5570	0.0549	0.1485	2,410.7498
Energy	0.2501	2.1449	0.9656	0.0136		0.1728	0.1728		0.1728	0.1728	0.0000	4,431.6846	4,431.6846	0.1360	0.0658	4,454.9474
Mobile	8.1791	12.5208	63.5307	0.1980	13.5129	0.2555	13.7684	3.6214	0.2359	3.8573	0.0000	12,966.0258	12,966.0258	0.3373	0.0000	12,973.1088
Waste						0.0000	0.0000		0.0000	0.0000	420.8673	0.0000	420.8673	24.8725	0.0000	943.1906
Water						0.0000	0.0000		0.0000	0.0000	40.5696	135.7138	176.2834	4.1730	0.0998	294.8575
Total	**136.5921**	**16.2346**	**213.8724**	**0.2130**	**13.5129**	**17.6267**	**31.1396**	**3.6214**	**17.6065**	**21.2279**	**1,977.0471**	**18,381.3708**	**20,358.4179**	**29.5738**	**0.3142**	**21,076.8541**

2.2 Overall Operational

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	128.1629	1.5689	149.3760	1.3400e-003		17.1984	17.1984		17.1978	17.1978	1,515.6103	847.9468	2,363.5570	0.0549	0.1485	2,410.7498
Energy	0.2501	2.1449	0.9656	0.0136		0.1728	0.1728		0.1728	0.1728	0.0000	4,431.6846	4,431.6846	0.1360	0.0658	4,454.9474
Mobile	7.7369	10.4924	55.5724	0.1514	10.1317	0.2040	10.3357	2.7152	0.1884	2.9036	0.0000	9,907.2524	9,907.2524	0.2654	0.0000	9,912.8251
Waste						0.0000	0.0000		0.0000	0.0000	315.6504	0.0000	315.6504	18.6544	0.0000	707.3930
Water						0.0000	0.0000		0.0000	0.0000	40.5696	135.7138	176.2834	4.1727	0.0997	294.8260
Total	**136.1498**	**14.2063**	**205.9140**	**0.1664**	**10.1317**	**17.5752**	**27.7069**	**2.7152**	**17.5590**	**20.2742**	**1,871.8303**	**15,322.5974**	**17,194.4277**	**23.2834**	**0.3141**	**17,780.7413**

	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	N20	CO2e
Percent Reduction	**0.32**	**12.49**	**3.72**	**21.89**	**25.02**	**0.29**	**11.02**	**25.02**	**0.27**	**4.49**	**5.32**	**16.64**	**15.54**	**21.27**	**0.03**	**15.64**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Building Construction	Building Construction	1/1/2017	1/2/2017	5	1	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	9	1,076.00	259.00	0.00	13.00	5.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Building Construction - 2017

Unmitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Unmitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5500e-003	9.6300e-003	0.0178	2.0000e-005	5.8000e-004	1.3000e-004	7.0000e-004	1.7000e-004	1.2000e-004	2.8000e-004	0.0000	1.9573	1.9573	2.0000e-005	0.0000	1.9576
Worker	2.0600e-003	3.3500e-003	0.0293	6.0000e-005	5.1800e-003	4.0000e-005	5.2200e-003	1.3800e-003	4.0000e-005	1.4100e-003	0.0000	4.2444	4.2444	2.4000e-004	0.0000	4.2494
Total	**3.6100e-003**	**0.0130**	**0.0471**	**8.0000e-005**	**5.7600e-003**	**1.7000e-004**	**5.9200e-003**	**1.5500e-003**	**1.6000e-004**	**1.6900e-003**	**0.0000**	**6.2017**	**6.2017**	**2.6000e-004**	**0.0000**	**6.2070**

3.2 Building Construction - 2017

Mitigated Construction On-Site

	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					
Off-Road	1.5500e-003	0.0132	9.0600e-003	1.0000e-005		8.9000e-004	8.9000e-004		8.4000e-004	8.4000e-004	0.0000	1.1974	1.1974	2.9000e-004	0.0000	1.2036
Total	**1.5500e-003**	**0.0132**	**9.0600e-003**	**1.0000e-005**		**8.9000e-004**	**8.9000e-004**		**8.4000e-004**	**8.4000e-004**	**0.0000**	**1.1974**	**1.1974**	**2.9000e-004**	**0.0000**	**1.2036**

Mitigated Construction Off-Site

	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					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.5500e-003	9.6300e-003	0.0178	2.0000e-005	5.8000e-004	1.3000e-004	7.0000e-004	1.7000e-004	1.2000e-004	2.8000e-004	0.0000	1.9573	1.9573	2.0000e-005	0.0000	1.9576
Worker	2.0600e-003	3.3500e-003	0.0293	6.0000e-005	5.1800e-003	4.0000e-005	5.2200e-003	1.3800e-003	4.0000e-005	1.4100e-003	0.0000	4.2444	4.2444	2.4000e-004	0.0000	4.2494
Total	**3.6100e-003**	**0.0130**	**0.0471**	**8.0000e-005**	**5.7600e-003**	**1.7000e-004**	**5.9200e-003**	**1.5500e-003**	**1.6000e-004**	**1.6900e-003**	**0.0000**	**6.2017**	**6.2017**	**2.6000e-004**	**0.0000**	**6.2070**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

	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	7.7369	10.4924	55.5724	0.1514	10.1317	0.2040	10.3357	2.7152	0.1884	2.9036	0.0000	9,907.2524	9,907.2524	0.2654	0.0000	9,912.8251
Unmitigated	8.1791	12.5208	63.5307	0.1980	13.5129	0.2555	13.7684	3.6214	0.2359	3.8573	0.0000	12,966.0258	12,966.0258	0.3373	0.0000	12,973.1088

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	5,072.00	5,728.00	4856.00	8,631,448	6,471,701
General Office Building	2,220.28	272.79	112.80	2,541,609	1,905,652
Racquet Club	0.00	0.00	0.00		
Single Family Housing	8,689.59	10,694.88	9304.97	15,236,101	11,423,749
Strip Mall	9,824.39	9,622.96	4676.43	9,481,488	7,109,045
Total	25,806.26	26,318.62	18,950.20	35,890,646	26,910,147

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	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	Primary	Diverted	Pass-by
Apartments Low Rise	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
General Office Building	5.20	5.20	5.20	33.00	48.00	19.00	77	19	4
Racquet Club	0.00	0.00	0.00	11.50	69.50	19.00	52	39	9
Single Family Housing	5.20	5.20	5.20	35.80	21.00	43.20	86	11	3
Strip Mall	5.20	5.20	5.20	16.60	64.40	19.00	45	40	15

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.457495	0.042122	0.213987	0.146817	0.067454	0.009853	0.017888	0.026015	0.002466	0.001424	0.009078	0.000704	0.004697

4.4 Fleet Mix

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	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						0.0000	0.0000		0.0000	0.0000	0.0000	1,956.482 1	1,956.482 1	0.0886	0.0205	1,964.681 3
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,956.482 1	1,956.482 1	0.0886	0.0205	1,964.681 3
NaturalGas Mitigated	0.2501	2.1449	0.9656	0.0136		0.1728	0.1728		0.1728	0.1728	0.0000	2,475.202 5	2,475.202 5	0.0474	0.0454	2,490.266 1
NaturalGas Unmitigated	0.2501	2.1449	0.9656	0.0136		0.1728	0.1728		0.1728	0.1728	0.0000	2,475.202 5	2,475.202 5	0.0474	0.0454	2,490.266 1

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/yr	tons/yr										MT/yr					
Racquet Club	478600	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.5399	25.5399	4.9000e-004	4.7000e-004	25.6954
Single Family Housing	3.54072e+007	0.1909	1.6315	0.6943	0.0104		0.1319	0.1319		0.1319	0.1319	0.0000	1,889.4644	1,889.4644	0.0362	0.0346	1,900.9633
Strip Mall	473823	2.5500e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2850	25.2850	4.8000e-004	4.6000e-004	25.4389
Apartments Low Rise	8.37336e+006	0.0452	0.3858	0.1642	2.4600e-003		0.0312	0.0312		0.0312	0.0312	0.0000	446.8344	446.8344	8.5600e-003	8.1900e-003	449.5537
General Office Building	1.65053e+006	8.9000e-003	0.0809	0.0680	4.9000e-004		6.1500e-003	6.1500e-003		6.1500e-003	6.1500e-003	0.0000	88.0788	88.0788	1.6900e-003	1.6100e-003	88.6148
Total		**0.2501**	**2.1449**	**0.9656**	**0.0136**		**0.1728**	**0.1728**		**0.1728**	**0.1728**	**0.0000**	**2,475.2025**	**2,475.2025**	**0.0474**	**0.0454**	**2,490.2661**

5.2 Energy by Land Use - NaturalGas

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	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Racquet Club	478600	2.5800e-003	0.0235	0.0197	1.4000e-004		1.7800e-003	1.7800e-003		1.7800e-003	1.7800e-003	0.0000	25.5399	25.5399	4.9000e-004	4.7000e-004	25.6954
Single Family Housing	3.54072e+007	0.1909	1.6315	0.6943	0.0104		0.1319	0.1319		0.1319	0.1319	0.0000	1,889.4644	1,889.4644	0.0362	0.0346	1,900.9633
Strip Mall	473823	2.5500e-003	0.0232	0.0195	1.4000e-004		1.7700e-003	1.7700e-003		1.7700e-003	1.7700e-003	0.0000	25.2850	25.2850	4.8000e-004	4.6000e-004	25.4389
Apartments Low Rise	8.37336e+006	0.0452	0.3858	0.1642	2.4600e-003		0.0312	0.0312		0.0312	0.0312	0.0000	446.8344	446.8344	8.5600e-003	8.1900e-003	449.5537
General Office Building	1.65053e+006	8.9000e-003	0.0809	0.0680	4.9000e-004		6.1500e-003	6.1500e-003		6.1500e-003	6.1500e-003	0.0000	88.0788	88.0788	1.6900e-003	1.6100e-003	88.6148
Total		**0.2501**	**2.1449**	**0.9656**	**0.0136**		**0.1728**	**0.1728**		**0.1728**	**0.1728**	**0.0000**	**2,475.2025**	**2,475.2025**	**0.0474**	**0.0454**	**2,490.2661**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	2.90121e +006	377.7612	0.0171	3.9500e-003	379.3443
General Office Building	2.08101e +006	270.9644	0.0123	2.8300e-003	272.0999
Racquet Club	172800	22.5000	1.0200e-003	2.4000e-004	22.5943
Single Family Housing	7.36203e +006	958.5975	0.0434	0.0100	962.6148
Strip Mall	2.50874e +006	326.6591	0.0148	3.4100e-003	328.0281
Total		**1,956.4821**	**0.0886**	**0.0205**	**1,964.6813**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	2.90121e +006	377.7612	0.0171	3.9500e-003	379.3443
General Office Building	2.08101e +006	270.9644	0.0123	2.8300e-003	272.0999
Racquet Club	172800	22.5000	1.0200e-003	2.4000e-004	22.5943
Single Family Housing	7.36203e +006	958.5975	0.0434	0.0100	962.6148
Strip Mall	2.50874e +006	326.6591	0.0148	3.4100e-003	328.0281
Total		**1,956.4821**	**0.0886**	**0.0205**	**1,964.6813**

6.0 Area Detail

6.1 Mitigation Measures Area

	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	128.1629	1.5689	149.3760	1.3400e-003		17.1984	17.1984		17.1978	17.1978	1,515.6103	847.9468	2,363.5570	0.0549	0.1485	2,410.7498
Unmitigated	128.1629	1.5689	149.3760	1.3400e-003		17.1984	17.1984		17.1978	17.1978	1,515.6103	847.9468	2,363.5570	0.0549	0.1485	2,410.7498

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	2.7965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	12.0047					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	112.6063	1.2776	124.1257	0.0000		17.0579	17.0579		17.0573	17.0573	1,515.6103	806.5534	2,322.1637	0.0155	0.1485	2,368.5286
Landscaping	0.7554	0.2913	25.2503	1.3400e-003		0.1405	0.1405		0.1405	0.1405	0.0000	41.3934	41.3934	0.0394	0.0000	42.2212
Total	**128.1629**	**1.5689**	**149.3760**	**1.3400e-003**		**17.1984**	**17.1984**		**17.1978**	**17.1978**	**1,515.6103**	**847.9468**	**2,363.5570**	**0.0549**	**0.1485**	**2,410.7498**

6.2 Area by SubCategory

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	2.7965					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	12.0047					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	112.6063	1.2776	124.1257	0.0000		17.0579	17.0579		17.0573	17.0573	1,515.6103	806.5534	2,322.1637	0.0155	0.1485	2,368.5286
Landscaping	0.7554	0.2913	25.2503	1.3400e-003		0.1405	0.1405		0.1405	0.1405	0.0000	41.3934	41.3934	0.0394	0.0000	42.2212
Total	**128.1629**	**1.5689**	**149.3760**	**1.3400e-003**		**17.1984**	**17.1984**		**17.1978**	**17.1978**	**1,515.6103**	**847.9468**	**2,363.5570**	**0.0549**	**0.1485**	**2,410.7498**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	176.2834	4.1727	0.0997	294.8260
Unmitigated	176.2834	4.1730	0.0998	294.8575

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	41.6986 / 32.8603	57.5834	1.3608	0.0326	96.2488
General Office Building	16.3657 / 12.5383	22.4367	0.5341	0.0128	37.6113
Racquet Club	0.94629 / 0.72498	1.2973	0.0309	7.4000e-004	2.1747
Single Family Housing	55.3027 / 43.581	76.3700	1.8047	0.0432	127.6499
Strip Mall	13.5642 / 10.3919	18.5959	0.4426	0.0106	31.1728
Total		**176.2834**	**4.1730**	**0.0998**	**294.8575**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	41.6986 / 32.8603	57.5834	1.3607	0.0325	96.2385
General Office Building	16.3657 / 12.5383	22.4367	0.5340	0.0128	37.6072
Racquet Club	0.94629 / 0.72498	1.2973	0.0309	7.4000e-004	2.1745
Single Family Housing	55.3027 / 43.581	76.3700	1.8046	0.0431	127.6363
Strip Mall	13.5642 / 10.3919	18.5959	0.4426	0.0106	31.1695
Total		**176.2834**	**4.1727**	**0.0997**	**294.8260**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Unmitigated	420.8673	24.8725	0.0000	943.1906
Mitigated	315.6504	18.6544	0.0000	707.3930

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	368	74.7007	4.4147	0.0000	167.4090
General Office Building	107.04	21.7282	1.2841	0.0000	48.6942
Racquet Club	114	23.1410	1.3676	0.0000	51.8604
Single Family Housing	1243.94	252.5086	14.9228	0.0000	565.8880
Strip Mall	240.35	48.7889	2.8833	0.0000	109.3390
Total		**420.8673**	**24.8725**	**0.0000**	**943.1906**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	276	56.0255	3.3110	0.0000	125.5568
General Office Building	80.28	16.2961	0.9631	0.0000	36.5206
Racquet Club	85.5	17.3557	1.0257	0.0000	38.8953
Single Family Housing	932.955	189.3814	11.1921	0.0000	424.4160
Strip Mall	180.262	36.5917	2.1625	0.0000	82.0043
Total		**315.6504**	**18.6544**	**0.0000**	**707.3930**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

Appendix C

Coastal Hazards – Technical Report

Los Osos Sea Level Rise and Coastal Hazards Vulnerability Assessment

8/22/2017

Report Submitted to County of San Luis Obispo

By

Revell Coastal, LLC

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Surf. Sand. Sustainability.

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1. Background

1.1. Purpose

The development of this Sea Level Rise Technical Report (Report) is to support the Los Osos community in addressing the potential threat of climate-accelerated coastal hazards focused primarily on sea level rise. This Report provides a science-based assessment using a compilation of existing data and information provided by the County of San Luis Obispo. This Report serves a two-fold purpose: 1) To provide a community-wide vulnerability assessment for current infrastructure and existing land uses and 2) To provide specific vulnerability analysis on those parcels, whose land uses are proposed to be amended (i.e. changed) as part of the Los Osos Community Plan (LOCP). The results of this analysis will be utilized for the Coastal Hazards Section of the LOCP Draft Environmental Impact Report (DEIR). This information will assist the County and community stakeholders in making more informed decisions regarding land use, density, and development standards from the project level (e.g., coastal development permits, land use permits), potential amendments to the countywide Local Coastal Program (LCP), as well as future build out of the LOCP. In addition, this report is intended to support the LCP amendment to be submitted to the Coastal Commission as part of the certification of the LOCP.

1.2. Planning Background

The LOCP functions as a General Plan and Local Coastal Plan guiding future development within the Los Osos community. The LOCP is part of the Estero Area Plan and located within the Estero Planning Area. The LOCP establishes a vision for the future of Los Osos and defines the nature of future development in the Los Osos planning area, and provides development standards that in many cases are site-specific. The LOCP is facilitated to a large extent by the recently approved sewer project, now under construction. The sewer project has been a prerequisite to growth in Los Osos, as the widespread use of septic systems twilights. The effects of the sewer project were examined in a separate certified EIR. At the same time, the County is preparing a communitywide Habitat Conservation Plan (HCP), the permitting requirements th will potentially affect the nature of future of development in Los Osos.

Los Osos is primarily residential in nature, and there are few head-of-household employment opportunities within the community. Population growth has been relatively flat since the early 1990s, primarily due to the moratorium on growth pending resolution of the long-standing need to provide improved community wastewater treatment service. With the recent approval and construction of the new wastewater facility, this constraint to future development within the community has been removed, and the LOCP will serve as an important tool in guiding future growth. In order to allow new development on undeveloped parcels within the Los Osos Wastewater Project service area, the County is required to amend the Estero Area Plan to incorporate a sustainable buildout target that demonstrates there is sufficient water available to support such development without imposing negative impacts on wetlands and habitats (condition number 86 of CDP A-3-SLO-09-055/069).

1.3. San Luis Obispo County Local Coastal Program

The coastal zone in San Luis Obispo County spans 96 miles of coastline. Throughout much of coastal California, the coastal zone boundary extends inland 1,000-yards, while in San Luis Obispo County the coastal zone extends further inland in several areas because of important habitat, recreational, and

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agricultural resources. Those areas include the lands surrounding Nipomo Dunes, Hearst Ranch and other north coast areas, and the Morro Bay watershed. The beach, sandspit, and extensive wetlands of Morro Bay form a unique setting as well as a laboratory for wetland habitat study.

The coastal zone boundary encompasses portions of four of the Land Use Element Planning Areas: North Coast, Estero, San Luis Bay and South County. The majority of the North Coast and Estero Planning Areas are within the coastal zone while only portions lying west of Highway 1 are included in the San Luis Bay and South County Planning Areas.

Estero Planning Area (Los Osos) – Los Osos is a small-scale residential community consisting of the identified neighborhoods of Los Osos, Baywood Park and Cuesta-by-the-Sea, situated around the southern tidelands of Morro Bay. The community is bordered on the north by tidelands, with low sand dunes on the west, forested and open space slopes on the south, and agricultural land on the east.

1.4. Climate Adaptation and Sea Level Rise

Projections of global climate change and sea level rise have been garnering research and attention for decades, but global efforts to mitigate climate changes by reducing greenhouse gas emissions have largely failed. In the meantime, the concentration of atmospheric greenhouse gases has continued to rise at an increasing rate. Even if we are somehow able to stop producing greenhouse gases tomorrow, the high concentration of carbon dioxide already in the atmosphere from historic emissions — since we began burning fossil fuels for energy in the 19th century — will cause the climate to continue to change for the next several thousand years.

Climate change mitigation (i.e. reduction of existing and future emissions) and adaptation (i.e. adapting to a changing climate as a result of climate change) are related. Without any mitigation, climate change impacts — higher temperatures, higher sea levels, changes in water availability — will be worse. Meanwhile, adaptation will be more difficult and more expensive, and more people are likely to suffer. Some policies or planning actions can support both goals. For example, restoring tidal wetlands both sequesters carbon (mitigation) and builds a buffer against sea-level rise (adaptation). Some actions, however, can pit these goals against each other. Desalination of seawater, for example, is an adaptation strategy for drought that is energy intensive, producing significant levels of greenhouse gas emissions. In selecting mitigation and adaptation strategies, it is important to consider trade-offs, secondary impacts, and try to achieve both, if possible.

Sea-level rise occurs because of two natural processes that have been occurring since the last ice age ended approximately 18,000 years ago. The first is the thermal expansion of the oceans, which increase in volume as they absorb atmospheric and land-generated heat. The second is the melting of land-based ice, such as glaciers and ice sheets that occupy vast areas of Greenland and Antarctica.

In the past 10 to 15 years, the rate of global sea-level rise has increased by about 50 percent and is now averaging 3.2 millimeters per year. Human-induced global warming is a major contributor to this accelerated rise. In California, projections vary widely, but recent research has concluded we are likely to experience a sea-level rise of about 16 inches by 2050 and about 55 inches by 2100 — and much

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more after that.[1] These estimates are based on ranges that correspond to several global greenhouse gas emissions scenarios. In the highest-emission scenario, the range of estimated end-of-century sea-level rise is between 43 and 69 inches.[2]

1.5. Potential Climate Change Impacts for San Luis Obispo and Morro Bay

According to ClimateWise's 2014 Report titled*: Integrated Climate Change Adaptation Planning in San Luis Obispo County*, the County will experience the following impacts from climate change:

- Hotter, drier, and longer summers
- More severe storms in winter/spring
- Accelerating sea-level rise
- Loss of coastal wetlands, marshes, and estuaries
- Declines in water availability and water quality for streams and rivers
- Less groundwater recharge
- Loss of native species and ecosystems
- Increase in wildfires by 200-300 percent

Fisheries, harbors and coastal tourism are important economic drivers for the county that may be threatened by climate change. Climate change is expected to impact fish populations directly through warming ocean waters, increasing ocean acidity, changing currents and nutrient availability, and inundation of critical nursery habitat (coastal wetlands). Ocean acidification is expected to also severely impact shellfish fisheries and aquaculture.

Coastal storms can cause coastal flooding of low-lying areas – inundating economically important infrastructure such as the harbors of Morro Bay and Port San Luis. The erosive impact of storms could also cause severe damage to coastal developments and facilities. Both of these coastal hazards are expected to become greater threats to coastal areas as sea level rises. Beach erosion will increase in many areas and may require more aggressive adaptation strategies. Other coastal areas may see more sediment, which may support habitat evolution and/or create navigation issues. Tourism infrastructure, such as roads, buildings, harbors, and piers could be damaged by higher sea levels and coastal storms. Tourism requires functional infrastructure, services, and establishments, such as coastal roads, hotels, restaurants, and guided tours, to support the industry (ClimateWise, Page 29). The county's coastal tourism relies on clean and beautiful beaches and wetlands, scenic vistas and drives, and birds, wildlife and fish for recreation, and consideration of future impacts and community vision need to be balanced to maintain a desirable quality of life.

[1] National Research Council of the National Academies. 2012. Sea Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future.

[2] Coastal and Ocean Working Group of the California Climate Action Team (CO-CAT). 2013. State of California Sea-Level Rise Guidance Document, March 2013 Update.

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2. Physical Setting

2.1. Introduction

Los Osos is situated in San Luis Obispo County along the south-central Coast of California inside the Morro Bay Estuary. The Morro Bay Estuary is formed by a large sandspit made of substantial sand dunes connecting with the engineered breakwater and jettied entrance to Morro Bay.

Sediment for the sandy beaches and dunes comes primarily from the coastal watersheds, brought to the coast during flood events at lower stands of sea level and then moved onto and along beaches by waves and currents. Dunes were built primarily from wind transport. Sediment transport on the outer open coast is primarily from north to south and driven by the dominant wind and wave directions from the northwest. Inside the Morro Bay, tides dominate the coastal processes along the Los Osos shoreline.

The Morro Bay watershed is a network of streams and creeks which drains rainfall and other freshwater from 48,000 acres of land into Morro Bay. The Bay itself is an estuary, a place where freshwater from the land mixes with the ocean's salty tides. The close connection between the watershed and the estuary means that what happens on land greatly impacts the health of the estuary. Morro Bay is one of the largest and least disturbed estuaries remaining in central and southern California. Its sheltered waters, salt marshes, and eelgrass beds provide rare and important habitats for diverse communities of fish, birds, shellfish, and other life. The estuary contributes significantly to the Los Osos economy and way of life, supporting urban centers, commercial and recreational fishing, boating, and ecotourism activities such as kayaking, bird watching, and other outdoor recreation.

2.2. Geology and Geomorphology

Los Osos is developed mainly over old aeolian deposits from the late to middle Pleistocene. The low-lying areas around the community are largely composed of very young and young surface deposits, except for Morro Rock, which guards the entrance to Morro Bay harbor and the inlet to the estuary. Morro Rock is a large 23-million-year-old volcanic plug located just seaward of the barrier beach bar at the mouth and attached to the mainland by artificial fill. Morro Rock, is a more or less circular intrusive plug of Tertiary Age that is part of a 20-mile long, primarily straight line of 14 intrusive plugs of varying sizes throughout San Luis Obispo County. A 10-mile long Holocene sand bar and Morro Dune Complex closes the estuary off the narrow, northwest trending San Luis Valley from the open ocean to form Morro Bay.

The Morro Dune Complex is made of Holocene aeolian deposits, composed of well-sorted windblown sand. These dunes along the western edge of Morro Bay have been created during lower sea level in the Holocene (greater than 12,000 years ago) when fluvial stream inputs transported massive amounts of material to the coast. Wind transport formed the dunes over time and continues to be kept in balance by the inputs of sand into the coastal system and the resulting sediment budget. Los Osos lies along the Los Osos Fault Zone, a very complex set of fault segments of the Late Quaternary. This fault zone is bounded by the San Andreas Fault to the east and offshore into the San Gregorio-San Simeon-Hosgri Fault. Although these fault zones have not been active recently, the tectonic movements along the Central California coast do generate varying levels of tectonic uplift and subsidence.

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The net southward littoral transport found along much of the California coast does not occur as substantially within Morro Bay. Instead, the sand primarily moves on-and offshore-with a reversing longshore component driven by changes in wave direction. This sand transport pattern along the open ocean produces a separate littoral cell[3] within Estero Bay, even though there is no submarine canyon in the area. The primary sand sinks for this cell appear to be the sand spit south of Morro Rock and the entrance to Morro Bay itself.[4] The sources appear to be onshore transport in addition to sediment inputs from local creeks, assumed to be limited quantity given the relatively small watershed (172 km^2).

2.3. Coastal Processes

The coastal processes of waves, ocean currents, and tides shape the coastline in Morro Bay and the Los Osos Community.

Tides - The tides in Morro Bay are mixed, predominantly semi-diurnal and are composed of two low and two high water levels of unequal heights per 24.8-hour tidal cycle. The nearest tide gage recorder has been in operation at Port San Luis (Station ID# 9412110) since 1933. Typically, the largest tide ranges in a year occur in late December to early January. Maximum tide elevations are due to astronomical tide, wind surge, wave set-up, density anomalies, long waves (including tsunamis), climate related El Niño, and Pacific Decadal Oscillation events. A 100-year tide level is 7.67 feet North American Vertical Datum (NAVD).

Waves – Waves that approach the Morro Bay estuary are characterized by three dominant modes. The northern hemisphere waves typically are generated by cyclones in the north Pacific during the winter and bring the largest waves (up to 25 feet). The southern hemisphere waves are generated in the Southern Ocean during summer months and produce smaller waves with longer wave periods (> 20 seconds). Local wind waves are generated throughout the year either as a result of storms coming ashore during the winter, or strong sea breezes in the spring and summer.[5] Strong sea breezes generating local wind waves will be main source of wave impacts inside the Morro Bay estuary, however given the relatively small 3-mile diameter of the bay (aka potential fetch, wind wave generation is not likely to be a driving coastal process (<3 feet).

2.4. Tidal Inundation

The tides in Morro Bay are mixed; semi-diurnal with a mean range of tide (MN) of 3.58 feet NAVD[6] and a low-low tide that follows a high-high tide. Mean Higher High Water (MHHW) is referenced to 5.25 feet NAVD and Mean Lower-Low Water (MLLW) is referenced to -0.08 feet NAVD. Tidal currents in Morro Bay contain both ebb and flood velocities, contributing to sediment deposition and erosion around the bay.

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[3] A littoral cell is a coastal compartment that contains a complete cycle of sedimentation including sources, transport paths, and sinks.
[4] Dingler et. Al. 1982.
[5] Wingfield and Storlazzi 2007.
[6] The North American Vertical Datum is the vertical control datum of orthometric height established for vertical control surveying in the United States of America based upon the General Adjustment of the North American Datum.

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2.5. Combined Coastal and Creek Flooding

FEMA maps delineate coastal and creek flood hazards as part of the National Flood Insurance Program. This program requires very specific technical analysis of watershed characteristics, topography, channel morphology, hydrology, and hydraulic modeling to map the extent of existing watershed–related, and wave run-up–related flood hazards. These regulatory maps, representing existing 100-year and 500-year flood hazards (1 percent annual chance of flooding and 0.2 percent, respectively) are known as FIRMs (Flood Insurance Rate Maps) and determine the flood extents and flood elevations across the landscape. The existing FIRM panels for Los Osos are effective 11/16/2012 and include Panel #06079C1028G, #06079C1029G, #06079C1033G, #06079C1040G, #06079C1045G. Figure 1 – FEMA Existing hazards, illustrates the existing FEMA 100-year and 500-year flood hazards.

2.6. Seawater Intrusion

Rates of seawater intrusion are affected primarily by water levels in the ocean and groundwater which form hydraulic gradients and aquifer permeability. The rate of intrusion is typically not uniform over time, but varies seasonally according to groundwater pumping cycles and is accelerated during drought periods. Seawater intrusion is not uniform within the aquifer zones, but may follow preferential pathways along discrete sand and gravel layers being tapped by pumping wells.

According to the Los Osos Community Services District's 2014 Seawater Intrusion Monitoring Report by Cleath-Harris Geologists, Inc., the lower aquifer of the Los Osos Groundwater Basin (Basin) is currently experiencing seawater (i.e. saltwater) intrusion. The position of the seawater front was mapped in April 2010 after water quality data was collected from a series of 15 wells. The rate of seawater intrusion is about 200 to 250 feet per year.

With more water being drawn from the basin than going in, over-pumping in the area's lower aquifer is causing ocean intrusion — a situation only worsened by droughts. With the recent droughts, the rate of seawater intrusion could render the basin's lower aquifer unusable in five years, according to a recently updated plan to sustain the community's only water resource[7]. Temperature increases and length of droughts due to climate change have been projected and may further exacerbate salt water intrusion.

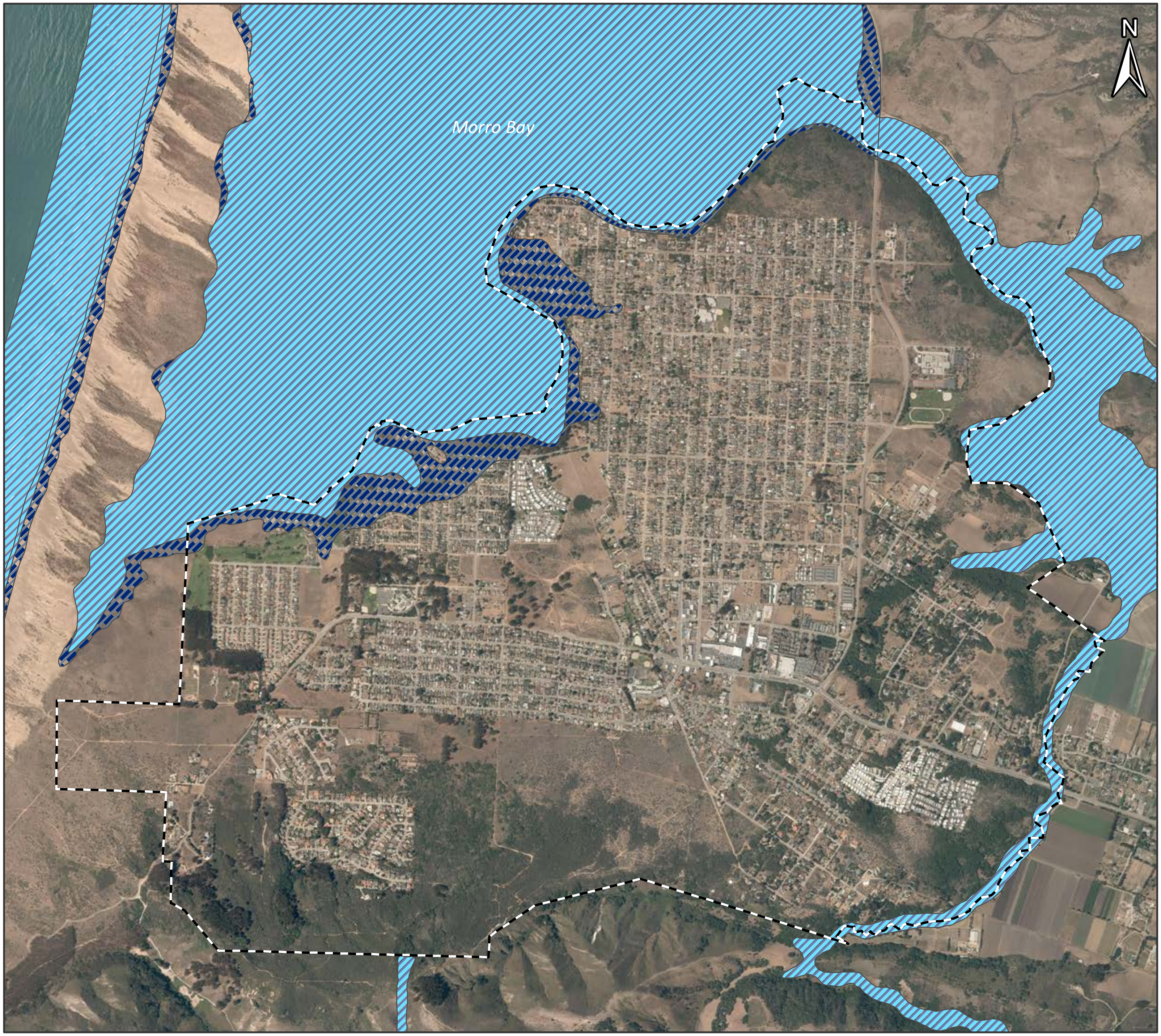
2.7. Human Alterations to the Shoreline

The shoreline along Los Osos Community has been slightly altered by various human activities which have changed the natural functioning of the ecosystem. There are two primary forms of alterations, which affect the overall coastline within Morro Bay: harbor construction and coastal armoring.

Morro Bay Harbor - In 1933, a man-made causeway was built closing the north entrance of Morro Bay connecting the Rock with the mainland. The south channel was dredged and the Army Corps of Engineers constructed a breakwater protecting the navigational channel entrance during World War II. The current Embarcadero area for the City of Morro Bay was formed from the dredged material. Periodic dredging is necessary to maintain channel depth and reduce navigation hazards.

[7] Cleath-Harris Geologists, Inc 2014.

Figure 1: Existing FEMA Flood Hazard Zones



Legend

Los Osos Community Boundary

Existing FEMA Flood Zone (2012)

100-YR

500-YR

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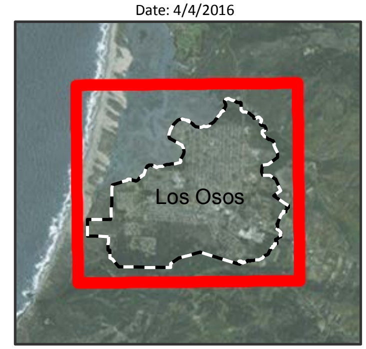
Date: 4/4/2016



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Coastal Armoring – The extent of coastal armoring is relatively sparse along the Los Osos Community waterfront since the back-bay is very shallow and largely protected from ocean waves and currents. Presently, there are five small craft piers extending into the marsh and a T-pier located at the boat launch area.

3. Vulnerabilities

3.1 Introduction

Vulnerabilities from the two dominant coastal hazards are caused by two main coastal processes: 1) tidal inundation and storm surges with minor wind waves, and 2) increase in both elevation and duration of tidal inundation. The stream flow contributions from Chorro Creek and Los Osos Creek also contribute to elevated flood hazards above oceanographic tides. For purposes of this analysis, and considering these local geologic, geomorphic and coastal process settings, two hazard zones were evaluated – **tidal inundation and coastal flooding related to storm events.**

In order to assess some of the community vulnerabilities in support of both the LOCP and the LCP update, the following sectors were evaluated:

- Land Use
- Wastewater
- Roads
- Coastal Access
- Stormwater

3.2 Vulnerability Assessment Methodology

For the vulnerability assessment, Revell Coastal analyzed the planning horizons of 2025, 2040, and 2100 using the high "worst case scenario." The worst-case scenario considered was identified in the National Research Council (NRC) 2012 Report titled, "Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future." Referencing Table 5-3 in the NRC Report, the projections for the San Francisco (Central Coast) region are a regional subsidence (-1.5mm/year) for areas south of Cape Mendocino. Tectonics in this region change at Cape Mendocino, to the north is the Juan de Fuca subduction zone and to the south is the San Andreas transform fault zone.

Using these planning horizons and the equation from B3 from the Appendix B of the CCC 2015 report combined with the findings from the NRC 2012 report for San Francisco - the following table of sea level rise elevations by planning horizon was created (Table 1).

Table 1. Estimated Sea Level Rise by Planning Horizon for Los Osos

Planning Horizon	Sea level Rise (inches)	Sea Level Rise (feet)
Existing conditions	0	0
2025	9.6	0.5
2040	17.6	1.5
2100	65.5	5.5

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3.2.1. Tidal Inundation

Tidal inundation levels were determined using the Port San Luis, California Tidal Gage (NOAA #9412110). As a conservative approach, a 100-year tide level (1 percent annual chance) was selected as the baseline to reference sea level rise elevations. This tide elevation was then escalated using results from the Table 1 above to raise the tidal elevation to each planning horizon. Results from this escalation are shown in Table 2 (100-year tidal inundation) and mapped for the Los Osos community (Figure 2A and 2B (zoom in) – Tidal Inundation Hazards).

Table 2. Results of the tidal inundation and FEMA flood elevation analyses

Horizon	SLR elevation (feet NAVD)	Hazard elevation (feet NAVD)
Coastal Flooding: FEMA 100-year		
2015	0	13
2025	0.5	13.5
2040	1.5	14.5
2100	5.5	18.5
Tidal Inundation – Port San Luis 100-yr tide		
2015	0	7.64
2025	0.5	8.44
2040	1.5	9.10
2100	5.5	13.14

3.2.2. Coastal Flooding

FEMA flood mapping includes consideration of storm surges, wind waves, and creek flooding from Chorro and Los Osos Creeks. After modeling these processes, the coastal bay storm base flood elevation was mapped by FEMA at a 13-foot (NAVD 88) elevation (FIRM map panel 06079C1029G effective 11/12/2012). Using a linear superposition method, the coastal bay storm effective base flood elevation was escalated using the results from Table 1. As per standard FEMA practices all elevations were rounded to nearest half foot. Results are shown in Table 2 (flooding – top) and mapped in Figure 3A and 3B (zoom in) - Coastal Flood Hazards.

3.2.3. Coastal Hazard Zones

The Coastal Hazard Zones were generated in GIS by reclassifying the 2011 Pacific Gas and Electric (PG&E) topographic LiDAR[8] using the planning horizon elevations for each hazard type found in Table 2. The raster was resampled to 10-meters and converted to a polygon layer for mapping and vulnerability analysis. Some smoothing and filling holes was needed to clean the polygon layer before analysis.

[8] Lidar (also written LIDAR, LiDAR or LADAR) is a surveying technology that measures distance by illuminating a target with a laser light. Although thought by some to be an acronym of Light Detection And Ranging, the term lidar was actually created as a portmanteau of "light" and "radar".

Figure 2A: Coastal Inundation Hazard Zones

Legend

Los Osos Community Boundary

Coastal Inundation Hazard Zones

Existing
2025 (6")
2040 (18")
2100 (66")

Coastal Inundation Hazard Zones were generated on 2011 LiDAR using SLR elevations relative to Port San Luis Tide Gauge 100-yr tide (7.6'). Elevations displayed in NAVD88 (feet).

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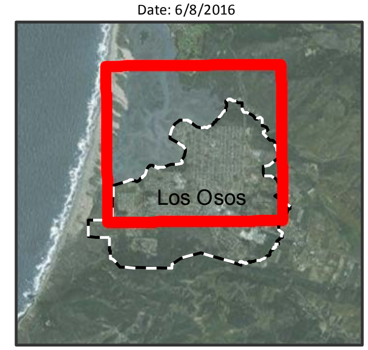

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Figure 2B: Coastal Flood Hazard Zones

Legend

Los Osos Community Boundary

Coastal Flood Hazard Zones

Existing
2025 (6")
2040 (18")
2100 (66")

Coastal Flooding Hazard Zones were generated on 2011 LiDAR using SLR elevations relative to FEMA 100-yr flood elevation (13'). Elevations displayed in NAVD88 (feet).

Date: 3/10/2017

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3.2.4. GIS Analyses

Once the Coastal Hazard Zones were generated for Coastal Flooding and Tidal inundation, they were then overlaid with the various sector data sets. ParcelQuest, a data provider for San Luis Obispo County, supplied parcel line work and assessor parcel information for Los Osos community. General Plan Land Use Designations were downloaded from the San Luis Obispo County GIS website (last edit date: 11/10/2015) and updated to reflect proposed changes by Revell Coastal using County provided digital maps to enable comparison between existing and proposed conditions. In GIS, the land use data was overlaid with the parcel data, using a tool "Union" which computes a geometric union of both input features. This analysis layer contained both the land use designations, in addition to the assessor parcel number. Acreage information was generated by overlaying the land use/parcel layer with each hazard zone, then summarized by land use type and planning horizon. Parcel counts were generated by spatially querying the assessor parcel information within each Coastal Hazard Zone.

The vulnerability analysis included both spatial intersect queries to generate impacted resource and sectors counts, in addition to spatial intersections to calculate acreages and lengths impacted by the Coastal Hazard Zones.

3.2.5 Stormwater Analysis

To evaluate the probability that stormwater outflow would be impacted we evaluated the probabilities that the tidal elevations would exceed the top of the stormwater outfall pipe (assumed to be 5' based on interpretation of available data sources). Probability Exceedance Curves were produced using historical tidal data extracted from the Port San Luis tide gage (PID # 9412110) available publicly from the National Oceanic and Atmospheric Administration[9] (Please note that all data are in NAVD88). First, hourly tide levels from January 1972 to May 2017 were acquired and combined into a single data set used for the analysis. The tidal elevation data were detrended according to monthly sea level trends, which are also available at the NOAA website. Detrended sea level data (roughly 300,000 hourly records) were then grouped according to unique values of sea levels, resulting in ~320 records. Probability occurrences for each sea level scenario and planning horizon were then calculated. SLR flood elevations were produced by simply adding the three SLR scenarios (0.5ft, 1.5ft, and 5.5ft) to the original water elevation values, and plotting them alongside the detrended baseline elevation. Finally, the probabilities of inundation above 5ft were highlighted in the graph (red dots).

3.3 Vulnerable Sector Findings

3.3.1 Land Use

Overall, there are moderate risks to land use in the community of Los Osos from coastal flood related hazards. Coastal storm flooding will have a larger impact to the community, but the impacts are short-lived and occur primarily during high tides and precipitation events. For coastal storm flooding, damages could likely be cleaned up without having to implement more expensive adaptation measures. Longer-term tidal inundation may cause portions of Los Osos to be vulnerable and require substantial investment in adaptation measures to reduce those vulnerabilities, or relocate the development away from the flooded areas. Results of the analysis are summarized in Table 3.

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[9] www.tidesandcurrents.noaa.gov

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Acreages

The first measure of vulnerability analyzed existing and proposed land uses exposed to coastal flooding and tidal inundation (Figures 3, 4). Tidal inundation will have a slightly less impact to land use acreages and for some of the land use categories such as open space, and passive recreational uses (Figure 5). The routine flooding of the salt marshes may actually enhance the overall community character if marshes are allowed to advance landward. Under existing conditions, the land use categories of Whitehole, Open Space and Recreation have the highest number of acreages exposed to tidal inundation. By 2040 under buildout for the existing Community Plan, there are total of 90.6 acres exposed to tidal inundation with 9.9 acres (10.9 percent) of this land affecting residential and commercial development. By 2100 with approximately 5.5 feet of sea level rise, there are 133.7 acres of land use impacted with 37 acres or 27.7 percent of tidal inundation affecting residential and commercial properties (Figure 4; Table 3).

Table 3. Summary results of Existing Land Use Vulnerability Analysis

TYPE	Residential	Open Space	Recreation	Commercial Retail	Whitehole	Total	Residential	Open Space	Recreation	Commercial Retail	Whitehole	Total
UNITS	Count	Count	Count	Count	Count	Count	Acres	Acres	Acres	Acres	Acres	Acres
Community Total	5683	47	18	188	9	5958	1995	710	59	62	0	2930
Coastal Flooding												
Existing conditions	261	18	11	17	5	313	29.6	76.6	21.2	2.9	35.0	165.3
2025	290	18	11	17	10	347	32.2	77.6	21.2	3.0	70.2	204.3
2040	322	19	12	17	17	388	38.0	79.6	21.3	3.5	105.8	248.5
2100	460	21	13	41	24	560	64.7	86.8	21.7	7.1	143.1	323.5
Tidal Inundation												
Existing conditions	101	17	9	1	5	134	5.6	51.3	13.4	0.0	28.9	99.2
2025	109	17	9	3	10	149	7.5	57.8	16.0	0.0	60.3	141.6
2040	123	17	10	4	15	170	9.4	62.5	18.3	0.2	92.7	183.0
2100	264	18	11	17	20	331	32.5	75.5	22.5	2.9	127.7	261.1

Coastal flooding under existing conditions will impact the land use categories of Open Space, Whitehole, and Residential about evenly for a total of 130.7 acres of existing land use subject to coastal flooding. By 2040, with the build out of the existing Community Plan, there would be a total of about 143 acres vulnerable to coastal flooding. Of this total acreage exposed to flooding, 44 acres or 30.7 percent consists of developed land uses (either residential or commercial). By 2100 with 5.5 feet of sea level rise, the vulnerable acreage expands to 180.8 acres. Of those exposed, 77 acres or 42.6 percent impact residential or commercial development. Between ~1.5 and 5.5 feet of sea level rise, a threshold is reached particularly for the commercial development as seen in a doubling of the vulnerable acreage. Regardless, the risk to the community of Los Osos is relatively small from coastal flooding with potential impacts only affecting 2 percent of all residential development and 7.8 percent of commercial properties (Figure 5; Table 3).

Parcels

The second measure of vulnerability analyzed was the number of parcels exposed to coastal flooding and tidal inundation (Figures 4 and 5). Tidal inundation had similar results for Open Space, Recreation and Whitehole. Commercial retail reached a threshold under 2100 conditions from 4 parcels to 17 parcels (9 percent). Residential counts were about 200 less than the coastal flooding results. Less than 2 percent of residential parcels were impacted from existing conditions (102 parcels) to 2040 (124 parcels). Under the 2100 scenario, 266 residential parcels were impacted by tidal inundation. In total, 310 parcels were impacted by tidal inundation by 2100 (Figure 4; Table 3).

Figure 3A: Coastal Inundation Hazards and Existing Land Use

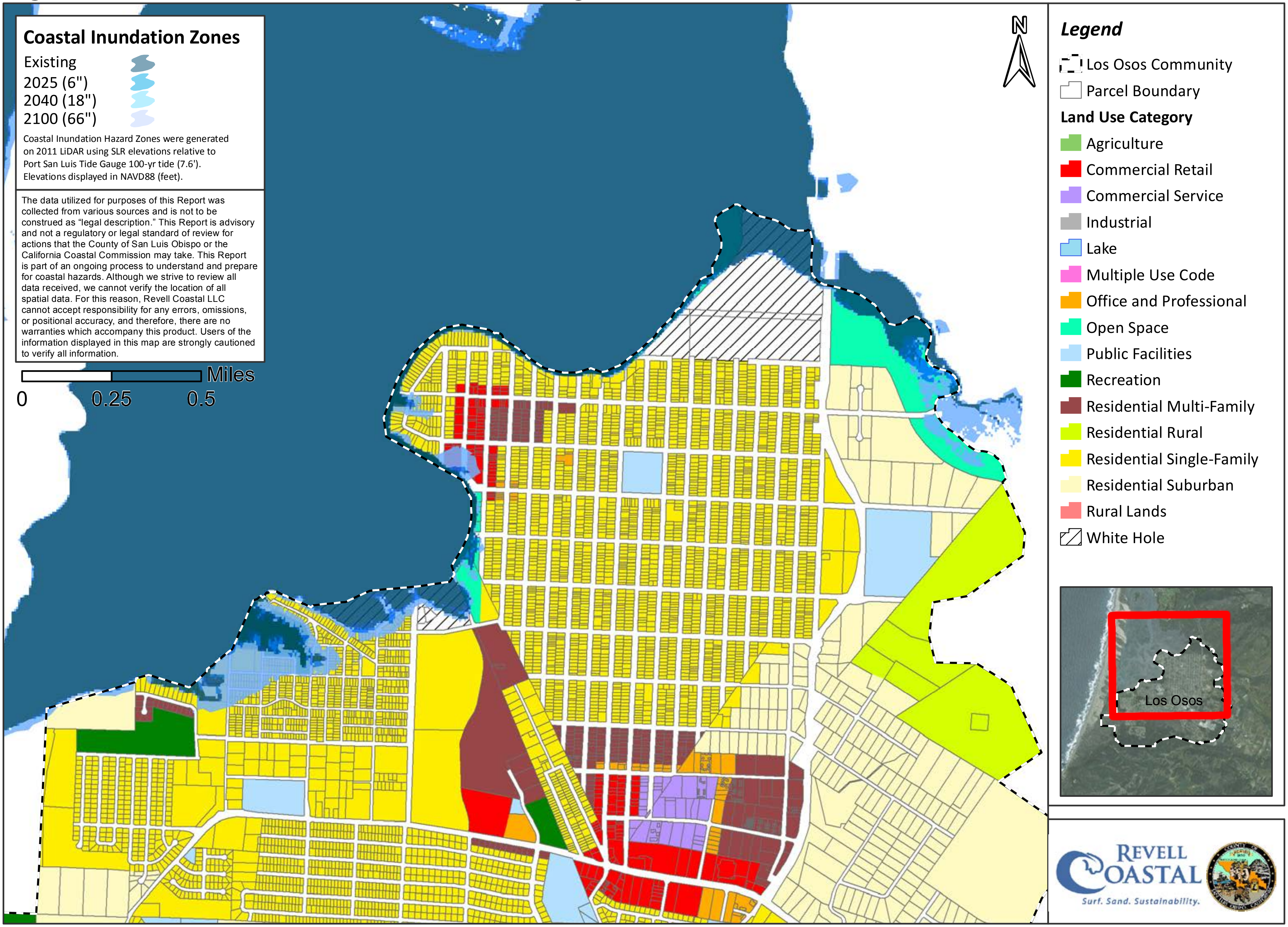


Figure 3B: Coastal Inundation Hazards and Proposed Land Use

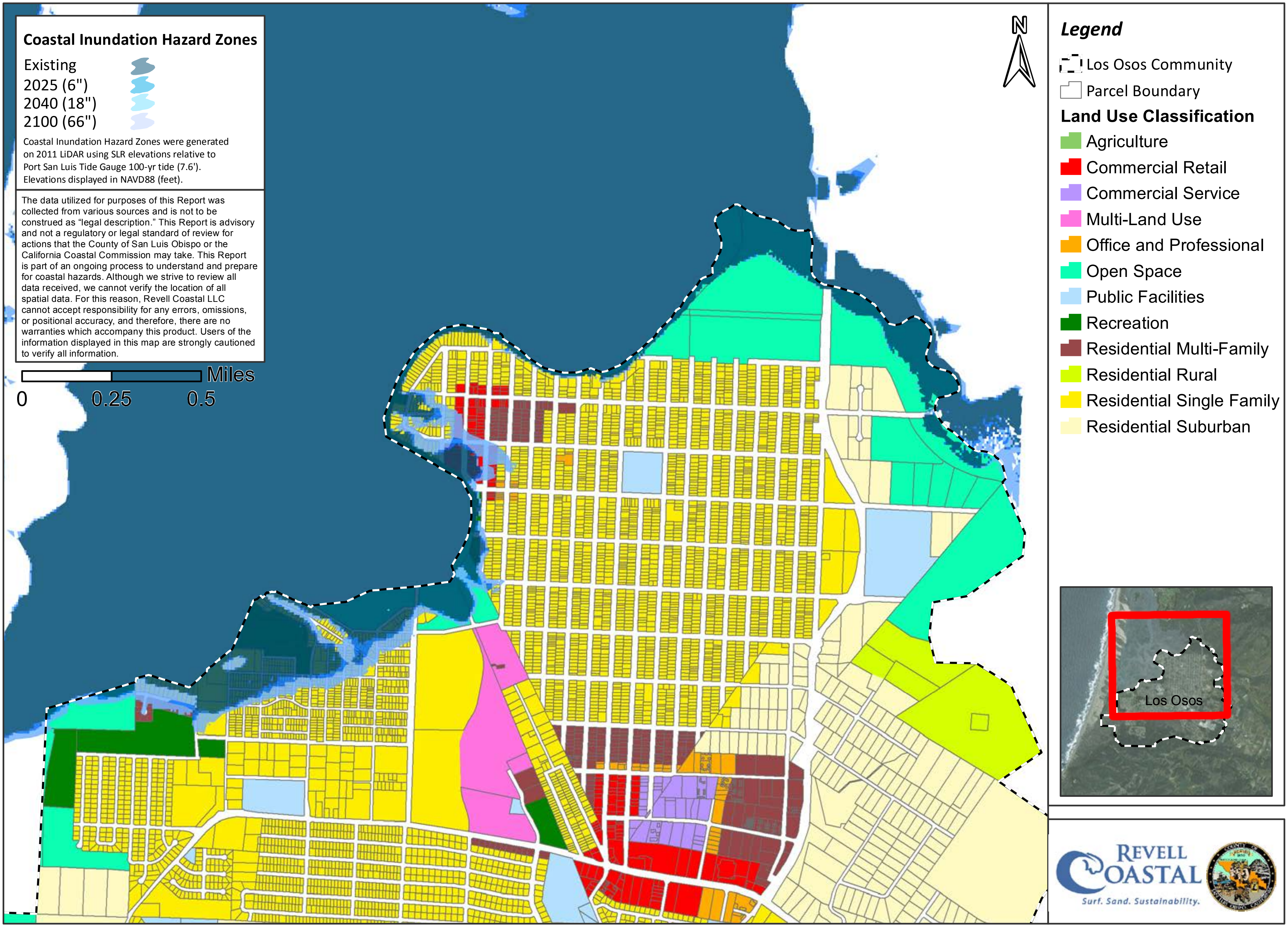


Figure 4A: Coastal Flooding Hazards and Existing Land Use

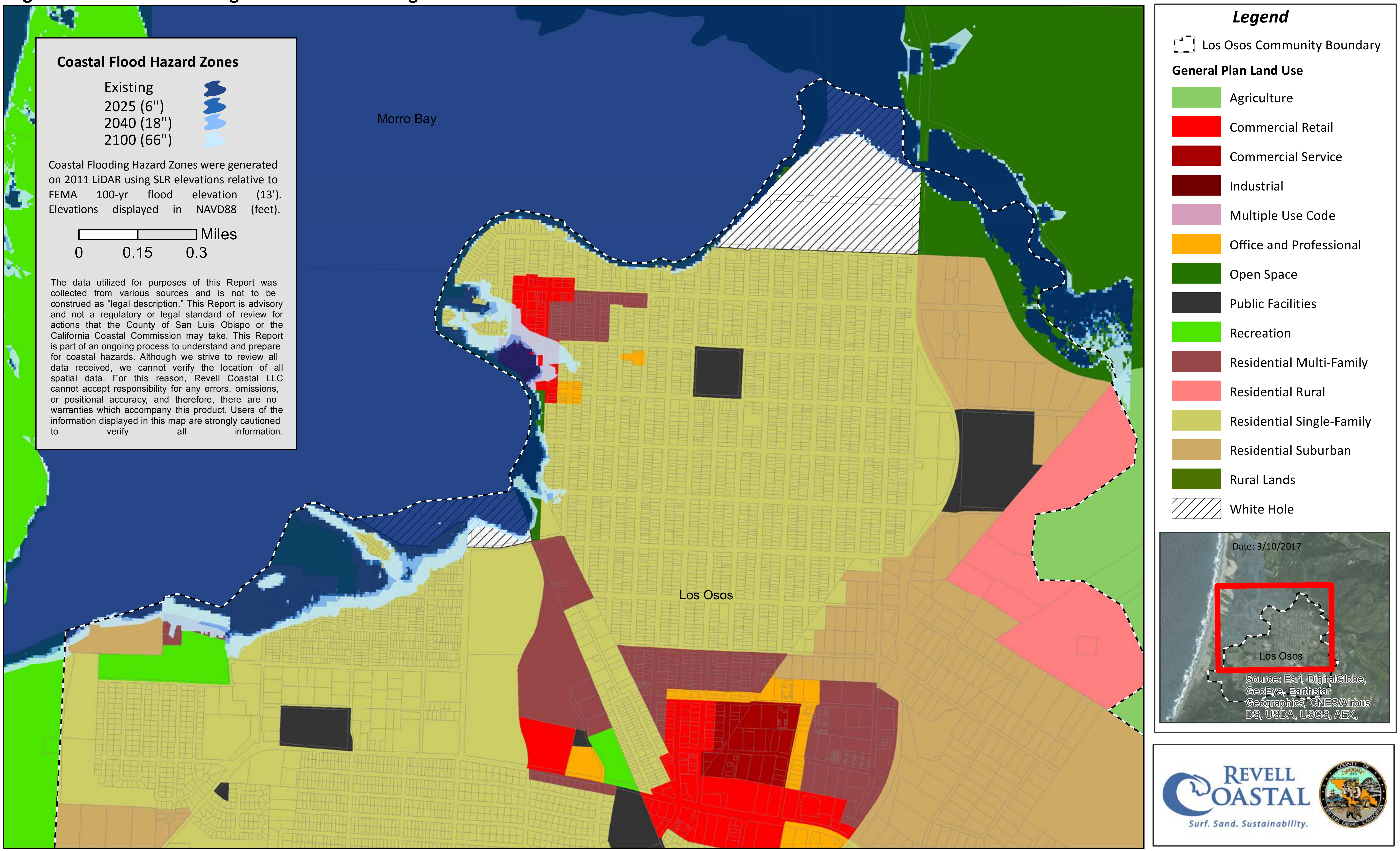
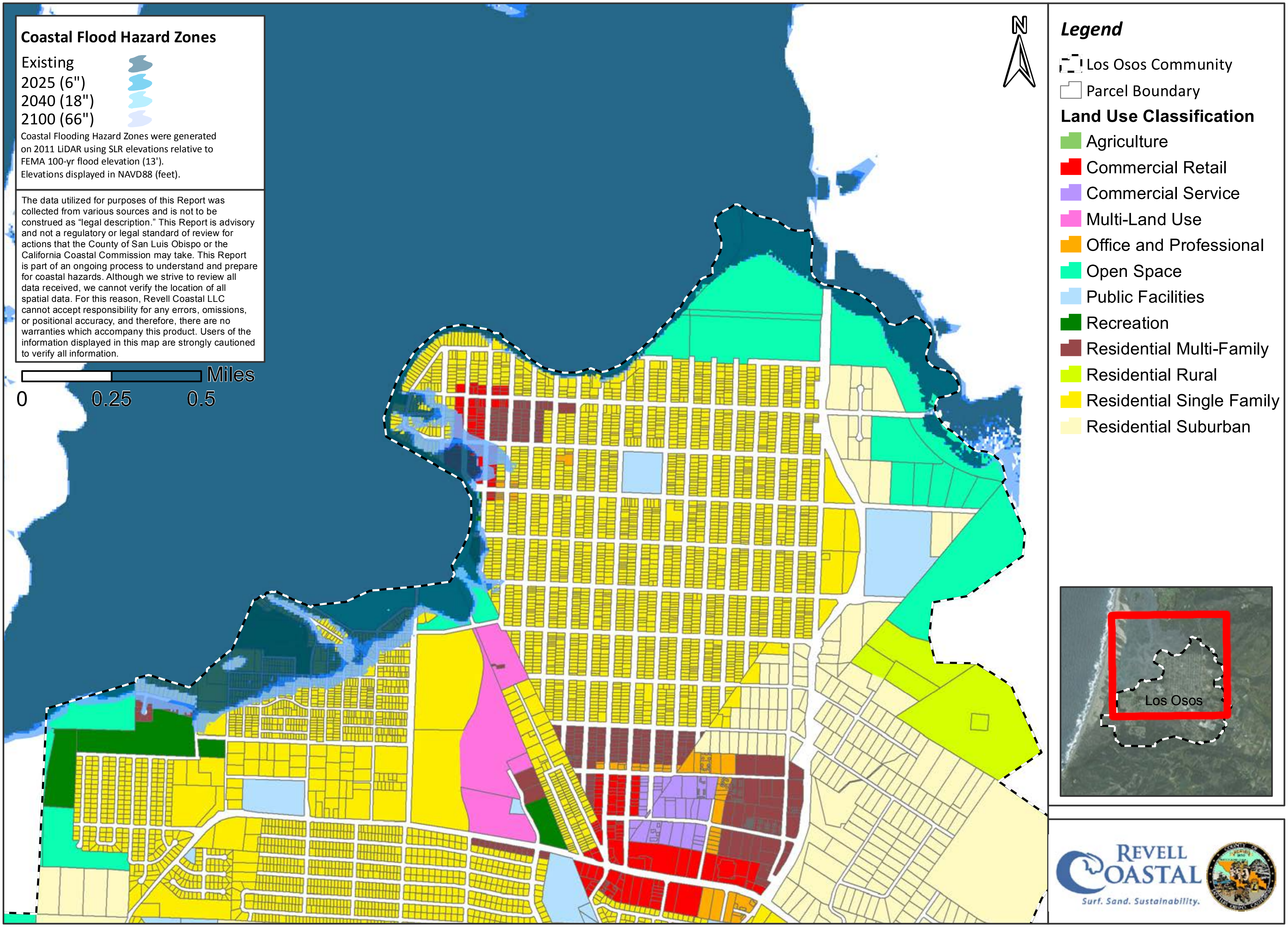


Figure 4B: Coastal Flood Hazards and Proposed Land Use



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Under existing conditions, 15 of the 23 open space parcels (65 percent), 7 of the 15 recreational parcels, and 5 out of the 9 of the Whitehole parcels (56 percent) were impacted by coastal flooding. For residential land use, 263 parcels were impacted (only 5 percent of total) and 17 commercial retail parcels. By 2025, flooding hazards likely impact 30 residential parcels. The trend is similar for 2040, with another 30 residential parcels and eight additional commercial retail parcels potentially vulnerable. By 2100, 457 residential parcels are impacted, with relatively small impacts to the overall Los Osos residential community (8 percent). Commercial retail vulnerabilities double by 2100 from 2040, which is a similar pattern to the acreage results for commercial retail. Open space did not increase from existing conditions with the same 15 parcels vulnerable to flooding. In total, 535 parcels were impacted by coastal flooding by 2100 (Figure 5; Table 3). No public facilities found to be at risk.

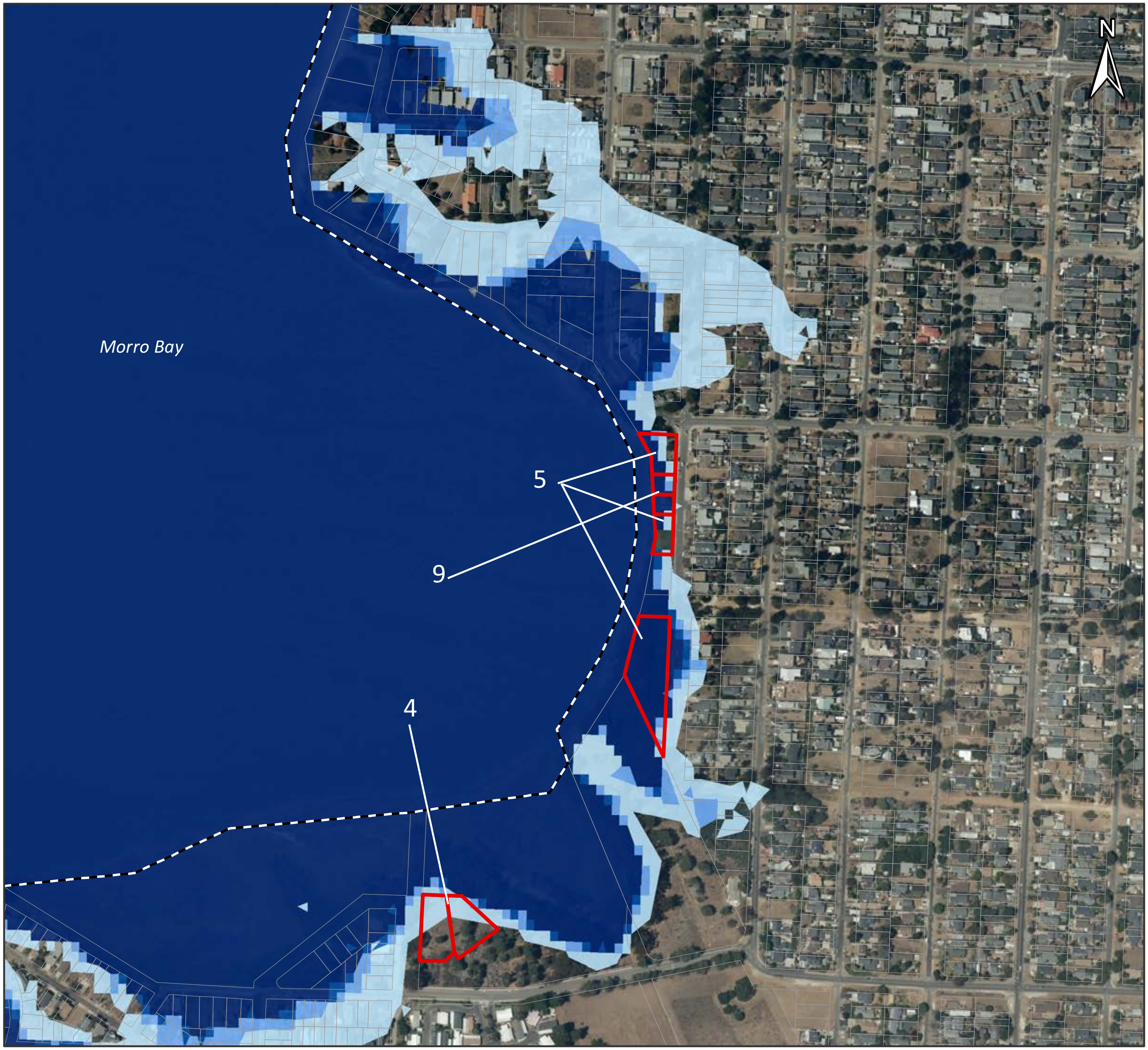
Areas of Potential Impact within the Project Site (Los Osos Community Plan)

Additional analysis of the coastal hazard was conducted to evaluate the vulnerabilities associated with the proposed land uses in the LOCP. Overall these vulnerabilities do not expand substantially, however two of the parcels proposed for land use upzoning are impacted increasing the potential vulnerabilities (Figure 5). Results of this are summarized in Table 4. The adaptation strategies and potential measures to reduce vulnerabilities to these and other community properties are discussed below in Section 4.

Table 4. Summary Results to proposed land use changes from Coastal Hazards Impacts

Community Plan Parcel #	Within Coastal Flood Hazard Zone	Within Coastal Tidal Hazard Zone	Impacted Within Project Buildout?	Existing Land Use	Proposed Land Use	Decreased/ Increased Intensity	Impacted Area and Increase in Density?	CEQA Level of Impact
1	Existing Conditions	Existing Conditions	Yes	No LU	OS	Neutral	No	Neutral
2	Existing Conditions	Existing Conditions	Yes	No LU	OS	Neutral	No	Neutral
3	Existing Conditions	Existing Conditions	Yes	RSF	OS	Decrease	No	Less Than
4	2100	No	No	No LU	RSF	Increase	No	Neutral
5	Existing Conditions	Existing Conditions	Yes	OS	Rec	Increase	Yes	Significant Adverse Impact
6a	No	No	No	RSF	Rec	Decrease	No	Less Than
9	Existing Conditions	2100	Yes	OS	PF	Increase	Yes	Significant Adverse Impact
14	No	No	No	RR	OS	Decrease	No	Less Than
20	Existing Conditions	Existing Conditions	Yes	OS	OS	Neutral	No	Neutral
22	No	No	No	RSF	REC	Decrease	No	Less Than
23	Existing Conditions	Existing Conditions	Yes	RS	OS	Decrease	No	Less Than
25	No	No	No	RS	OS	Decrease	No	Less Than

Figure 5: Coastal Flood Hazards on parcels with proposed land uses



Legend

Significant Impact Parcels

Los Osos Community Boundary

Coastal Flood Hazard Zones

Existing
2025 (6")
2040 (18")
2100 (66")

Coastal Flooding Hazard Zones were generated on 2011 LiDAR using SLR elevations relative to FEMA 100-yr flood elevation (13'). Elevations displayed in NAVD88 (feet).

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Miles
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3.3.2 Wastewater

The newly completed wastewater infrastructure is composed of the actual pipe network and the electrical and fiber-optic infrastructure necessary to operate and maintain the wastewater infrastructure. While buried pipe that has flood waters above is not especially vulnerable, the maintenance access locations and manholes also become vulnerable as coastal flooding and inundation increases. These escalating hazards may add substantial volumes of water into the system and cause problems related to salt content, as well as to potentially hinder management or overwhelm the system. Results of the vulnerability assessment are shown in Figure 6 and 7. and summarized in Table 5, which shows the cumulative vulnerabilities (e.g. listed as vulnerable for each time horizon and summed for all previous time horizons).

Table 5. Vulnerable wastewater infrastructure

TYPE	Electrical Lines	Fiber-Optic Conduit	Electrical Manholes	Electrical Transformers	Fiber-Optic Manholes	Total Pipe	Cleanouts	Manholes	Pump Stations	Valves	Outfalls
UNITS	Feet	Feet	Count	Count	Count	Feet	Count	Count	Count	Count	Count
Community Total	7,716	78,769	14	5	84	419,614	197	632	21	32	2
Coastal Flooding											
Existing conditions	101	109	1	0	0	9,774	4	19	2	2	1
2025	155	219	1	0	0	11,460	4	23	2	2	1
2040	313	488	1	0	1	15,422	6	28	2	3	2
2100	894	2,455	4	1	7	32,518	11	60	5	4	2
Tidal Inundation											
Existing conditions	0	0	0	0	0	58	1	0	0	0	0
2025	0	0	0	0	0	169	1	0	0	0	1
2040	0	0	0	0	0	1,053	1	3	0	0	1
2100	97	137	1	0	0	10,212	5	21	2	2	1

Existing conditions

Under existing conditions, the following components of the wastewater system are exposed to a 1% annual chance storm event.

- Approximately 10,000 feet of conveyance pipes which include gravity, lateral and force main pipes are underwater and while this may not be of critical concern since pipes are underground; the access to the equipment to manage the system which includes control valves, cleanouts, and electrical system to operate are also exposed.
- 2 pump stations have an estimated flood depth of 3.2 feet for the Baywood pump station and 0.7 feet for the Lupine pump station (Table 6)
- 1 of the 2 outfalls
- 20 Manholes (including 1 electrical manhole), which can be additional sources of flood water into the wastewater system and may result in excess capacity and contribute to system failure.
- 4 cleanout vaults (including one that is vulnerable during an extreme high tide) needed to make sure the conveyance system works, and
- 2 control valves necessary to isolate or shut down portions of the system should the need arise.

Future conditions

By 2025, with about half a foot of sea level rise, flooding hazards likely impact an additional ~1,700 feet of pipe and 4 additional manholes. With 1.5 feet of sea level rise around 2040, and additional ~4,000

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feet of pipe, 5 manholes, 2 clean outs and a control valve are likely to be episodically impacted by flood hazards. By 2100 with 5.5 feet of sea level rise, things get worse. During a large coastal flood event, a total of over 6 miles of pipe, 5 pump stations, an electrical transformer, 71 manholes (including electrical and fiber optic), and 4 control valves are likely to be vulnerable. (Figure 6, Figure 7; Table 5).

Over time episodic flood events will increase to tidal inundation which may further exacerbate complications in managing the wastewater system. While very limited components are exposed presently, by around 2100 with 5.5 feet of sea level rise, nearly 2 miles of pipes, 5 clean outs, 22 manholes, 2 control valves, 1 outfall, and 2 pump stations could potentially be exposed to tidal inundation.

Flood depths

Without detailed drawings of the 6 critical wastewater pump stations and power transformer infrastructure components, it is difficult to completely understand specific risk to future hazards. To provide some additional information to inform management of the system, flood and tidal inundation depths above present-day ground elevation were calculated for each exposed location (Table 6). For the most exposed Baywood Pump Station, flood depths can escalate over time from a present day 3.2 feet of possible flood depths to 8.7 feet by 2100. This same pump station could anticipate experiencing a tidal inundation of 3.4 feet during an extreme tide event.

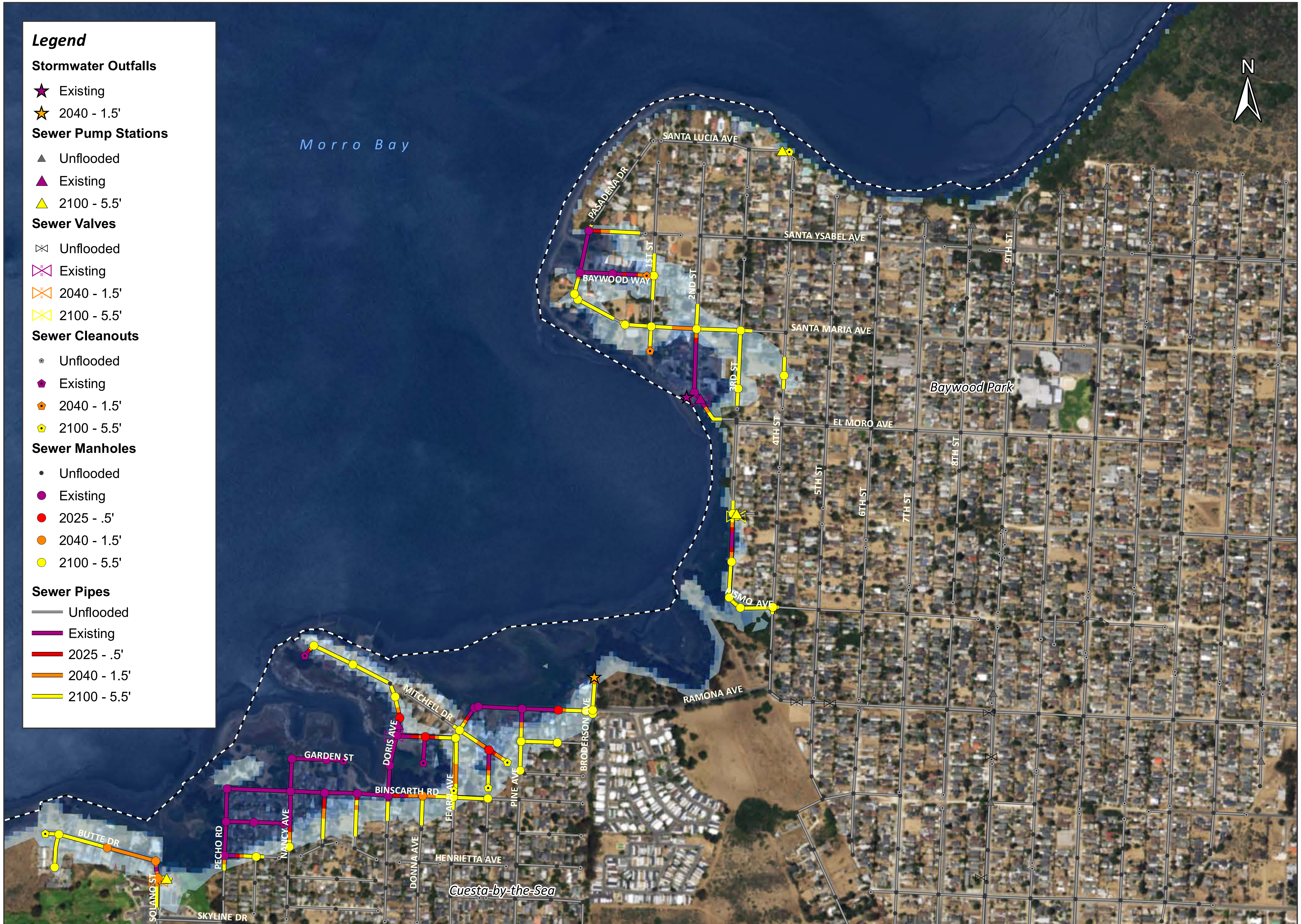
Table 6. Flood and tidal inundation depths for exposed pump stations and electrical transformers

Name	Type	Ground Elevation (ft NAVD)	Flood Year	Flood Depths Coastal (ft)				Flood Depths Tidal (ft)
				2015	2025	2040	2100	2100
Baywood PS	Pump Station	9.8	Current	-3.2	-3.7	-4.7	-8.7	-3.4
Lupine PS	Pump Station	12.3	Current	-0.7	-1.2	-2.2	-6.2	-0.8
Solano PS	Pump Station	15.4	2100	2.4	1.9	0.9	-3.1	2.2
West Paso PS	Power Transformer	17.3	2100	4.3	3.8	2.8	-1.2	4.2
4A on Santa Lucia Ave	Pump Station	17.8	2100	4.8	4.3	3.3	-0.7	4.7
West Paso Pump Station	Pump Station	18.9	2100	5.9	5.4	4.4	0.4	5.7

Trigger point

Between 1.5 and 5.5 feet of sea level rise, potential vulnerabilities in the Los Osos Community wastewater infrastructure sector expand substantially.

Figure 6 - Wastewater Infrastructure



Coastal Flood Hazard Zones

Existing
2025 (6 inches / .5 feet)
2040 (18 inches / 1.5 feet)
2100 (66 inches / 5.5 feet)

Los Osos Community Boundary

Coastal Flooding Hazard Zones were generated on 2011 LiDAR using SLR elevations relative to FEMA 100-yr flood elevation (13'). Elevations displayed in NAVD88 (feet).

The data utilized for purposes of this Report was collected from various sources and is not to be construed as "legal description." This Report is advisory and not a regulatory or legal standard of review for actions that the County of San Luis Obispo or the California Coastal Commission may take. This Report is part of an ongoing process to understand and prepare for coastal hazards. Although we strive to review all data received, we cannot verify the location of all spatial data. For this reason, Revell Coastal LLC cannot accept responsibility for any errors, omissions, or positional accuracy, and therefore, there are no warranties which accompany this product. Users of the information displayed in this map are strongly cautioned to verify all information.

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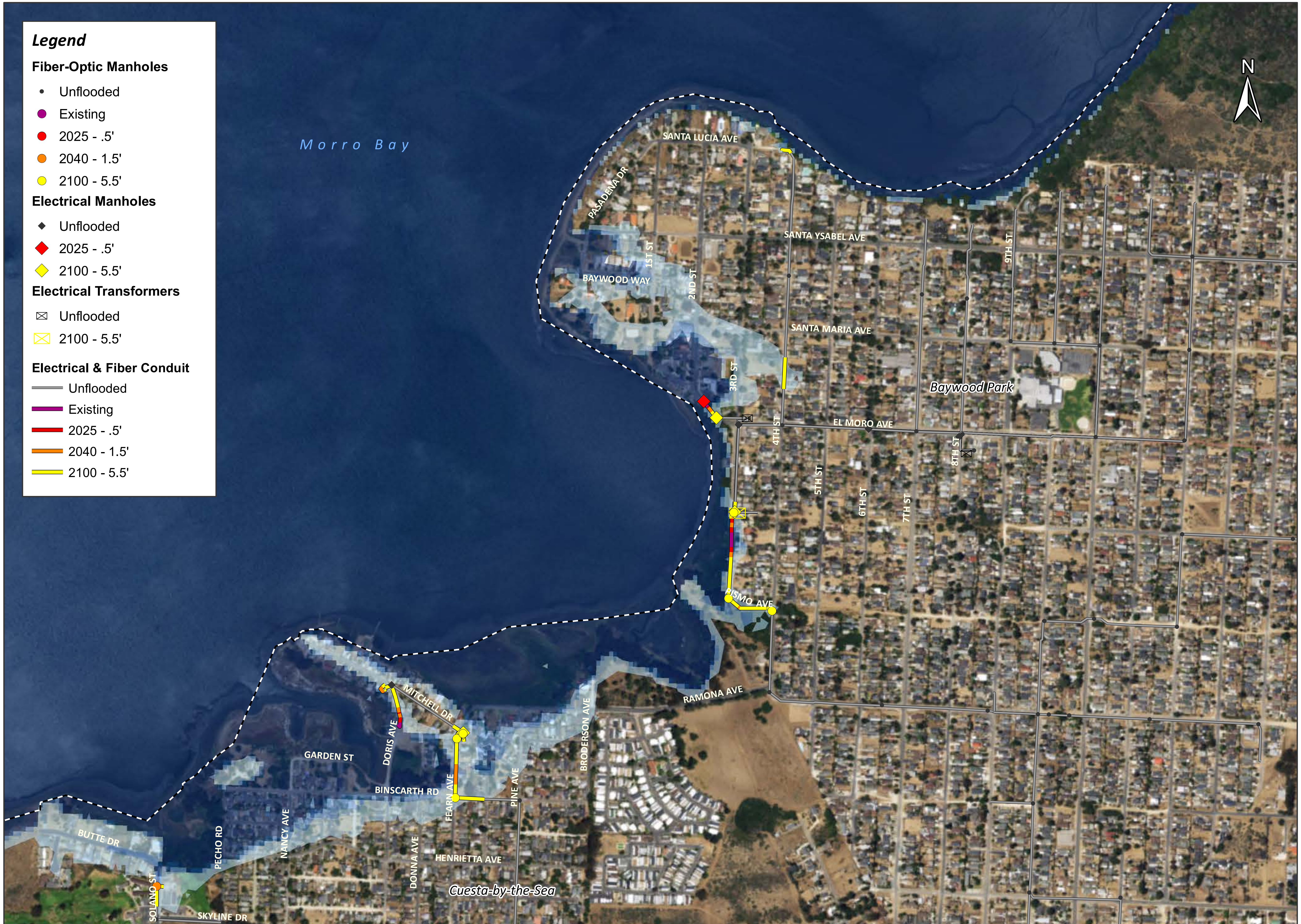
Figure 7 - Electrical Wastewater Infrastructure



Coastal Flood Hazard Zones

Existing
2025 (6 inches / .5 feet)
2040 (18 inches / 1.5 feet)
2100 (66 inches / 5.5 feet)

Los Osos Community Boundary

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3.3.3 Roads

Low lying roads and bike paths which provide access to the waterfront, piers, and other shoreline amenities will likely face increasing storm closures and eventually predictable tidal inundation may require relocation or elevation to maintain the service of these existing transportation corridors. Results of the vulnerability assessment are shown in Figure 8. and summarized in Table 7.

Table 7. Vulnerable roads and bike paths

TYPE	Roads	Proposed Bike Path
UNITS	Linear Feet	Linear Feet
Community Total	342,394	48,462
Coastal Flooding		
Existing conditions	7,126.5	2,737.1
2025	8,071.6	3,196.6
2040	10,188.2	3,511.5
2100	19,851.6	5,335.4
Tidal Inundation		
Existing conditions	0.0	0.0
2025	37.5	55.4
2040	1,015.2	340.2
2100	7,394.4	2,688.4

Existing conditions

Under existing conditions, approximately 1.3 miles of road and about half-a-mile of the proposed bike path network within the LOCP area are exposed to a 1% annual chance storm event.

Future conditions

By 2025 with 6 inches of sea level rise, about 1.5 miles of road and 0.6 miles of the proposed bike path may be affected by episodic storm flooding. By 2040 and 18 inches of sea level rise, nearly 2 miles of road and 0.7 miles of proposed bike path are vulnerable. With 5.5 feet of sea level rise near 2100, there are potentially 3.8 miles of road and over a mile of proposed bike path exposed to episodic coastal flooding and 1.4 miles of road and 0.5 miles of proposed bike path vulnerable to tidal inundation. A portion of the road and bike path over a bridge is also inundated and may require additional considerations to adapt this section to future hazards.

Trigger point

Between 1.5 and 5.5 feet of sea level rise roughly between 2040 and 2100, potential transportation sector impacts in the Los Osos Community expand substantially.

Figure 8 - Roads

Coastal Flood Hazard Zones

Existing
2025 (6 inches / .5 feet)
2040 (18 inches / 1.5 feet)
2100 (66 inches / 5.5 feet)

Los Osos Community Boundary

Coastal Flooding Hazard Zones were generated on 2011 LiDAR using SLR elevations relative to FEMA 100-yr flood elevation (13'). Elevations displayed in NAVD88 (feet).

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3.3.3 Coastal Access and Recreation

Coastal access and recreation are important components to the quality of life in Los Osos, over time the access points, and trail network along the coast will be vulnerable to episodic flooding and tidal inundation (Figure 9. and summarized in Table 8). Presently there are about 6.6 miles of the California Coastal trail, 3.3 miles of lateral access along the shoreline in Los Osos, and 4 vertical access locations.

Table 8. Coastal trail and vertical access vulnerabilities

TYPE	Coastal Trail Alignment	Vertical Access
UNITS	Linear Feet	Count
Community Total	35,011	4
Coastal Flooding		
Existing conditions	1,651.2	4
2025	2,048.1	4
2040	2,348.6	4
2100	3,990.9	4
Tidal Inundation		
Existing conditions	0.0	4
2025	139.6	4
2040	377.5	4
2100	3,275.9	4

Existing conditions

Under existing conditions, approximately 0.7 miles of coastal trail and 2.9 miles (90%) of the lateral beach access within the LOCP area are exposed to a 1% annual chance storm event. In addition, presently, 2.4 miles of lateral access (74%) is exposed to tidal inundation during an extreme high tide.

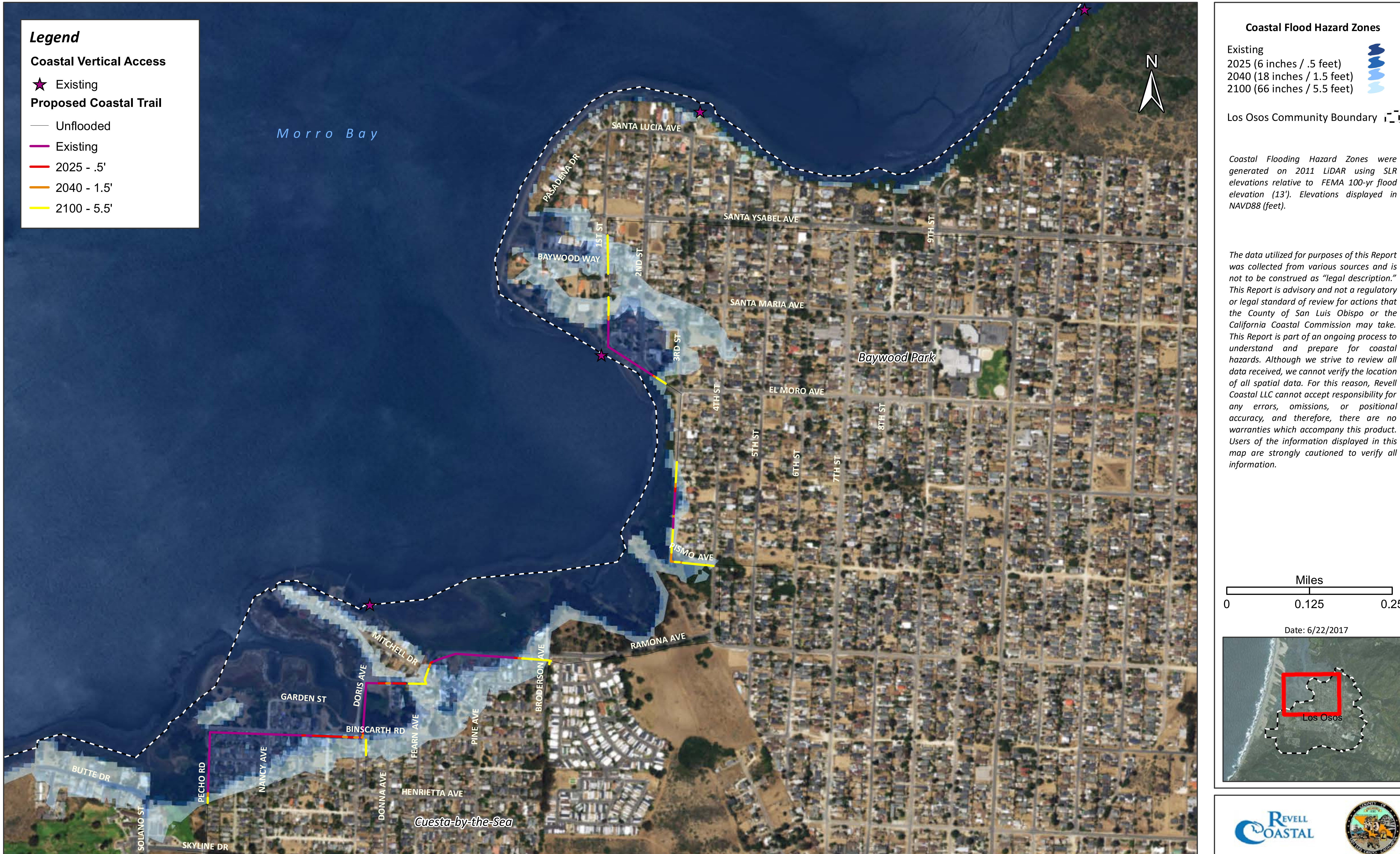
Future conditions

By 2025 with 6 inches of sea level rise, about 0.8 miles of coastal trail and 3.0 miles (91%) of the lateral beach access may be affected by episodic storm flooding. By 2040 and 18 inches of sea level rise, nearly 0.9 miles of coastal trail and 93% of the lateral beach access is potentially vulnerable. With 5.5 feet of sea level rise near 2100, there are potentially 1.2 miles of coastal trail and 3.1 miles (96%) of the lateral beach access exposed to episodic coastal flooding and 0.7 miles of coastal trail and 2.9 miles (90%) of the lateral beach access vulnerable to tidal inundation. This may affect the kayak launch sites, meandering trails, and beaches in particular.

Trigger point

Between 1.5 and 5.5 feet of sea level rise roughly between 2040 and 2100, potential transportation sector impacts in the Los Osos Community expand substantially.

Figure 9 - Coastal Access and Recreation



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3.3.5 Stormwater

Stormwater infrastructure is important to draining the Los Osos community during rain events. Most of the stormwater runoff is surface runoff running downhill. However, there are two storm drain pipes in Los Osos which empty into Morro Bay (Figure 10). The top of these two outfall pipes were constructed at around 5 feet NAVD (Figure X). At this elevation, even during existing high tide conditions the entire pipe outlet is covered by water and the stormwater conveyance capacity is reduced. As sea levels rise, the frequency and duration that tide water cover the pipe will further reduce the conveyance capacity during more of the tidal ranges and may cause upstream backup into streets, neighborhoods, and other community locations.

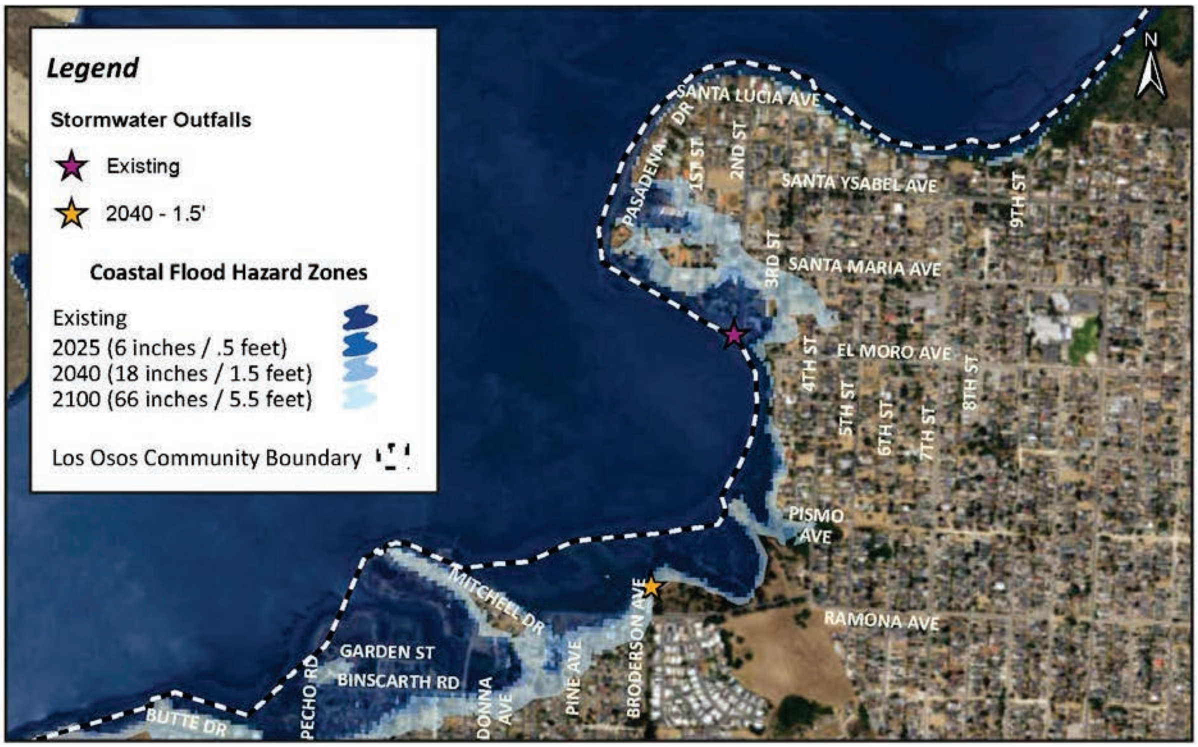

Figure 10. One of the two stormwater outfalls into Morro Bay

As the existing stormwater system has no flap gates, there may also be additional sources of flooding as high bay waters may propagate up the stormwater pipe system.

Using information from the as-built plans provided by the Community Services District and elevations of the top of the stormwater outfall pipes, a tidal exceedances frequency analysis was conducted to evaluate the increase in time that the stormwater conveyance system would be impacted in the future Figure 12. Probability occurrences for each sea level scenario and planning horizon were then calculated. SLR flood elevations were produced by simply adding the three SLR scenarios (0.5ft, 1.5ft, and 5.5ft) to the original tidal elevations.

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Figure 11. One of the two stormwater outfalls into Morro Bay

The probabilities of inundation above 5ft were highlighted in the graph (red dots) and summarized in Table 9.

Table 9. Summary of probabilities that stormwater conveyance will be impacted in the future

Drainage Pipe Elevation	Baseline	0.5ft SLR	1.5 ft SLR	5.5ft SLR
5ft	8%	14%	34%	97%

Results

Under existing conditions, the stormwater outlets are impacted by high tides 8% of the time. By 2025 with 0.5 feet of sea level rise that increases to 14% of the time. By 2040 and 1.5 feet of sea level rise the system has reduced conveyance capacity 34% of the time, and by 2100 with 5.5 feet of sea level rise the system would be significantly impacted 97% of the time.

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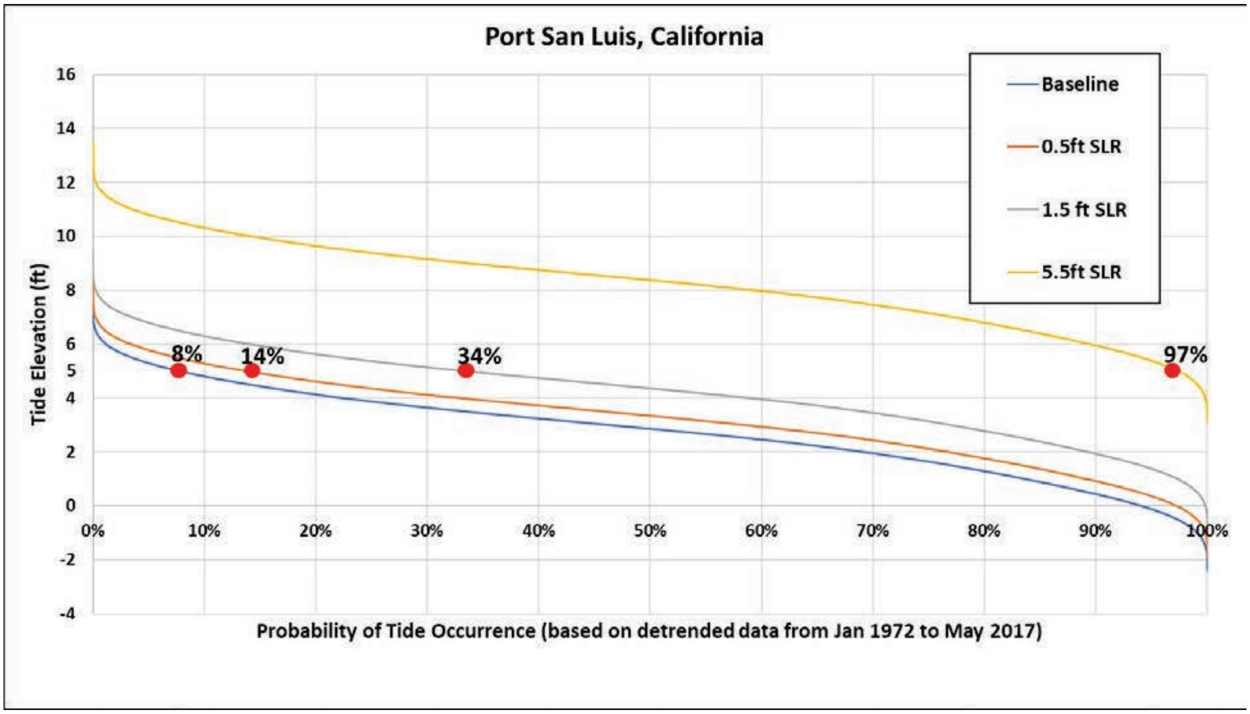

Figure 12. Results of the tidal frequency impacts analysis on stormwater

3.3.6 Habitats

The natural resources and access to the bay and resources are an important part of the quality of life in Los Osos. Sensitive habitats will likely be exposed to increasing frequency and duration of tidal inundation and flood extents which may change the composition of habitats in the present-day location. Wetland and estuary habitats depend on episodic inundation so the ability of many of the habitats may be able to advance landward and increase in elevation in Los Osos, as long as any adaptation strategies don't attempt to hold the line, but rather allow for the natural transgression. Additional work to look at the potential habitat evolution may be warranted as part of an update to the Estero Plan or even the National Estuary Program Master Plan.

4. Adaptation Approaches: Protect, Accommodate, and Managed Retreat Alternatives

4.1 Background

The planning world and the climate change world use the same words to mean different things. To clarify definitions here, the following words will briefly be defined from a climate change perspective – adaptation, mitigation, and measures. (please also see definitions in the relevant CEQA section of the LOCP).

- **Adaptation** – policy or design strategies which reduce the impacts (e.g. mitigation in CEQA)

- **Mitigation** – attempts to inventory, monitor and reduce the GHG emissions (e.g. Climate Action Plans)
- **Measures** – specific adaptation tactics which combined to make up a strategy (e.g. project design alternatives or mitigation measures)

Adaptation to climate change involves a range of adjustments to natural or human systems that facilitate a response to existing or expected climate changes. Adaptation planning involves a wide range of policy and programmatic measures that can be taken in advance of the potential impacts, or reactively, depending on the degree of preparedness, acceptable risk tolerance, and political willingness. Good adaptation planning should improve community resilience to natural disasters. Poor adaptation planning costs a lot of money in emergency response and clean up. Adaptation measures that reduce the ability of people and communities to deal with and respond to climate change over time are called maladaptation. These strategies should be avoided.

4.2 Adaptation strategies

There exist numerous options to address the risks and impacts associated with sea level rise. In most cases, the strategies for addressing sea level rise hazards will require proactive planning to balance protection of coastal resources with development. Adaptation generally falls into four main categories: do nothing, protect, accommodate, and retreat.

4.2.1 The "Do Nothing" Approach

Choosing to "do nothing" or following a policy of "non-intervention" can be considered an adaptive response. Emergency response tends to be the costliest, and the clean-up post disaster is often lacking in vision leading to repair, reconstruction, and implementation of the same types of non-resilience strategies, leading to repetitive losses.

4.2.2 The Protection Approach

Protection strategies employ some sort of engineered structure or other measure to defend development (or other resources) in its current location without changes to the development itself. Protection strategies can be further divided into "hard" and "soft" defensive measures. A gray (hard) approach would be to engineer a seawall, revetment, or flood levee, while a green approach may be to nourish beaches and wetlands, restore eelgrass, construct oyster reefs, or build sand dunes. Although the California Coastal Act clearly provides for potential protection strategies for "existing development," it also directs new development to be sited and designed to not require future protection that may alter a natural shoreline. It is important to note that most protection strategies are costly to construct, require increasing maintenance costs, and have secondary consequences to recreation, habitat, and natural defenses. Many of the gray (hard) strategies are forms of maladaptation as a long-term solution as it often makes a community rigid and less flexible.

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4.2.3 The Accommodation Approach

Accommodation strategies employ methods that modify existing or design new developments or infrastructure to decrease vulnerabilities and increase the resiliency of development and natural resources. On an individual project scale, accommodation strategies could include actions such as elevating structures, performing retrofits, or using materials to increase the strength of developments in order to handle additional tidal elevations; building structures that can easily be moved and relocated; or using additional setback distances to account for acceleration of erosion. On a community-scale, accommodation strategies include many of the land use designations, zoning ordinances, or other measures that require the above types of actions, as well as strategies such as clustering development in less vulnerable areas or requiring mitigation actions to provide protection of natural areas.

4.2.4 The Retreat Approach

Retreat strategies relocate or remove existing development out of hazard areas and limit the construction of new development in vulnerable areas. These strategies include creating land use designations and zoning ordinances that encourage building in less hazardous areas or gradually removing and relocating existing development. Acquisition and buy-out programs, transfer of development rights programs, and removal of structures where the right to protection was waived (i.e., via permit condition) are examples of strategies designed to encourage retreat.

4.3 Secondary Impacts

Almost all adaptation strategies have secondary impacts associated with them. Some of these are minor issues, such as short-term habitat impacts following removal of infrastructure or undergrounding of overhead power lines. Others can be quite confounding and expensive, such as the burial of beaches under rocks following construction of revetments, or a retrofit to a critical infrastructure component.
Many communities have relied on setbacks to reduce hazards risk, and some are currently experimenting with establishing setback lines that are based on modeled predictions of where the new coastline or hazards may be. Setbacks alone could be considered maladaptive because they eventually lead to structures being at risk. Therefore, it is important to have elements of retreat, such as movable foundations or locations for transfer of development. Further, triggers for action, such as relocation, should take the place or work in conjunction with regulatory setback policies.

Sediment management is another option to combat erosion by increasing wetland accretion or building wider beaches and higher sand dunes. However, sediment management can be costly, and regulatory hurdles exist to placing sediment in wetlands without it being considered fill. Secondary impacts from sediment management vary depending on the volume, frequency, and method of placing, but they can substantially degrade sandy beach ecosystems, temporarily limit recreational use, and can bury sensitive habitats such as eel grass and rocky intertidal habitats.

Shoreline protective devices (e.g., coastal armoring, flood control levees) can also adversely affect a wide range of coastal resources protected by the California Coastal Act. They often impede or degrade public access and recreation along the shoreline by occupying beach area or tidelands and by reducing shoreline sand supply. Protecting the back of the beach ultimately leads to the loss of the beach as sea levels rise and coastal erosion continues on adjacent unarmored sections. Shoreline protection structures therefore raise serious concerns regarding consistency with the public access and recreation

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policies of the California Coastal Act. Such structures can also fill coastal waters or tidelands and harm marine resources and biological productivity, which conflicts with California Coastal Act Sections 30230, 30231, and 30233. They often degrade the scenic qualities of coastal areas and alter natural landforms, which conflicts with Section 30251. Finally, by halting disrupting landscape connectivity, structures can prevent the inland migration of intertidal and beach species during large coastal flood or wind wave events. This disruption will prevent intertidal habitats, saltmarshes, beaches, and other low-lying habitats from advancing landward as sea levels rises over the long-term.

4.4 Recommended Adaptation Strategies for Los Osos

Living shoreline strategy – a nature based green strategy would likely utilize several measures that would increase resiliency by mimicking or enhancing natural processes. Restoring eel grass beds and nearshore oyster reefs would help dissipate wave energy and reduce flooding. Sediment management of fine grained muds would encourage accretion of the salt marshes and help reduce flooding. Sand and cobble grained sediments could reduce wind wave exposure and reduce flooding. It is also recommended that the community disallow any future coastal armoring.

Elevation – change building codes to increase base flood elevations in new development and substantive (>30-50%) redevelopment. Raise important road elevations. Elevate key electrical components of the wastewater infrastructure.

Setbacks – require setbacks to begin from an elevation and not the property boundaries. (recommend wherever possible mean high-water elevations + 3 feet acknowledging that MHW changes with each tidal epoch).

Retreat – relocate structures and the realignment of infrastructure to avoid future hazards. Acquire flood easements on properties to allow temporary flood impacts and limit the community liabilities.
Create triggers (e.g. such as repetitive losses) that would downzone land uses. For high risk properties, consider a public acquisition of the property potentially with a lease back option to regain some public investment.

Flood proof – consider additional work to retrofit stormwater and wastewater systems with flap gates, and flood proof all manhole covers so that manholes would not be an additional source of flood waters into critical infrastructure. Additional component retrofits to the wastewater pump stations and structures housing the electrical transformers would be beneficial and increase the resilience of the wastewater system.

Monitoring – develop long-term monitoring stations to collect data on marsh elevation and accretion, and tide levels in Los Osos specifically. Photo document flood and king tide extents. Review available science and modeling results on a 5-year basis and review policies for appropriate revisions.

Real estate disclosures – mandate coastal hazards and climate change real estate disclosures upon each land transaction.

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Appendix D

Noise Analysis – Technical Report

RECON

Noise Analysis for the Los Osos Community Plan Update, County of San Luis Obispo, California

Prepared for
San Luis Obispo County
Department of Planning and Building
County Government Center, Room 300
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June 2, 2016

Jessica Fleming, Environmental Analyst

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Acronyms

ADT	average daily traffic
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CNEL	community noise equivalent level
County	County of San Luis Obispo
dB	decibels
dB(A)	A-weighted decibels
FTA	Federal Transit Authority
HVAC	heating, ventilation, and air conditioning
Hz	hertz
in/sec	inches per second
L_{DN}	day-night average sound level
L_{eq}	one-hour equivalent noise level
LOCP	Los Osos Community Plan
L_{pw}	sound power level
OITC	Outdoor–Indoor Sound Transmission Class
PPV	peak particle velocity
STC	Sound Transmission Class
vdB	vibration decibels

Executive Summary

The Los Osos Community Plan (LOCP) functions as a General Plan and Local Coastal Plan guiding future development within the Los Osos community in San Luis Obispo County. The LOCP is part of the Estero Area Plan and located within the Estero Planning Area. The primary objective the LOCP is to establish a framework for the orderly growth and development of Los Osos. Additionally, the plan is intended to be consistent with strategic growth principles and other land use policies established in the County General Plan.

This report discusses potential noise impacts associated with the LOCP. As part of this assessment, noise levels due to vehicle traffic were calculated and evaluated against County of San Luis Obispo (County) General Plan standards. In addition to compatibility, the potential for noise to impact adjacent receivers from future on-site sources and construction activity was assessed. A summary of the findings is provided below.

Increase in Ambient Noise

Vehicular traffic increases due to future development consistent with the LOCP would increase corresponding noise levels on area roadways. An increase of 3 A-weighted decibels [dB(A)] in ambient noise levels is considered potentially significant if the existing or future noise levels would exceed the noise and land use compatibility guidelines of the County General Plan at local land uses. The increase in ambient noise would be greater than 3 dB(A) adjacent to the following eight roadway segments: Pecho Valley Road south of Monarch Lane, Pecho Valley Road south of Rodman Drive, Nipomo Avenue west of South Bay Boulevard, Ramona Avenue west of 9th Street, Ramona Avenue west of 4th Street, El Moro Avenue west of 11th Street, El Moro Avenue west of 7th Street, and Bayview Heights Drive south of Los Osos Boulevard. There are residential uses located adjacent to these roadway segments. These increases in traffic noise could adversely affect the existing noise environment, especially with respect to noise-sensitive receivers. However, exterior noise levels adjacent to these roadway segments are not projected to exceed 60 community noise equivalent level (CNEL). As the existing and future noise levels would not exceed the County compatibility standard of 60 CNEL, the increase in ambient noise would be less than significant.

Noise/Land Use Compatibility

Noise contours for existing and future conditions were modeled using measured and projected traffic volumes on major roadways within the LOCP area. With the exceptions of areas immediately adjacent to Los Osos Valley Road and South Bay Boulevard, vehicle traffic noise levels are not projected to exceed 60 CNEL.

Policies 3.3.1 through 3.3.3 of the County General Plan set standards for the siting of sensitive land uses. New development of noise-sensitive land uses would not be permitted in areas exposed to transportation noise levels which exceed 60 CNEL (70 CNEL for outdoor sports and recreation) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified in the General Plan. Noise sensitive land uses located adjacent to Los Osos Valley Road and South Bay Boulevard would have the potential to result in exterior noise levels that exceed County standards. Site-specific exterior noise analyses that demonstrate that the project would not place sensitive receivers in locations where the exterior existing or future noise levels would exceed the noise compatibility guidelines of the General Plan would be required. Noise control measures such as site design, sound walls, and other measures could reduce noise to acceptable levels. Such measures cannot practically be designed at this time because no specific projects have been designed and proposed at this time. Exterior noise impacts would be potentially significant. The mitigation outlined in Section 8.2 would reduce these impacts to a level of less than significant.

Interior noise impacts for all residential projects would be less than significant as applicants must demonstrate compliance with the current interior noise standards (45 CNEL) through submission and approval of a California Building Code (Title 24) Compliance Report.

Stationary Sources of Noise

Stationary sources of noise include activities associated with a given land use. The LOCP area includes multiple land uses, including residential, commercial, and mixed-use land uses as well as recreational and institutional uses. Land use development generally includes on-site stationary noise sources, such as rooftop heating, ventilation, and air conditioning (HVAC) equipment; mechanical equipment; emergency electrical generators; parking lot activities; loading dock operations; and recreation activities. Future on-site generated noise sources have the potential to exceed to property line noise levels limits established in the County's Code. Without detailed site plans and operations data, it cannot be verified that future projects implemented in accordance with the LOCP would be capable of reducing noise levels to comply with the County's Code property line standards. Impacts may be significant. The mitigation outlined in Section 8.3 would reduce these impacts to a level of less than significant.

Construction

Construction noise has the potential to result in temporary ambient noise increases. The location of future projects and construction activities that would occur as a result of future development consistent with the LOCP are not known at this time; thus, the LOCP may result in construction activities in close proximity to noise sensitive receivers. Although existing adjacent residences near construction sites would be exposed to construction noise levels that may be heard above ambient conditions, the exposure would be temporary and would cease at the end of construction. Additionally, construction activities would occur during the hours specified in the County's Code. However, temporary noise impacts to residential receivers located within 200 feet of construction activities would be potentially significant. Actual construction noise levels may vary. The mitigation outlined in Section 8.4 would reduce these impacts to a level less than significant.

Vibration

No operational components of future development consistent with the LOCP would include significant groundborne noise or vibration sources. Operational vibration impacts would be less than significant.

Construction activities that generate excessive vibrations are generally limited to blasting, pavement breaking, and impact pile driving. Projects implemented under the LOCP would be constructed using typical construction techniques; no blasting is contemplated. Heavy construction equipment (e.g., bulldozer and excavator) would generate a limited amount of groundborne vibration during construction activities at short distances away from the source, and would not be a significant source of excessive vibration. Based on the human response to groundborne vibrations, a groundborne vibration level that is distinctly perceptible of 0.04 peak particle velocity (PPV) at a structure, is used for assessing groundborne vibrations from general construction activities. Using the Federal Transit Authority's (FTA) recommended procedure for applying a propagation adjustment to reference levels, vibration levels would exceed 0.04 PPV within approximately 50 feet of bulldozers and other heavy equipment. Non-pile driving or foundation work construction phases that have the highest potential of producing vibration (such as jackhammering and other high power tools) would be intermittent and would only occur for short periods of time for any individual project site. Therefore, the project would not expose persons to excessive groundborne vibration, and as such, impacts would be less than significant.

1.0 Introduction

The Los Osos Community Plan (LOCP) would function as a General Plan and Local Coastal Plan guiding future development within the Los Osos community. The planning area is part of the Estero Area Plan and located within the Estero Planning Area. The LOCP establishes a vision for the future of Los Osos and defines the nature of future development in the Los Osos planning area, and provides development standards that in many cases are site-specific.

The purpose of this study is to assess the potential for significant adverse noise impacts resulting from development that could occur with the LOCP. Noise impacts were assessed in accordance with standards established in the County's General Plan and County Code.

2.0 Project Description

The LOCP functions as a General Plan and Local Coastal Plan guiding future development within the Los Osos community. The planning area is part of the Estero Area Plan and located within the Estero Planning Area. The LOCP establishes a vision for the future of Los Osos and defines the nature of future development in the Los Osos planning area, and provides development standards that in many cases are site-specific.

The unincorporated community of Los Osos is located along the coast in the central portion of San Luis Obispo County, generally south of and adjacent to Morro Bay and its associated estuary (Figure 1). Los Osos is approximately 4 miles south of the City of Morro Bay, across the bay/estuary, and approximately 10 miles west of the City of San Luis Obispo, at the western end of Los Osos Valley, a broad, relatively flat agricultural area formed by Los Osos Creek. However, the Los Osos Community Plan does not include all land or development within the U.S. Census-defined Los Osos, but only encompasses the land within the identified Urban Reserve Line (URL) (Figure 2). The area within the existing URL includes about 3,087 acres (4.8 square miles). The proposed project envisions minor changes to the URL boundary, including 17 acres added along Turri Road beyond the end of the eastern terminus of Santa Ysabel Avenue, but another 65-acre area adjacent to Montana de Oro State Park removed, resulting in a net decrease of about 48 acres overall.

The existing Urban Services Line (USL) is smaller than, and completely within the URL, and with some exceptions, is generally focused on the urbanized portions of the community west of South Bay Boulevard. Under the LOCP, the USL will be contracted to some extent in certain areas, so the proposed USL will be smaller than the existing boundary.

Project Location

FIGURE 1
Regional Location

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Image Source: USDA FSA NAIP (flown June 2014)

FIGURE 2
Aerial Photograph of LOCP Vicinity

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Los Osos is primarily residential in nature. There are two primary commercial areas, the downtown area or Central Business District centered around Los Osos Valley Road and the Baywood Commercial Area centered along Second Street. These areas are focused either on local community-servicing businesses and office space, or on supporting the regional tourist economy. The downtown area is more locally focused, with grocery stores, restaurants, banks, and offices, while the Baywood community is more tourist-oriented, with some hotels, and recreational businesses along with other businesses that serve the local neighborhoods.

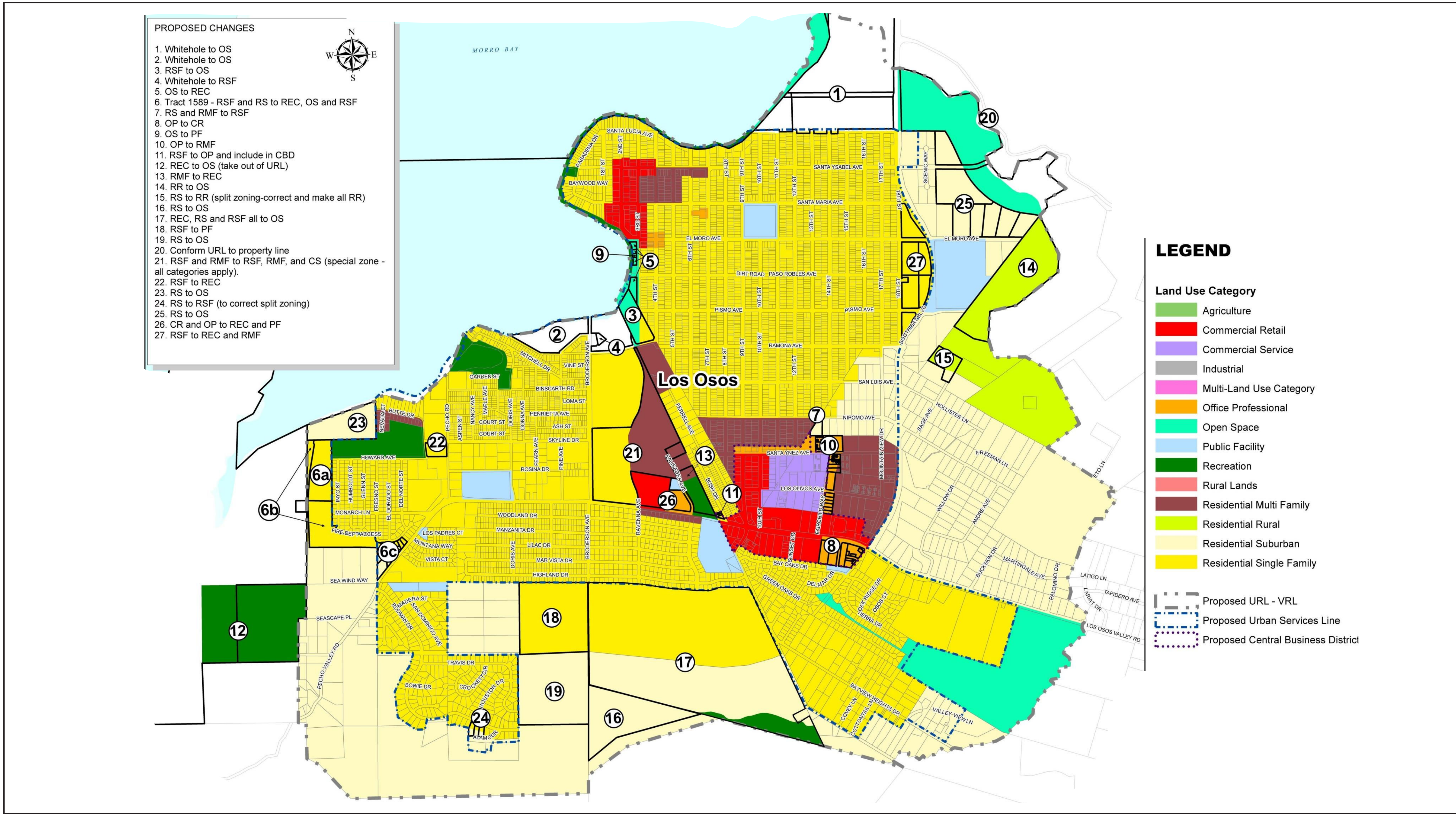
The primary objective the LOCP is to establish a framework for the orderly growth and development of Los Osos. Additionally, the plan is intended to be consistent with strategic growth principles and other land use policies established in the County General Plan.

Table 1 summarizes the existing, adopted, and proposed land use distribution and development potential within each land use category under the proposed LOCP. Figure 3 shows the LOCP proposed changes. Development under the LOCP could result in an additional 1,861 residential units and up to 364,000 square feet of commercial space, for a total of 8,182 residential units and 1,034,300 square feet of non-residential space (floor area) within the LOCP study area within the 20-year plan horizon (by 2035). Buildout of the LOCP would accommodate an additional 4,429 residents over existing conditions for a total of 19,473 residents.

Table 1
Existing and Proposed Land Use Distribution

Land Use	Existing	Adopted LOCP		Proposed LOCP	
		Buildout	Net Increase	Buildout	Net Increase
Residential (dwelling units)					
Single Family	5,426	7,264	1,838	6,487	1,061
Multi-Family	895	1,864	969	1,695	800
TOTAL	**6,321**	**9,128**	**2,807**	**8,182**	**1,861**
Non-Residential (square feet)					
Retail	439,200	669,045	229,845	668,100	228,900
Commercial/Service	221,000	176,779	-44,221	284,600	63,600
Office	10,100	214,261	204,161	61,600	51,500
Recreation	0	24,975	24,975	10,000	10,000
Public Facilities/Recreation	0	0	0	10,000	10,000
TOTAL	**670,300**	**1,085,060**	**414,760**	**1,034,300**	**364,000**

Map Source: Los Osos Community Plan Public Review Draft, January 30, 2015



0 Feet 1800

FIGURE 3
LOCP Proposed Changes

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3.0 Fundamentals of Noise and Vibration

3.1 Fundamentals of Noise

Sound levels are described in units called the decibel (dB). In technical terms, sound levels can be described as either a “sound power level” or a “sound pressure level,” which while commonly confused are two distinct characteristics of sound. Both share the same unit of measure, the dB. However, sound power, expressed as L_{pw}, is the energy converted into sound by the source. The L_{pw} is used to estimate how far a noise will travel and to predict the sound levels at various distances from the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers such as an eardrum or microphone and is the sound pressure level. Noise measurement instruments only measure sound pressure, and noise level limits used in standards are generally sound pressure levels.

Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease. However, human perception of noise has no simple correlation with acoustical energy. A change in noise levels is generally perceived as follows: 3 A-weighted dB [dB(A)] barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise (California Department of Transportation [Caltrans] 2013).

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Therefore, the “A-weighted” noise scale is used for measurements and standards involving the human perception of noise. Noise levels using A-weighted measurements are designated with the notation dB(A).

Human perception of noise has no simple correlation with acoustical energy. A change in noise levels is generally perceived as follows: 3 dB(A) barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise (Caltrans 2013).

3.1.1 Descriptors

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this study are the one-hour equivalent noise level (L_{eq}) and the community noise equivalent level (CNEL). The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and an additional 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night.

3.1.2 Propagation

Sound from a small, localized source (approximating a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate of 6 dB(A) for each doubling of the distance. Traffic noise is not a single, stationary point source of sound. The movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The drop-off rate for a line source is 3 dB(A) for each doubling of distance.

The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site (such as parking lots or smooth bodies of water) receives no additional ground attenuation, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the source. A soft site (such as soft dirt, grass, or scattered bushes and trees) receives an additional ground attenuation value of 1.5 dB(A) per doubling of distance. Thus, a point source over a soft site would attenuate at 7.5 dB(A) per doubling of distance.

3.2 Fundamentals of Vibration

Groundborne vibration consists of oscillatory waves that propagate from the source through the ground to adjacent structures. The frequency of a vibrating object describes how rapidly it is oscillating. The number of cycles per second of oscillation is the vibration frequency, which is described in terms of hertz (Hz). The normal frequency range of most groundborne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz (Crocker 2007).

3.2.1 Perception of Vibration at the Receiver

While people have varying sensitivities to vibrations at different frequencies, in general, they are most sensitive to low-frequency vibration. Vibration in buildings caused by construction activities may be perceived as motion of building surfaces or rattling of windows, items on shelves, and pictures hanging on walls. Vibration of building components can also take the form of an audible low-frequency rumbling noise, which is referred to as groundborne noise. Groundborne noise is usually only a problem when the originating vibration spectrum is dominated by frequencies in the upper end of the range (60 to 200 Hz), or when foundations or utilities, such as sewer and water pipes, connect the structure and the construction activity (Federal Transit Authority [FTA] 2006).

Although groundborne vibration is sometimes noticeable in outdoor environments, groundborne vibration is almost never annoying to people who are outdoors (FTA 2006).

The primary concern from vibration is the ability to be intrusive and annoying to local residents and other vibration-sensitive land uses.

3.2.2 Vibration Propagation

Vibration energy spreads out as it travels through the ground, causing the vibration level to diminish with distance away from the source. High-frequency vibrations reduce much more rapidly than low frequencies, so that low frequencies tend to dominate the spectrum at large distances from the source. Discontinuities in the soil strata can also cause diffractions or channeling effects that affect the propagation of vibration over long distances. When vibration encounters a building, a ground-to-foundation coupling loss will usually reduce the overall vibration level. However, under certain circumstances, the ground-to-foundation coupling may also amplify the vibration level due to structural resonances of the floors and walls.

3.2.3 Vibration Descriptors

Vibration levels are usually expressed as a single-number measure of vibration magnitude in terms of velocity or acceleration, which describes the severity of the vibration without the frequency variable. The peak particle velocity (PPV) is defined as the maximum instantaneous positive or negative peak of the vibration signal, usually measured in inches per second. Caltrans has developed Transportation and Construction Vibration Guidance Manual, which correlated human response to various vibration levels, which is presented in Table 2.

Table 2
Human Response to Different Levels of Groundborne Vibration

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

SOURCE: Caltrans 2013
NOTE: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

4.0 Applicable Standards and Guidelines

The study area is exposed to noise from vehicle traffic on area roadways, construction, and from other local noise sources. Federal noise standards include transportation-related noise sources related to interstate commerce (i.e., aircraft, trains, and trucks) for which there are not more stringent state standards. State noise standards are set for automobiles, light trucks, and motorcycles. Local noise standards and guidelines are set for industrial, commercial, and construction activities subject to local noise ordinances and General Plan policies and land use compatibility guidelines. The following is a detailed discussion of the applicable local regulations.

4.1 County of San Luis Obispo General Plan

The San Luis Obispo County Noise Element of the General Plan provides a policy framework for addressing potential noise impacts in the planning process. The Noise Element specifies compatibility guidelines for different categories of land use. Table 3 shows the ranges of noise exposure from transportation noise sources which are considered to be acceptable, conditionally acceptable, or unacceptable for the development of different land uses. Table 3 is used to determine whether mitigation is needed for development of land uses near major transportation noise sources. In areas where the noise environment is acceptable, new development may be permitted without requiring noise mitigation. For areas where the noise environment is conditionally acceptable, new development should be allowed only after noise mitigation has been incorporated into the design of the project to reduce noise exposure to the levels specified by the policies specified in Section 3.3 of the Noise Element. For areas where the noise environment is unacceptable, new development in compliance with the Noise Element policies is usually not feasible.

Table 3
County of San Luis Obispo General Plan Land Use Compatibility

Land Use Category	Exterior Noise Exposure Level (CNEL)				
		60	65	70	75
Residential (except temporary dwellings and residential accessory uses), Public Assembly and Entertainment (except meeting halls)	Acceptable	Conditionally Acceptable	Conditionally Acceptable	Unacceptable	Unacceptable
Bed and Breakfast Facilities, Hotels and Motels	Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Unacceptable
Schools – Preschool to Secondary, College and University, Specialized Education and Training, Libraries and Museums, Hospitals, Nursing and Personal Care, Meeting Halls, Churches	Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Unacceptable
Outdoor Sports and Recreation	Acceptable	Acceptable	Acceptable	Conditionally Acceptable	Unacceptable
Offices	Acceptable	Conditionally Acceptable	Conditionally Acceptable	Conditionally Acceptable	Unacceptable

(light shading)	Acceptable (no mitigation required)	Specified land use is satisfactory.
(medium shading)	Conditionally Acceptable (mitigation required)	Use should be permitted only after careful study and inclusion of mitigation measures as needed to satisfy policies of the Noise Element.
(dark shading)	Unacceptable (mitigation may not be feasible)	Development is usually not feasible in accordance with the goals of the Noise Element.

SOURCE: County of San Luis Obispo 1992
NOTE: This table indicates whether mitigation is required. See Table 4 for noise standard.

The following specific policies are adopted by San Luis Obispo County to accomplish the goals of the Noise Element:

Policy 3.3.1 The noise standards in this chapter represent maximum acceptable noise levels. New development should minimize noise exposure and noise generation.

Transportation Noise Sources:

Policy 3.3.2 New development of noise-sensitive land uses [. . .] shall not be permitted in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed 60 dB [day-night average sound level] L_{DN} or CNEL (70 L_{DN} or CNEL for outdoor sports and recreation) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified for the given land use in Table 3-1 [Table 4 of this report].

Policy 3.3.3 Noise created by new transportation noise sources, including roadway improvement projects, shall be mitigated so as not to exceed the levels specified in Table 3-1 [Table 4 of this report] within the outdoor activity areas are interior spaces of existing noise sensitive land uses.

Stationary Noise Sources:

Policy 3.3.4 New development of noise-sensitive land uses shall not be permitted where the noise level due to existing stationary noise sources will exceed the noise level standards of Table 3-2 [Table 5 of this report], unless effective noise mitigation measures have been incorporated into the design of the development to reduce noise exposure to or below the levels specified in Table 3-2 [Table 5 of this report].

Policy 3.3.5 Noise created by new proposed stationary noise sources or existing stationary noise sources which undergo modifications that may increase noise levels shall be mitigated as follows and shall be the responsibility of the developer of the stationary noise source:

a) Noise from agricultural operations conducted in accordance with accepted standards and practices is not required to be mitigated.

b) Noise levels shall be reduced to or below the noise level standards in Table 3-2 [Table 5 of this report] where the stationary noise source will expose an existing noise-sensitive land use (which is listed in the Land Use element as an allowable use within its existing land use category) to noise levels which exceed the standards in Table 3-2 [Table 5 of this report]. When the affected noise-sensitive land use is Outdoor Sports and Recreation, the noise level standards in Table 3-2 [Table 5 of this report] shall be increased by 10 dB.

c) Noise levels shall be reduced to or below the noise level standards in Table 3-2 [Table 5 of this report] where the stationary noise source will expose vacant land in the Agriculture, Rural Lands, Residential rural, Residential Suburban, Residential Single-Family, Residential Multi-Family, Recreation, Office and Professional, and Commercial Retail land use categories to noise levels which exceed the standards in Table 3-2 [Table 5 of this report].
(. . .)
This policy may be waived when the Director of Planning and Building determines that such vacant land is not likely to be developed with a noise sensitive land use.
(. . .)

Existing and Cumulative Noise Impacts:

Policy 3.3.6 San Luis Obispo County shall consider implementing mitigation measures where existing noise levels produce significant noise impacts to noise-sensitive land uses or where new development may result in cumulative increases of noise upon noise-sensitive land uses.

Table 4
Maximum Allowable Noise Exposure – Transportation Noise Sources

Land Use Category	Outdoor Activity Areas[1]	Interior Spaces	
	L_{DN}/CNEL, dB	L_{DN}/CNEL, dB	L_{eq} dB[2]
Residential (except temporary dwellings and residential accessory uses), Public Assembly and Entertainment (except meeting halls)	60[3]	45	--
Bed and Breakfast Facilities, Hotels and Motels	60[3]	45	--
Hospitals, Nursing and Personal Care	60[3]	45	--
Public Assembly and Entertainment (except Meeting Halls)	--	--	35
Offices	60[3]	--	45
Churches, Meeting Halls	--	--	45
Schools – Preschool to Secondary, College and University, Specialized Education and Training, Libraries and Museums	--	--	45
Outdoor Sports and Recreation	70	--	--

SOURCE: County of San Luis Obispo 1992
[1]Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use.
[2]As determined for a typical worst-case hour during periods of use.
[3]For other than residential uses, where an outdoor activity area is not proposed, the standard shall not apply. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{DN}/CNEL, [use] may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Table 5 Maximum Allowable Noise Exposure – Stationary Noise Sources[1]		
	Daytime (7 a.m. to 10 p.m.)	Nighttime[2] (10 p.m. to 7 a.m.)
Hourly L_{eq}, dB	50	45
Maximum level, dB	70	65
Maximum level, dB-Impulsive Noise	65	60
SOURCE: County Of San Luis Obispo 1992 [1]As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receiver side of noise barriers or other property line noise mitigation measures. [2]Applies only where the receiving land use operates or is occupied during nighttime hours.		

4.2 County of San Luis Obispo Code

Sections 23.06.044 through 23.06.050 of the County's Code establish standards for acceptable exterior and interior noise levels. These standards are intended to protect persons from excessive noise levels. Exterior and interior noise level standards are summarized in Table 6. The exterior noise levels standards in the County Code are the same as the stationary source noise standards in the General Plan (see Table 5). The noise level limits in Table 6 are applicable for noise-sensitive land uses. As stated in Section 23.06.044 and the General Plan, when the receiving noise-sensitive land use is outdoor sports and recreation, the exterior noise level standards shall be increased by 10 dB. Additionally, in the event that the measured ambient noise level exceeds the applicable exterior/interior noise level standards, the applicable exterior/interior standard shall be the ambient noise level plus 1 dB.

Table 6 County of San Luis Obispo Code Exterior/Interior Noise Level Standards		
	Daytime (7 a.m. to 10 p.m.) (exterior/interior)	Nighttime (10 p.m. to 7 a.m.) (exterior/interior)
Hourly L_{eq}, dB	50/40	45/35
Maximum level, dB	70/60	65/55
SOURCE: County of San Luis Obispo Code Sections 23.06.044 and 23.06.046		

The standards of Sections 23.06.044 through 23.06.050 do not apply to noise sources associated with construction, provided such activities do not take place before 7 a.m. or after 9 p.m. any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday.

4.3 California Code of Regulations

4.3.1 Noise Insulation Standards

Interior noise levels for habitable room are regulated also by Title 24 of the California Code of Regulations (CCR), California Noise Insulation Standards. Title 24, Part 2, Chapter 12, Section 1207 represents the regulatory requirements for interior noise for all new construction in California. Section 1207.1 identifies the applicability of the section. Section 1207.4, which was added as an amendment on July 2015, states that "interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either the day-night average sound level (L_{dn}) or the community noise equivalent level (CNEL), consistent with the noise element of the local general plan." Thus, for the County of San Luis Obispo the limit is 45 CNEL. A habitable room in a building is used for living, sleeping, eating or cooking. Bathrooms, closets, hallways, utility spaces, and similar areas are not considered habitable spaces.

4.3.2 California Green Building Standards Code – Environmental Comfort

Part 11 of Title 24 (California Green Building Standards Code) provides mandatory measures for residential and non-residential buildings. Section 5.507, Environmental Comfort, addresses interior noise control in non-residential buildings. This section provides the minimum Sound Transmission Class (STC) and Outdoor–Indoor Sound Transmission Class (OITC) for wall, roof–ceiling assemblies, and windows for buildings located within the 65 CNEL contour of an airport, freeway, expressway, railroad, industrial source, or fixed guideway source as determined by the Noise Element of the General Plan. Buildings shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly average equivalent level of 50 dB(A) L_{eq}. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition, or alteration project to mitigate sound migration to the interior. An acoustical analysis documenting complying interior sound levels is required to be prepared by personnel approved by the architect or engineer of record.

4.4 Vibration

Sections 23.06.060 and 23.06.062 of the County's Code address vibration. "Any land use within one-half mile of an urban or village reserve line is to be operated to not produce detrimental earth-borne vibrations perceptible" at or beyond any lot line of a residential, office and professional, recreation, and commercial use, or at or beyond the boundary of any industrial use. These vibration guidelines are not applicable to construction that occurs between 7 a.m. and 9 p.m.

The County's Code does not define the level of "detrimental earth-borne vibrations." Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of groundborne noise and vibration. Guidelines from the FTA and Caltrans serve as a useful tool to evaluate vibration impacts. Caltrans guidelines recommend that a standard of 0.2 inch per second PPV not be exceeded for the protection of normal residential buildings and that 0.08 inch per second PPV not be exceeded for the protection of old or historically significant structures (Caltrans 2004). With respect to human response within residential uses (i.e., annoyance, sleep disruption), FTA recommends a maximum acceptable vibration standard of 80 vibration decibels (VdB) (FTA 2006).

5.0 Existing Conditions

5.1 Noise Measurements

As part of this assessment, ambient noise levels were measured in the planning area to provide a characterization of the variability of noise and to assist in determining constraints and opportunities for future development. Eight 15-minute and three 30-minute measurements for a total of eleven daytime noise level measurements were conducted throughout the study area. Noise measurements were taken with a Larson-Davis LxT Type 1 Integrating Sound Level Meters, serial number 3897. The following parameters were used:

Filter:	A-weighted
Response:	Slow
Time History Period:	5 seconds
Height of Instrument:	5 feet above ground level

Each measurement location is shown in Figure 4. A summary of the measurements is provided in Table 7, and traffic counts taken during measurements are summarized in Table 8. Noise measurement data are contained in Attachment 1. Based on the measurement data, daytime noise levels in the planning area are typical of an urban environment. Each measurement location and noise source observed during the measurements is discussed below.

Table 7
Noise Measurements

ID	Location	Date	Time	L_{eq}
1	Los Osos Valley Road near eastern City boundary	2/16/2016	9:49 a.m.–10:04 a.m.	66.2
2	Los Osos Valley Road near commercial uses	2/2/2016	2:52 p.m.–3:07 p.m.	64.3
3	Pecho Valley Road near western City boundary	2/16/2016	2:04 p.m.–2:19 p.m.	60.5
4	South Bay Boulevard south of school/mixed-use area	2/16/2016	4:36 p.m.–4:51 p.m.	63.0
5	9th Street, representative of a collector	2/16/2016	10:57 a.m.–11:27 a.m.	58.0
6	Baywood commercial area	2/2/2016	9:30 a.m.–10:00 a.m.	61.9
7	Midtown/Morrow Shores mixed-use areas (Los Osos Valley Road)	2/16/2016	1:10 p.m.–1:25 p.m.	64.2
8	Santa Ysabel Avenue	2/16/2016	3:31 p.m.–4:01 p.m.	57.7
9	Baywood Elementary School (11th Street & Santa Maria Avenue)	2/2/2016	11:23 a.m.–11:38 a.m.	54.1
10	Monarch Grove Elementary School (Los Osos Valley Road)	2/2/2016	12:31 p.m.–12:46 p.m.	59.6
11	Los Osos Valley Road/South Bay Boulevard intersection	2/2/2016	1:59 p.m.–2:14 p.m.	62.2

Image Source: USDA FSA NAIP (flown June 2014)

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FIGURE 4

Noise Measurement Locations

Table 7 Noise Measurements				
ID	Location	Date	Time	L_{eq}
1	Los Osos Valley Road near eastern City boundary	2/16/2016	9:49 a.m.–10:04 a.m.	66.2
2	Los Osos Valley Road near commercial uses	2/2/2016	2:52 p.m.–3:07 p.m.	64.3
3	Pecho Valley Road near western City boundary	2/16/2016	2:04 p.m.–2:19 p.m.	60.5
4	South Bay Boulevard south of school/mixed-use area	2/16/2016	4:36 p.m.–4:51 p.m.	63.0
5	9th Street, representative of a collector	2/16/2016	10:57 a.m.–11:27 a.m.	58.0
6	Baywood commercial area	2/2/2016	9:30 a.m.–10:00 a.m.	61.9
7	Midtown/Morrow Shores mixed-use areas (Los Osos Valley Road)	2/16/2016	1:10 p.m.–1:25 p.m.	64.2
8	Santa Ysabel Avenue	2/16/2016	3:31 p.m.–4:01 p.m.	57.7
9	Baywood Elementary School (11th Street & Santa Maria Avenue)	2/2/2016	11:23 a.m.–11:38 a.m.	54.1
10	Monarch Grove Elementary School (Los Osos Valley Road)	2/2/2016	12:31 p.m.–12:46 p.m.	59.6
11	Los Osos Valley Road/South Bay Boulevard intersection	2/2/2016	1:59 p.m.–2:14 p.m.	62.2

Measurement 1 was taken adjacent to Los Osos Valley Road near the eastern boundary of Los Osos. The main source of noise at this measurement location was vehicle traffic on Los Osos Valley Road. Traffic volumes on Los Osos Valley Road were counted and the results are shown in Table 8. The average measured noise level was 66.2 dB(A) $L_{eq.}$

Measurement 2 was taken adjacent to Los Osos Valley Road near commercial uses on Fairchild Way, west of Celia's Garden Cafe. The main source of noise at this measurement location was vehicle traffic on Los Osos Valley Road. Other noise sources included vehicle traffic on Fairchild Way, exiting and entering the adjacent commercial plazas. Traffic volumes on Los Osos Valley Road were counted and the results are shown in Table 8. The average measured noise level was 64.3 dB(A) L_{eq}.

Measurement 3 was taken adjacent to Pecho Valley Road near western city limits, 50 feet south of the intersection with Seascape Place. The main source of noise at this measurement location was vehicle traffic on Pecho Valley Road. Traffic volumes on Pecho Valley Road were counted and the results are shown in Table 8. The average measured noise level was 60.5 dB(A) $L_{eq.}$

Measurement 4 was taken adjacent to South Bay Boulevard south of the school and mixed-use area of the city, 50 feet east from the intersection of Pismo Avenue and South Bay Boulevard. The main source of noise at this measurement location was vehicle traffic on South Bay Boulevard, with occasional vehicles entering Pismo Avenue to access sports and recreational fields. Traffic volumes on South Bay Boulevard were counted and the results are shown in Table 8. The average measured noise level was 63.0 dB(A) $L_{eq.}$

Measurement 5 was taken adjacent to 9th Street at the intersection with Nipomo Avenue. The main source of noise at this measurement location was vehicle traffic on 9th Street. Other sources of noise included distant construction and occasional activities associated with the adjacent residences (car doors closing, walkers, conversations) approximately 200 to 300 feet away, and vehicles entering and exiting Nipomo Avenue approximately 50 feet away. Traffic volumes on 9th Street were counted and the results are shown in Table 8. The average measured noise level was 58.0 dB(A) L_{eq}.

Measurement 6 was taken in the Baywood commercial area, to the west of 2nd Street on Santa Maria Avenue across Merrimaker and the Baywood Liquor Market. The measurement was taken approximately 50 feet west of Santa Maria Avenue. The main source of noise at this measurement location was vehicle traffic on Santa Maria Avenue. During the measurement, one southbound County sidewalk cleaner pass-by occurred. This pass-by resulted in noise levels of up to 77.7 dB(A). Other sources of noise included street parking activities on 2nd Street. Traffic volumes on Santa Maria Avenue were counted and the results are shown in Table 8. The average measured noise level was 61.9 dB(A) L_{eq}.

Measurement 7 was taken in the Midtown/Morrow Shores mixed-use area adjacent to Los Osos Valley Road, approximately 50 feet south of Palisades Avenue and across from the Los Osos Baywood Park Chamber of Commerce building. The main source of noise at this measurement location was vehicle traffic on Los Osos Valley Road. Other sources of noise included vehicle traffic on Palisades Avenue. Traffic volumes on Los Osos Valley Road during were counted and the results are shown in Table 8. This included vehicles queueing at red lights and vehicles accelerating when lights turned green. The average measured noise level was 64.2dB(A) L_{eq}.

Measurement 8 was taken adjacent to Santa Ysabel Avenue, approximately 50 feet south of the intersection of 9th Street and Santa Ysabel Avenue. The main source of noise at this measurement location was vehicle traffic on Santa Ysabel Avenue. Traffic volumes on Santa Ysabel Avenue were counted and the results are shown in Table 8. The average measured noise level was 57.7 dB(A) L_{eq}.

Measurement 9 was taken near Baywood Elementary School at the intersection of 11th Street and Santa Maria Avenue. The main source of noise was vehicle traffic on 11th Street. Traffic volumes on 11th Street were counted and the results are shown in Table 8. The average measured noise level was 54.1 dB(A) L_{eq}.

Measurement 10 was taken near Monarch Grove Elementary School on Los Osos Valley Road, approximately 50 feet north of Doris Avenue. The main source of noise at this measurement location was vehicle traffic on Los Osos Valley Road. Other sources of noise included occasional vehicle traffic on Doris Avenue. Traffic volumes on Los Osos Valley Road were counted and the results are shown in Table 8. This included vehicles queueing at red lights and vehicles accelerating when lights turned green. The average measured noise level was 59.6 dB(A) L_{eq}.

Measurement 11 was taken on the sidewalk south of the intersection of South Bay Boulevard and Los Osos Valley Road. The main source of noise at this measurement location was vehicle traffic on Los Osos Valley Road. Other sources of noise included vehicle traffic on South Bay Boulevard. Traffic volumes on Los Osos Valley Road were counted and the results are shown in Table 8. This included vehicles queueing at red lights and vehicles accelerating when lights turned green. The average measured noise level was 62.2 dB(A) L_{eq}.

Table 8
15-minute and 30-minute Traffic Counts

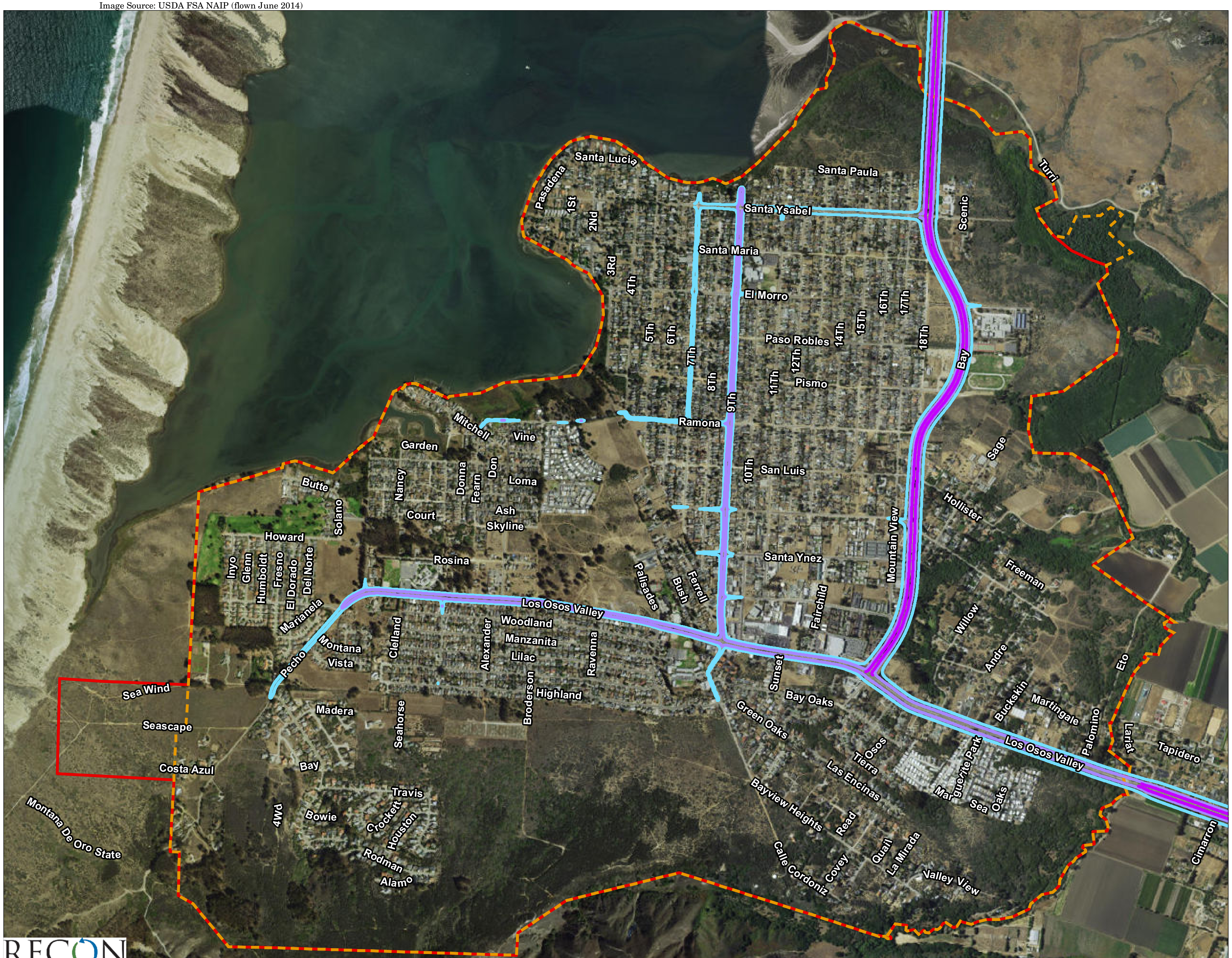
Measurement	Roadway	Duration (Minutes)	Direction	Autos	Medium Trucks	Heavy Trucks	Buses	Motor-cycles
1	Los Osos Valley Road	15	Westbound	136	6	0	0	0
			Eastbound	79	4	0	0	2
2	Los Osos Valley Road	15	Westbound	181	6	0	0	0
			Eastbound	161	1	1	3	1
3	Pecho Valley Road	15	Northbound	24	0	0	0	0
			Southbound	20	1	0	0	3
4	South Bay Boulevard	15	Northbound	143	4	0	1	1
			Southbound	136	0	2	1	0
5	9th Street	30	Northbound	82	3	0	1	0
			Southbound	79	0	0	0	2
6	Santa Maria Avenue	30	Northbound	21	0	0	1	0
			Southbound	24	3	0	0	0
7	Los Osos Valley Road	15	Westbound	98	4	0	1	2
			Eastbound	110	8	0	0	1
8	Santa Ysabel Avenue	30	Westbound	99	0	0	0	2
			Eastbound	61	0	0	0	0
9	11th Street	15	Northbound	15	0	0	0	0
			Southbound	11	0	0	3	0
10	Los Osos Valley Road	15	Westbound	65	2	0	0	0
			Eastbound	59	1	1	0	0
11	Los Osos Valley Road	15	Westbound	127	2	0	3	0
			Eastbound	114	3	0	1	0

5.2 Existing Vehicle Traffic Noise Contours

The roads generating the greatest noise level in the LOCP area are Los Osos Valley Road and South Bay Boulevard. Figure 5 shows the existing vehicle traffic noise contours for the LOCP area. The noise contour distances represent the predicted noise level for each roadway without the attenuating effects of noise barriers, structures, topography, or dense vegetation. As intervening structures, topography, and dense vegetation would affect noise exposure at a particular location, the noise contours should not be considered site-specific but are rather guides to determine when detailed acoustic analysis should be undertaken.

As shown, Los Osos Valley Road and South Bay Boulevard generate the loudest noise levels in the community. Existing noise levels exceed 60 CNEL adjacent to Los Osos Valley Road and South Bay Boulevard. The 70 CNEL contours for Los Osos Valley Road and South Bay Boulevard fall just at the edge of the right-of-way, and existing land uses are not exposed to noise levels 70 CNEL or greater. SoundPLAN data for the existing vehicle traffic noise contours is provided in Attachment 2.

Image Source: USDA FSA NAIP (flown June 2014)



Existing URL
Proposed URL
Existing Vehicle Noise
60 CNEL
65 CNEL
70 CNEL

0 Feet 1,500

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FIGURE 5
Existing Vehicle Traffic
Noise Contours

6.0 Analysis Methodology

6.1 Vehicle Traffic Noise

Traffic noise occurs adjacent to every roadway and is directly related to the distance from the roadway, traffic volume, speed, and vehicle mix.

Existing and future traffic volumes and posted speeds were obtained from the traffic study prepared for the LOCP (Omni Means 2016). A vehicle classification mix of 94.5 percent automobiles, 3.0 percent medium trucks, 0.5 percent heavy trucks, 1.0 percent buses, and 1.0 percent motorcycles was developed for modeling purposes. Based on the field traffic counts (see Section 5.1), this is a conservative vehicle mix because it accounts for more trucks and buses than were observed during the measurements. Peak hour traffic volumes were estimated at 10 percent of the total average daily traffic (ADT). Typically, the predicted CNEL and the peak daytime hourly L_{eq} calculated are approximately equal.

Traffic volumes are summarized in Table 9.

Table 9
Traffic Volumes

Roadway	Segment	Existing ADT	Adopted Estero Area Plan Future (Year 2035) ADT	Proposed LOCP Future (Year 2035) ADT
Los Osos Valley Road	east of Los Osos Creek	15,558	22,718	21,718
Los Osos Valley Road	east of South Bay Boulevard	15,719	17,929	21,339
Los Osos Valley Road	west of South Bay Boulevard	14,743	19,313	18,933
Los Osos Valley Road	east of 9th Street	14,357	18,637	16,627
Los Osos Valley Road	west of Bush Drive	12,100	17,560	14,700
Los Osos Valley Road	west of Palisades Avenue	9,282	10,712	10,122
Los Osos Valley Road	east of Doris Avenue	8,190	10,610	9,900
Los Osos Valley Road	east of Pecho Drive	7,740	10,160	9,720
South Bay Boulevard	north of Los Osos Valley Road	11,443	16,425	20,725
South Bay Boulevard	south of Santa Ysabel Avenue	9,998	19,088	17,108
South Bay Boulevard	north of Santa Ysabel Avenue	14,145	19,073	18,103
Pecho Valley Road	south of Monarch Lane	3,220	4,240	5,050
Pecho Valley Road	south of Rodman Drive	1,206	2,236	2,256
Los Olivos Avenue	west of 10th Street	1,860	510	2,930
Santa Ynez Avenue	west of 11th Street	3,310	3,630	4,090
Nipomo Avenue	west of South Bay Boulevard	2,520	2,970	4,160
Ramona Avenue	west of 9th Street	4,080	8,000	5,490
Ramona Avenue	west of 4th Street	2,490	3,630	2,570
El Moro Avenue	east of South Bay Boulevard	1,020	1,020	860
El Moro Avenue	west of 11th Street	1,460	3,620	2,690
El Moro Avenue	west of 7th Street	1,570	3,650	3,260
Santa Ysabel Avenue	east of South Bay Boulevard	280	520	390
Santa Ysabel Avenue	east of 11th Street	6,954	3,170	4,480
Santa Ysabel Avenue	west of 11th Street	3,700	2,770	3,230
Santa Ysabel Avenue	east of 7th Street	3,960	2,950	3,450
Santa Ysabel Avenue	west of 7th Street	2,410	1,410	1,740
Pecho Road	north of Los Osos Valley Road	1,173	1,553	1,073
Doris Avenue	south of Los Osos Valley Road	1,940	1,800	1,820

Table 9 Traffic Volumes				
Roadway	Segment	Existing ADT	Adopted Estero Area Plan Future (Year 2035) ADT	Proposed LOCP Future (Year 2035) ADT
Doris Avenue	north of Los Osos Valley Road	190	370	230
Ravenna Avenue	south of Los Osos Valley Road	520	610	610
7th Street	north of Ramona Avenue	2,320	3,450	3,480
Bayview Heights Drive	south of Los Osos Valley Road	2,270	5,510	5,770
9th Street	north of Los Osos Valley Road	8,090	6,440	7,270
11th Street	south of Santa Ysabel Avenue	1,900	430	1,240
SOURCE: Omni Means 2016				

Noise generated by existing and future traffic was modeled using SoundPLAN. The SoundPLAN program (Navcon Engineering 2015) uses the Federal Highway Administration's Traffic Noise Model algorithms and reference levels to calculate noise level contours. The model uses various input parameters, such as projected hourly average traffic rates; vehicle mix, distribution, and speed; roadway lengths and gradients; and shielding provided by intervening terrain, barriers, and structures. Roadways were input into the model using three-dimensional coordinates. Flat-site conditions were modeled. Resulting noise contours represent a worst-case scenario, as topography, buildings, and other obstructions along the roadways would shield distant receivers from the traffic noise.

6.2 Stationary Sources of Noise

Stationary sources of noise include activities associated with a given land use. The LOCP area includes multiple land uses, including residential, commercial, and mixed-use land uses as well as recreational and institutional uses. Various land uses include on-site stationary noise sources, such as rooftop heating, ventilation, and air conditioning (HVAC) equipment; mechanical equipment; emergency electrical generators; parking lot activities; loading dock operations; and recreation activities. Stationary noise is considered a "point source" and attenuates over distance at a rate of 6 dB(A) for each doubling of distance. The exact location and nature of future stationary noise sources is not known at this time and therefore calculation of anticipated noise impacts would be speculative. Impacts are assessed in this analysis by identifying potential types of stationary sources and potential locations where land use and noise conflicts may occur. Potential impacts are address by identifying applicable regulations and a mitigation framework for addressing identified impacts.

6.3 Construction Noise

Construction noise has the potential to result in temporary ambient noise increase due to construction activities. Construction noise is generated by diesel-powered construction equipment used for site preparation and grading, removal of existing structures and pavement, loading, unloading, and placing materials and paving. Diesel engine-driven trucks also bring materials to the site and remove the spoils from excavation.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., demolition/land clearing, grading and excavation, building erection). Construction noise in any one particular area would be short-term and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and use of power tools. Noise would also be generated by construction equipment, including earthmovers, material handlers, and portable generators, and could reach high levels for brief periods.

Table 10 summarizes typical construction equipment noise levels.

Table 10
Typical Construction Equipment Noise Levels

Equipment	Noise Level at 50 Feet [dB(A) L_{eq}]
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Crane, Derrick	88
Dozer	85
Grader	85
Jack Hammer	88
Loader	85
Paver	89
Pump	76
Roller	74
Scraper	89
Truck	88
SOURCE: FTA 2006.	

During excavating, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Although maximum noise levels from individual pieces of equipment may be 85 to 90 dB(A) at a distance of 50 feet, during most construction activities, hourly average noise levels from the loudest pieces of equipment working simultaneously would be 82 dB(A) L_{eq} at 50 feet from the center of construction activity. The loudest construction phase is typically grading as it involves the greatest amount of the largest equipment. Construction equipment noise is considered a “point source” and attenuates over distance at a rate of 6 dB(A) for each doubling of distance. Thus, a noise level of 85 dB(A) at 50 feet would be 79 dB(A) at 100 feet and 73 dB(A) at 200 feet from the source.

6.4 Vibration

No operational components of future development consistent with the LOCP would include significant groundborne noise or vibration sources. Potential vibration could result from construction. Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Construction activities that generate excessive vibrations are generally limited to blasting, pavement breaking, and impact pile driving. Representative vibration source levels were obtained from the FTA (2006). Vibration perception would occur at structures, as people do not perceive vibrations without vibrating structures. The ground vibration levels associated with various types of construction equipment are summarized in Table 11. Based on the human response to groundborne vibrations, a groundborne vibration level that is distinctly perceptible of 0.04 PPV at a structure, is used for assessing groundborne vibrations from general construction activities.

Table 11
Representative Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet (in/sec)
Pile Drive (impacts)	Upper range – 1.518 Typical – 0.644
Pile Driver (sonic)	Upper range – 0.734 Typical – 0.170
Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003
SOURCE: FTA 2006.	

7.0 Future Acoustical Environment and Impacts

7.1 Increase in Ambient Noise

Existing ambient noise levels in the LOCP area are dominated by vehicle traffic noise, particularly from Los Osos Valley Road and South Bay Boulevard. Vehicular traffic on roadways the corresponding noise levels would increase due to future development consistent with the LOCP. Increases in traffic noise would potentially degrade the existing noise environment, especially with respect to noise-sensitive receivers. Policy 3.3.6 of the County's General Plan states that the County shall consider implementing mitigation measures where new development may result in cumulative increases of noise upon noise-sensitive land uses. A significant impact would occur if implementation of the LOCP resulted in or created a substantial increase in the existing ambient noise levels.

A 3 dB(A) increase in noise is a barely perceivable increase to the human ear. For reference, a doubling of the energy of a noise source, such as doubling of traffic volumes on a roadway, would result in a 3 dB(A) increase in noise levels (Caltrans 2013). As stated in General Plan Policy 3.3.3, noise created by new transportation noise sources shall be mitigated so as not to exceed the levels specified in Table 4. Based on these concepts of perception and compatibility, if the LOCP would result in a noise increase of 3 dB(A) or more and would result in noise levels that exceed the compatibility limits (see Table 4), then the impact would be considered significant.

Existing and future noise levels were modeled at 50 feet from each roadway segment centerline using SoundPLAN. Table 12 summarizes the existing and future (year 2035) noise levels adjacent to area roadways and the associated increase in noise.

Table 12
Increase in Ambient Noise

Roadway	Segment	Existing Noise Level (CNEL)	Proposed LOCP Future (Year 2035) Noise Level (CNEL)	Change in dB
Los Osos Valley Road	east of Los Osos Creek	67	69	1.5
Los Osos Valley Road	east of South Bay Boulevard	65	66	1.3
Los Osos Valley Road	west of South Bay Boulevard	62	63	1.1
Los Osos Valley Road	east of 9th Street	62	63	0.7
Los Osos Valley Road	west of Bush Drive	61	62	0.9
Los Osos Valley Road	west of Palisades Avenue	60	62	1.7
Los Osos Valley Road	east of Doris Avenue	61	62	0.9
Los Osos Valley Road	east of Pecho Drive	61	62	1.0
South Bay Boulevard	north of Los Osos Valley Road	66	69	2.6
South Bay Boulevard	south of Santa Ysabel Avenue	65	68	2.4
South Bay Boulevard	north of Santa Ysabel Avenue	67	68	1.1
Pecho Valley Road	south of Monarch Lane	56	59	**3.2**
Pecho Valley Road	south of Rodman Drive	51	56	**4.8**
Los Olivos Avenue	west of 10th Street	54	56	2.3
Santa Ynez Avenue	west of 11th Street	54	57	2.8
Nipomo Avenue	west of South Bay Boulevard	52	57	**4.4**
Ramona Avenue	west of 9th Street	54	58	**3.8**
Ramona Avenue	west of 4th Street	51	55	**3.1**
El Moro Avenue	east of South Bay Boulevard	51	52	1.6
El Moro Avenue	west of 11th Street	52	55	**3.6**
El Moro Avenue	west of 7th Street	51	56	**5.1**
Santa Ysabel Avenue	east of South Bay Boulevard	49	50	1.4
Santa Ysabel Avenue	east of 11th Street	59	57	-1.9
Santa Ysabel Avenue	west of 11th Street	57	56	-0.6
Santa Ysabel Avenue	east of 7th Street	57	56	-0.5
Santa Ysabel Avenue	west of 7th Street	54	53	-1.0
Pecho Road	north of Los Osos Valley Road	48	51	2.7
Doris Avenue	south of Los Osos Valley Road	51	53	2.2
Doris Avenue	north of Los Osos Valley Road	43	45	2.5
Ravenna Avenue	south of Los Osos Valley Road	47	50	2.5
7th Street	north of Ramona Avenue	54	56	1.7
Bayview Heights Drive	south of Los Osos Valley Road	53	58	**5.5**
9th Street	north of Los Osos Valley Road	59	59	-0.4
11th Street	south of Santa Ysabel Avenue	54	52	-1.4
Bold = Increase greater than 3 Db				

As shown, the increase in ambient noise would be greater than 3 dB(A) adjacent to the following eight roadway segments: Pecho Valley Road south of Monarch Lane, Pecho Valley Road south of Rodman Drive, Nipomo Avenue west of South Bay Boulevard, Ramona Avenue west of 9th Street, Ramona Avenue west of 4th Street, El Moro Avenue west of 11th

Street, El Moro Avenue west of 7th Street, and Bayview Heights Drive south of Los Osos Boulevard. There are residential uses located adjacent to these roadway segments. However, exterior noise levels adjacent to these roadway segments are not projected to exceed 60 CNEL. Existing and future noise levels would not exceed the compatibility standard of 60 CNEL; therefore, the increase in ambient noise would be less than significant.

7.2 Noise/Land Use Compatibility

The maximum allowable noise exposure from transportation sources are summarized in Table 4. As discussed in Policy 3.3.2, new development of noise-sensitive land uses shall not be permitted in areas where transportation noise sources exceed 60 CNEL (70 CNEL for outdoor sports and recreation) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified in Table 4.

Noise contours for existing and future conditions were modeled using measured and projected traffic volumes on major roadways within the LOCP area. Noise contours are based on a flat site conditions with no intervening barriers or obstructions (worst-case analysis). This is considered conservative, as the noise levels at any specific location would depend upon not only the source noise level but also the nature of the path from the source to the receiver. Buildings, walls, dense vegetation, and other barriers would block the direct line of sight and reduce noise levels at the receiver. As an example, a first row of buildings would reduce traffic noise levels at receivers by 3 to 5 dB(A) behind those structures depending on the building-to-gap ratio. Large continuous structures can provide substantially greater attenuation of traffic noise.

Figure 6 shows the future vehicle traffic noise contours for the LOCP area. SoundPLAN data for the future vehicle traffic noise contours is provided in Attachment 3.

As shown in Figure 6, vehicle traffic noise levels throughout most of the LOCP area are not projected to exceed 60 CNEL. Noise levels have the potential to exceed 60 CNEL adjacent to Los Osos Valley Road and South Bay Boulevard.

As also shown in Figure 6, the 70 CNEL contours lie just beyond the right-of-way for Los Osos Valley Road and South Bay Boulevard, and only land uses located immediately adjacent to these roadways would be exposed to noise levels in excess of 70 CNEL.

Image Source: USDA FSA NAIP (flown June 2014)

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Existing URL

Proposed URL

Future Vehicle Noise

60 CNEL

65 CNEL

70 CNEL

0 Feet 1,500

FIGURE 6
Future Vehicle
Traffic Noise Contours

Policies 3.3.1 and 3.3.2 set standards for the siting of sensitive land uses. New development of noise-sensitive land uses would not be permitted in areas exposed to transportation noise levels which exceed 60 CNEL (70 CNEL for outdoor sports and recreation) unless the project design includes effective mitigation measures to reduce noise in outdoor activity areas and interior spaces to or below the levels specified in Table 4. Noise sensitive land uses located adjacent to Los Osos Valley Road and South Bay Boulevard would have the potential to be exposed to exterior noise levels that exceed County standards (60 CNEL). As shown in Figure 6, for all other roadways, the 60 CNEL contour would be entirely within or right at the edge of the right-of-way. Site-specific exterior noise analyses that demonstrate that the project would not place sensitive receivers in locations where the exterior existing or future noise levels would exceed the noise compatibility guidelines of the General Plan would be required. Noise control measures such as site design, sound walls, and other measures could reduce noise to acceptable levels. Such measures cannot practically be designed at this time, because no specific projects have been designed and proposed at this time. Exterior noise impacts adjacent to Los Osos Valley Road and South Bay Boulevard would be significant.

Interior noise impacts for all projects would be less than significant because applicants must demonstrate compliance with the current interior noise standards (45 CNEL) through submission and approval of a Title 24 Compliance Report.

7.3 Stationary Sources of Noise

A significant impact would occur if implementation of the LOCP resulted in the exposure of people to noise levels that exceed limits established in the County's General Plan and County Code. These limits apply to existing uses, but will also apply to future uses and are used for evaluating potential impacts of future on-site generated noise levels.

As discussed previously, stationary sources of noise include activities associated with a given land use. The noise sources associated with future residential development proposed under the LOCP would be those typical of any residential development (vehicles arriving and leaving, children at play and landscape maintenance machinery). None of these noise sources are anticipated to violate the County's Code or result in a substantial permanent increase in existing noise levels. However, HVAC equipment with exterior fans or condensers mounted on the ground or roofs have the potential to produce noise in excess of the County's limits. It is not known at this program level which manufacturer, brand, or model of unit or units would be selected for any project associated with the LOCP.

The noise sources associated with future commercial and retail development proposed under the LOCP include HVAC, commercial-related mechanical equipment, loading docks, deliveries, trash-hauling activities and customer and employee use of commercial facilities. The type of activities and equipment that would generate noise at commercial uses is not known at this program level.

County policies in the General Plan and regulations in the County Code are in place to control noise and reduce on-site generated noise impacts between various land uses.

However, without detailed operational data, it cannot be verified that future projects implemented in accordance with the LOCP would be capable of reducing noise levels to comply with County standards. Impacts would be significant at the project-level.

7.4 Construction

The LOCP does not propose the construction of new development; rather it provides capacity for future development. Future buildout could potentially result in temporary ambient noise increase due to construction activities. Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction. The exact location of construction activities is not known at this time. Impacts are assessed in this analysis by identifying potential construction noise levels and buffer distances at which construction noise levels would be less than applicable standards.

The County limits construction noise impacts by limiting construction to daytime hours. As discussed in Section 4.2, the noise limit standards of Sections 23.06.044 through 23.06.050 do not apply to noise sources associated with construction, provided such activities do not take place before 7 a.m. or after 9 p.m. any day except Saturday or Sunday, or before 8 a.m. or after 5 p.m. on Saturday or Sunday. The County has not established noise level limits specific to construction. Many jurisdictions assess construction noise levels with respect to a 75 dB(A) L_{eq} or 75 dB(A) $L_{eq(8h)}$ noise level limit at residential uses. In the absence of an applicable threshold, this analysis assesses noise levels based on a 75 dB(A) L_{eq} noise level limit as assessed at residential uses.

As discussed previously, construction activities typically generate average noise levels of up to 82 dB(A) L_{eq} at 50 feet from the center of construction activity when assessing the loudest pieces of equipment working simultaneously. Actual noise levels would vary depending on the nature of the construction phase, including the duration of specific activities, nature of the equipment involved, location of the particular receiver, and nature of intervening barriers. Therefore, the use of 82 dB(A) L_{eq} at 50 feet is considered a conservative value. As indicated under methodology, construction activities are evaluated as point sources and noise from construction sites typically attenuate at a rate of 6 dB(A) for every doubling of the distance. Therefore, projects that include construction activities within 200 feet of a noise-sensitive receiver may potentially result in substantial temporary noise increases.

The location of future projects and construction activities that would occur as a result of future development consistent with the LOCP are not known at this time; thus, the LOCP may result in construction activities in close proximity to residential receivers. Although existing adjacent residences near construction sites would be exposed to construction noise levels that could be heard above ambient conditions, the exposure would be temporary and would cease at the end of construction. Additionally, construction activities would occur during the hours specified in the County's Code. However, temporary noise impacts to residential receivers located within 200 feet of construction activities would be potentially significant. It should be noted that this is a conceptual construction noise analysis based on standard construction practices. Actual construction noise levels may vary. The mitigation outlined in Section 8.4 would reduce these impacts to a level less than significant.

7.5 Vibration

The LOCP does not propose the construction of new development; rather, it provides capacity for future development. Future development would likely be located adjacent to existing structures. No operational components of the LOCP include significant groundborne noise or vibration sources and no significant vibrations sources currently exist, or are planned, in the LOCP area. Thus, no significant groundborne noise or vibration impacts would occur with the operation of future projects implemented under the LOCP.

Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction. Demolition for an individual site may last several weeks to months.

Ground vibrations in an outdoor environment are generally not perceptible (FTA 2006). The construction activities that generate excessive vibrations are blasting and impact pile driving. Projects implemented under the LOCP would be constructed using typical construction techniques; no blasting is contemplated. Heavy construction equipment (e.g., bulldozer and excavator) would generate a limited amount of groundborne vibration during construction activities at short distances away from the source, and would not be a significant source of excessive vibration. Based on the human response to groundborne vibrations, a groundborne vibration level that is distinctly perceptible of 0.04 PPV at a structure, is used for assessing groundborne vibrations from general construction activities. Using FTA's recommended procedure for applying a propagation adjustment to reference levels, vibration levels would exceed 0.04 PPV within approximately 50 feet of bulldozers and other heavy equipment. The use of equipment would most likely be limited to a few hours spread over several days during demolition/grading activities. Non-pile driving or foundation work construction phases that have the highest potential of producing vibration (such as jackhammering and other high power tools) would be intermittent and would only occur for short periods of time for any individual project site. Therefore, the project would not expose persons to excessive groundborne vibration, and as such, impacts would be less than significant.

8.0 Conclusions and Recommendations

8.1. Increase in Ambient Noise

The increase in ambient noise would be greater than 3 dB(A) adjacent to the following eight roadway segments: Pecho Valley Road south of Monarch Lane, Pecho Valley Road south of Rodman Drive, Nipomo Avenue west of South Bay Boulevard, Ramona Avenue west of 9th Street, Ramona Avenue west of 4th Street, El Moro Avenue west of 11th Street, El Moro Avenue west of 7th Street, and Bayview Heights Drive south of Los Osos Boulevard. There are residential uses located adjacent to these roadway segments. However, exterior noise levels adjacent to these roadway segments are not projected to exceed 60 CNEL. Existing and future noise levels would not exceed the compatibility standard of 60 CNEL, therefore, the increase in ambient noise would be less than significant.

8.2 Noise/Land Use Compatibility

Vehicle traffic noise levels throughout most of the LOCP area are not projected to exceed 60 CNEL. Noise levels have the potential to exceed 60 CNEL adjacent to Los Osos Valley Road and South Bay Boulevard. Exterior noise impacts to sensitive uses located in these areas would be potentially significant.

NOS-1: For any noise sensitive development proposed within projected 60 CNEL noise contours, a site-specific acoustical study shall be conducted. This study shall contain recommendations to mitigate any noise levels that exceed the County's standard of 60 CNEL. At the program level, the specific attenuation methods cannot be definitively determined. Noise reduction measure could include, but are not limited to, the following:

- Construction of a berm or wall;
- Design of individual homes such that structures block the line-of-sight from useable backyards to the noise source;
- For homes with backyards not blocked by intervening structures, backyard fencing of sufficient height to block line-of sight to the noise source; or
- Placement of exterior use areas and balconies away from the noise source, as applicable.

Plan Requirements and Timing. Acoustical studies shall be submitted for review and approved by Planning and Building prior to approval of building permits. The design of noise barriers and sensitive structures shall be examined by an approved noise consultant, to determine if they provide sufficient mitigation to comply with Noise Element standards related to outdoor noise exposure.

Monitoring. Planning and Building staff shall review and approve the required report prior to issuance of a Building Permit. Building inspectors shall make site inspections to assure implementation of approved plans.

8.3 Stationary Sources of Noise

Stationary sources of noise include activities associated with a given land use. Future on-site generated noise sources have the potential to exceed to property line noise levels limits established in the County's Code. Without detailed operational data, it cannot be verified that future projects implemented in accordance with the LOCP would be capable of reducing noise levels to comply with the County's Code property line standards. Impacts may be significant, and the following mitigation would be required.

NOS-2: Prior to the issuance of any permit for future development consistent with the LOCP, whereon residential development would be located adjacent to commercial or industrial uses, the County shall require site-specific noise studies to determine if on-site generated noise levels exceed the property line noise level limits in the County Code and to present appropriate mitigation measures, which may include, but are not limited to the following:

- Require the placement of loading and unloading areas so that commercial buildings shield nearby residential land uses from noise generated by loading dock and delivery activities. If necessary, additional sound barriers shall be constructed on the commercial sites to protect nearby noise sensitive uses and hours of delivery can be limited if determined as needed through the study.
- Require the placement of all commercial HVAC machinery to be placed within mechanical equipment rooms wherever possible.
- Require the provision of localized noise barriers or rooftop parapets around HVAC, cooling towers, and mechanical equipment so that line-of-sight to the noise source from the property line of the noise sensitive receivers is blocked.

8.4 Construction

Temporary noise impacts to residential receivers located within 200 feet of construction activities would be potentially significant. The following mitigation would be required.

NOS-3: Prior to the issuance of future construction permits, a Construction Noise Control Plan shall be submitted to the County for review and approval. The construction noise control plan can include, but is not limited to, the following:

- Ensure that construction equipment is properly muffled according to industry standards and is in good working condition.
- Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible.
- Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources.
- Use electric air compressors and similar power tools rather than diesel equipment, where feasible
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- Construction shall be limited to the hours of 7:00 A.M. to 7:00 P.M. Monday through Saturday. No construction is permitted on Sundays or legal holidays.

- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the County or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.
- Project developers shall require by contract specifications that heavily loaded trucks used during construction would be routed away from residential streets to the extent feasible. Contract specifications shall be included in construction documents, which shall be reviewed by the City prior to issuance of a grading permit.

8.5 Vibration

No operational components of future development consistent with the LOCP would include significant groundborne noise or vibration sources. Operational vibration impacts would be less than significant.

The construction activities that generate excessive vibrations are blasting and impact pile driving. Projects implemented under the LOCP would be constructed using typical construction techniques; no blasting is contemplated. Heavy construction equipment (e.g., bulldozer and excavator) would generate a limited amount of groundborne vibration during construction activities at short distances away from the source, and would not be a significant source of excessive vibration. Non-pile driving or foundation work construction phases that have the highest potential of producing vibration (such as jackhammering and other high power tools) would be intermittent and would only occur for short periods of time for any individual project site. Therefore, the project would not expose persons to excessive ground-borne vibration, and as such, impacts would be less than significant.

9.0 References Cited

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2004 Transportation- and Construction-Induced Vibration Guidance Manual. June. Accessed at: http://www.dot.ca.gov/hq/env/noise/pub/vibrationmanFINAL.pdf.

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2006 Transit Noise and Vibration Impact Assessment. Office of Planning and Environment. FTA-VA-90-1003-06. May 2006.

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2016 Los Osos Community Plan Update Draft Transportation Impact Analysis Report. Prepared for John F. Rickenbach Planning and Environmental Consulting. April 2016.

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1992 County of San Luis Obispo General Plan Noise Element. Resolution 92-227. Adopted May 5, 1992

ATTACHMENTS

ATTACHMENT 1

Noise Measurement Data

Measurement	Location	Measured Noise Level dB(A) Leq
1	Los Osos Valley Road near eastern City boundary	66.2
2	Los Osos Valley Road near commercial uses	64.3
3	Pecho Valley Road near western City boundary	60.5
4	South Bay Boulevard south of school/mixed-use area	63.0
5	9^{th} Street, representative of a collector	58.0
6	Baywood commercial area	61.9
7	Midtown/Morrow Shores mixed-use areas (Los Osos Valley Road)	64.2
8	Santa Ysabel Avenue	57.7
9	Baywood Elementary School (11^{th} St. & Santa Maria Ave.)	54.1
10	Monarch Grove Elementary School (Los Osos Valley Rd.)	59.6
11	Los Osos Valley Road/South Bay Blvd intersection	62.2

Measured Noise Level	
66.2	dB(A) Leq

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
12486	2016/02/16	09:51:01	67.2	84.1	68.5	66.2
12487	2016/02/16	09:51:06	57.1	79.3	67.1	55.4
12488	2016/02/16	09:51:11	66.7	105.5	73.1	50.2
12489	2016/02/16	09:51:16	53.6	87.0	70.3	55.6
12490	2016/02/16	09:51:21	70.1	85.5	72.3	55.7
12491	2016/02/16	09:51:26	66.1	85.2	72.5	59.4
12492	2016/02/16	09:51:31	60.0	75.0	61.5	56.5
12493	2016/02/16	09:51:36	59.5	77.4	63.9	54.0
12494	2016/02/16	09:51:41	50.3	66.9	54.0	49.8
12495	2016/02/16	09:51:46	65.5	83.9	68.1	51.2
12496	2016/02/16	09:51:51	64.4	81.1	67.6	59.1
12497	2016/02/16	09:51:56	68.9	83.3	70.5	67.6
12498	2016/02/16	09:52:01	67.2	81.9	69.0	65.1
12499	2016/02/16	09:52:06	66.6	82.5	68.1	64.8
12500	2016/02/16	09:52:11	68.7	83.8	70.0	67.3
12501	2016/02/16	09:52:16	64.1	79.5	69.0	63.1
12502	2016/02/16	09:52:21	67.7	82.8	68.4	65.1
12503	2016/02/16	09:52:26	67.3	83.3	67.9	66.4
12504	2016/02/16	09:52:31	64.5	80.1	67.4	61.9
12505	2016/02/16	09:52:36	55.7	77.6	61.9	53.3
12506	2016/02/16	09:52:41	70.7	88.2	73.9	53.6
12507	2016/02/16	09:52:46	69.0	89.9	73.6	66.8
12508	2016/02/16	09:52:51	66.5	82.8	70.4	64.6
12509	2016/02/16	09:52:56	57.5	77.3	64.6	56.6
12510	2016/02/16	09:53:01	65.7	81.9	67.5	56.7
12511	2016/02/16	09:53:06	64.1	79.1	67.1	62.2
12512	2016/02/16	09:53:11	68.8	83.2	69.8	62.5
12513	2016/02/16	09:53:16	68.3	86.1	70.5	66.3
12514	2016/02/16	09:53:21	69.2	84.2	70.6	66.9
12515	2016/02/16	09:53:26	61.9	78.1	66.9	61.9
12516	2016/02/16	09:53:31	57.2	77.2	64.3	52.7
12517	2016/02/16	09:53:36	59.3	74.1	61.4	52.7
12518	2016/02/16	09:53:41	68.9	85.7	70.7	61.4
12519	2016/02/16	09:53:46	67.2	83.8	70.8	66.7
12520	2016/02/16	09:53:51	67.8	83.3	69.1	66.4
12521	2016/02/16	09:53:56	56.3	74.4	66.7	54.4
12522	2016/02/16	09:54:01	49.7	65.3	54.4	48.8
12523	2016/02/16	09:54:06	56.2	74.2	58.1	48.9
12524	2016/02/16	09:54:11	67.2	83.1	69.0	58.1
12525	2016/02/16	09:54:16	68.8	82.7	70.0	68.0
12526	2016/02/16	09:54:21	66.9	84.4	70.1	63.0
12527	2016/02/16	09:54:26	70.8	84.7	72.3	68.5
12528	2016/02/16	09:54:31	66.6	80.4	68.7	65.3
12529	2016/02/16	09:54:36	73.2	87.7	74.4	66.1
12530	2016/02/16	09:54:41	68.8	84.8	74.2	65.8
12531	2016/02/16	09:54:46	61.7	77.2	65.8	58.4
12532	2016/02/16	09:54:51	55.7	73.4	58.7	53.3
12533	2016/02/16	09:54:56	63.7	87.3	66.8	57.3
12534	2016/02/16	09:55:01	65.9	81.4	67.6	64.7
12535	2016/02/16	09:55:06	67.0	80.2	68.0	64.9
12536	2016/02/16	09:55:11	67.1	84.0	68.1	66.2
12537	2016/02/16	09:55:16	67.6	82.1	69.0	64.9
12538	2016/02/16	09:55:21	67.9	82.8	69.4	66.3
12539	2016/02/16	09:55:26	62.7	80.5	68.7	60.8
12540	2016/02/16	09:55:31	64.3	80.8	66.8	60.4
12541	2016/02/16	09:55:36	63.3	81.3	66.5	58.0
12542	2016/02/16	09:55:41	65.7	80.4	67.6	64.4

12543	2016/02/16	09:55:46	64.9	80.5	66.7	64.0
12544	2016/02/16	09:55:51	62.7	82.0	67.7	56.2
12545	2016/02/16	09:55:56	59.4	75.8	62.4	54.8
12546	2016/02/16	09:56:01	68.6	83.3	69.9	62.4
12547	2016/02/16	09:56:06	63.8	79.0	68.6	60.8
12548	2016/02/16	09:56:11	65.6	82.0	68.3	60.3
12549	2016/02/16	09:56:16	62.7	79.0	67.9	58.8
12550	2016/02/16	09:56:21	67.2	87.6	68.5	59.5
12551	2016/02/16	09:56:26	62.7	85.7	68.3	58.3
12552	2016/02/16	09:56:31	65.0	81.1	67.0	57.7
12553	2016/02/16	09:56:36	71.1	88.5	73.4	65.5
12554	2016/02/16	09:56:41	68.9	88.8	73.9	64.4
12555	2016/02/16	09:56:46	64.2	79.9	66.1	61.0
12556	2016/02/16	09:56:51	68.1	82.6	69.8	64.3
12557	2016/02/16	09:56:56	68.2	83.0	69.7	66.6
12558	2016/02/16	09:57:01	69.1	85.0	71.2	66.5
12559	2016/02/16	09:57:06	65.4	83.0	68.9	62.0
12560	2016/02/16	09:57:11	66.3	83.6	68.4	61.5
12561	2016/02/16	09:57:16	63.1	80.2	66.9	57.8
12562	2016/02/16	09:57:21	63.7	81.2	66.5	56.3
12563	2016/02/16	09:57:26	61.8	79.2	66.5	58.7
12564	2016/02/16	09:57:31	66.3	80.8	67.4	64.2
12565	2016/02/16	09:57:36	69.0	86.5	70.8	66.9
12566	2016/02/16	09:57:41	59.2	76.8	67.5	55.4
12567	2016/02/16	09:57:46	65.6	80.7	67.2	55.4
12568	2016/02/16	09:57:51	61.0	80.0	67.9	55.5
12569	2016/02/16	09:57:56	62.6	77.8	64.9	54.4
12570	2016/02/16	09:58:01	63.1	82.4	68.3	55.9
12571	2016/02/16	09:58:06	51.6	74.6	55.9	48.0
12572	2016/02/16	09:58:11	52.4	71.5	56.0	47.5
12573	2016/02/16	09:58:16	70.8	85.5	72.3	56.1
12574	2016/02/16	09:58:21	68.6	89.4	72.4	65.9
12575	2016/02/16	09:58:26	66.9	81.2	68.1	65.3
12576	2016/02/16	09:58:31	70.0	84.8	71.9	66.7
12577	2016/02/16	09:58:36	68.8	84.1	71.9	65.2
12578	2016/02/16	09:58:41	63.7	82.6	65.2	63.0
12579	2016/02/16	09:58:46	64.9	79.4	66.0	62.7
12580	2016/02/16	09:58:51	67.2	82.4	68.5	65.4
12581	2016/02/16	09:58:56	62.3	78.9	65.4	60.8
12582	2016/02/16	09:59:01	62.1	82.6	65.3	59.7
12583	2016/02/16	09:59:06	54.6	73.3	59.6	52.4
12584	2016/02/16	09:59:11	62.7	78.0	64.6	55.8
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12589	2016/02/16	09:59:36	70.3	85.9	72.9	66.1
12590	2016/02/16	09:59:41	70.0	85.5	71.4	66.8
12591	2016/02/16	09:59:46	68.2	83.7	70.5	67.2
12592	2016/02/16	09:59:51	67.4	83.4	70.3	62.9
12593	2016/02/16	09:59:56	59.3	86.5	62.9	58.1
12594	2016/02/16	10:00:01	66.5	82.6	67.6	59.7
12595	2016/02/16	10:00:06	65.8	82.8	68.2	61.9
12596	2016/02/16	10:00:11	68.4	84.2	71.6	62.4
12597	2016/02/16	10:00:16	68.1	83.0	71.8	66.0
12598	2016/02/16	10:00:21	62.8	78.5	66.0	59.4
12599	2016/02/16	10:00:26	62.1	80.2	65.1	56.6
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12605	2016/02/16	10:00:56	61.6	77.4	64.6	55.6
12606	2016/02/16	10:01:01	70.6	84.4	71.9	64.6
12607	2016/02/16	10:01:06	68.9	82.7	71.2	68.1
12608	2016/02/16	10:01:11	72.4	88.8	74.3	67.8
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12610	2016/02/16	10:01:21	63.8	82.4	71.5	59.4
12611	2016/02/16	10:01:26	51.5	65.3	59.4	49.4
12612	2016/02/16	10:01:31	49.2	64.2	51.2	47.8
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12631	2016/02/16	10:03:06	66.3	81.8	68.5	62.9
12632	2016/02/16	10:03:11	63.0	79.9	65.9	59.1
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12634	2016/02/16	10:03:21	67.4	82.9	69.0	64.4
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12636	2016/02/16	10:03:31	63.7	83.2	67.8	60.7
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12638	2016/02/16	10:03:41	64.5	79.4	66.3	55.9
12639	2016/02/16	10:03:46	66.5	81.4	67.6	64.7
12640	2016/02/16	10:03:51	65.4	80.9	67.9	61.8
12641	2016/02/16	10:03:56	64.7	81.9	68.7	57.1
12642	2016/02/16	10:04:01	70.5	85.3	71.8	68.7
12643	2016/02/16	10:04:06	68.6	83.8	70.3	66.0
12644	2016/02/16	10:04:11	64.5	82.0	67.8	60.5
12645	2016/02/16	10:04:16	64.1	79.2	67.9	61.5
12646	2016/02/16	10:04:21	66.7	81.0	68.0	60.9
12647	2016/02/16	10:04:26	68.9	85.9	70.1	66.4
12648	2016/02/16	10:04:31	66.1	82.2	66.9	65.1
12649	2016/02/16	10:04:36	67.6	82.1	68.5	65.9
12650	2016/02/16	10:04:41	70.2	86.0	71.0	67.4
12651	2016/02/16	10:04:46	67.3	81.4	70.8	65.9
12652	2016/02/16	10:04:51	63.6	78.8	65.9	62.2
12653	2016/02/16	10:04:56	57.0	73.5	62.2	55.6
12654	2016/02/16	10:05:01	51.8	82.5	55.8	49.5
12655	2016/02/16	10:05:06	61.9	77.3	64.2	49.4
12656	2016/02/16	10:05:11	67.3	81.7	69.1	64.3
12657	2016/02/16	10:05:16	64.6	81.8	67.4	61.2
12658	2016/02/16	10:05:21	67.7	84.9	69.0	60.8

12659	2016/02/16	10:05:26	64.3	81.0	68.5	64.1
12660	2016/02/16	10:05:31	56.7	73.6	64.4	52.0
12661	2016/02/16	10:05:36	44.8	57.2	51.9	44.4
12662	2016/02/16	10:05:41	51.6	68.6	53.7	44.6
12663	2016/02/16	10:05:46	64.5	79.7	66.3	52.0
12664	2016/02/16	10:05:51	56.9	75.6	66.2	55.1
12665	2016/02/16	10:05:56	65.8	83.6	68.3	56.9
12666	2016/02/16	10:06:01	54.0	65.9	63.1	56.9

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Measurement Data

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
3	2016/02/02	14:53:40	55.1	72.1	58.0	52.7
4	2016/02/02	14:53:45	63.9	87.0	65.9	58.1
5	2016/02/02	14:53:50	56.2	78.7	61.3	54.1
6	2016/02/02	14:53:55	53.6	69.4	54.8	51.4
7	2016/02/02	14:54:00	54.2	70.4	55.8	53.2
8	2016/02/02	14:54:05	68.2	87.8	70.1	55.8
9	2016/02/02	14:54:10	67.0	87.9	69.9	63.2
10	2016/02/02	14:54:15	65.3	84.7	66.9	63.2
11	2016/02/02	14:54:20	68.9	87.0	72.7	64.0
12	2016/02/02	14:54:25	74.5	89.3	76.4	70.5
13	2016/02/02	14:54:30	63.8	83.3	70.5	63.8
14	2016/02/02	14:54:35	62.0	78.7	64.4	60.9
15	2016/02/02	14:54:40	64.9	82.2	66.7	61.7
16	2016/02/02	14:54:45	71.3	87.2	73.6	66.7
17	2016/02/02	14:54:50	63.9	81.1	67.9	62.0
18	2016/02/02	14:54:55	63.8	86.6	66.5	60.8
19	2016/02/02	14:55:00	66.2	87.5	68.3	62.2
20	2016/02/02	14:55:05	63.6	81.6	65.2	60.3
21	2016/02/02	14:55:10	64.1	82.8	65.8	63.2
22	2016/02/02	14:55:15	63.4	88.7	65.7	60.1
23	2016/02/02	14:55:20	67.8	84.8	69.8	63.4
24	2016/02/02	14:55:25	68.8	87.4	71.8	63.7
25	2016/02/02	14:55:30	67.0	83.6	71.9	65.0
26	2016/02/02	14:55:35	64.7	84.3	65.9	63.5
27	2016/02/02	14:55:40	61.9	90.2	65.6	61.0
28	2016/02/02	14:55:45	58.4	79.1	61.0	57.1
29	2016/02/02	14:55:50	63.4	84.8	65.3	59.1
30	2016/02/02	14:55:55	63.4	94.9	67.0	61.3
31	2016/02/02	14:56:00	56.5	79.4	61.8	54.5
32	2016/02/02	14:56:05	55.3	91.8	61.1	49.6
33	2016/02/02	14:56:10	49.6	64.1	50.7	48.4
34	2016/02/02	14:56:15	59.9	79.7	61.8	50.8
35	2016/02/02	14:56:20	65.0	81.1	67.6	61.8
36	2016/02/02	14:56:25	68.7	89.7	70.4	66.6
37	2016/02/02	14:56:30	66.6	84.4	68.5	65.2
38	2016/02/02	14:56:35	70.0	87.1	72.9	66.4
39	2016/02/02	14:56:40	64.1	83.3	67.0	63.1
40	2016/02/02	14:56:45	66.6	84.9	70.7	60.9
41	2016/02/02	14:56:50	68.0	84.5	71.8	65.5
42	2016/02/02	14:56:55	65.5	86.8	67.1	63.8
43	2016/02/02	14:57:00	64.9	84.3	67.8	60.4
44	2016/02/02	14:57:05	64.5	85.8	69.0	61.1
45	2016/02/02	14:57:10	63.2	82.7	65.8	61.4
46	2016/02/02	14:57:15	61.1	80.0	62.3	60.7
47	2016/02/02	14:57:20	63.4	81.6	66.0	59.7
48	2016/02/02	14:57:25	67.3	88.9	69.5	63.1
49	2016/02/02	14:57:30	58.3	72.1	63.0	57.2
50	2016/02/02	14:57:35	60.6	83.2	63.3	56.1
51	2016/02/02	14:57:40	56.1	71.5	61.8	55.4
52	2016/02/02	14:57:45	62.4	82.1	63.4	56.2
53	2016/02/02	14:57:50	65.0	81.5	65.5	63.4
54	2016/02/02	14:57:55	64.1	83.5	66.0	61.7
55	2016/02/02	14:58:00	54.3	70.8	61.7	53.2
56	2016/02/02	14:58:05	62.7	87.8	65.1	54.0
57	2016/02/02	14:58:10	58.6	78.8	63.2	56.1
58	2016/02/02	14:58:15	63.7	85.3	67.0	60.1
59	2016/02/02	14:58:20	56.8	73.9	60.1	53.9

Measured Noise Level	
64.3	dB(A) Leq

Measurement 2

60	2016/02/02	14:58:25	62.9	81.6	63.8	60.1
61	2016/02/02	14:58:30	64.2	84.0	67.2	61.1
62	2016/02/02	14:58:35	66.9	84.2	69.1	65.1
63	2016/02/02	14:58:40	64.6	82.7	65.9	62.7
64	2016/02/02	14:58:45	63.2	83.7	66.2	61.0
65	2016/02/02	14:58:50	59.5	82.1	62.1	58.7
66	2016/02/02	14:58:55	54.8	72.7	58.7	52.9
67	2016/02/02	14:59:00	64.5	82.9	65.4	57.1
68	2016/02/02	14:59:05	59.4	85.6	66.3	55.7
69	2016/02/02	14:59:10	64.6	88.8	67.2	56.0
70	2016/02/02	14:59:15	63.5	86.1	66.6	60.5
71	2016/02/02	14:59:20	64.6	84.1	65.7	63.2
72	2016/02/02	14:59:25	63.4	82.6	64.8	61.5
73	2016/02/02	14:59:30	65.9	81.2	67.5	64.0
74	2016/02/02	14:59:35	63.5	80.6	67.5	60.8
75	2016/02/02	14:59:40	58.2	78.1	60.7	56.3
76	2016/02/02	14:59:45	63.9	79.2	65.4	59.2
77	2016/02/02	14:59:50	61.6	82.6	63.9	60.9
78	2016/02/02	14:59:55	66.7	92.0	67.6	62.8
79	2016/02/02	15:00:00	61.5	83.3	67.0	56.9
80	2016/02/02	15:00:05	60.9	76.4	62.7	56.6
81	2016/02/02	15:00:10	61.2	80.8	64.7	55.7
82	2016/02/02	15:00:15	54.1	69.7	55.7	53.4
83	2016/02/02	15:00:20	61.8	77.2	63.4	55.0
84	2016/02/02	15:00:25	62.1	79.1	63.4	61.0
85	2016/02/02	15:00:30	63.6	80.2	64.3	62.3
86	2016/02/02	15:00:35	62.3	82.4	64.6	61.0
87	2016/02/02	15:00:40	59.4	78.7	61.8	58.2
88	2016/02/02	15:00:45	62.8	76.3	63.4	58.8
89	2016/02/02	15:00:50	56.4	76.3	62.3	54.2
90	2016/02/02	15:00:55	62.9	81.5	65.3	54.1
91	2016/02/02	15:01:00	57.9	71.8	62.1	57.9
92	2016/02/02	15:01:05	52.8	67.3	57.9	50.7
93	2016/02/02	15:01:10	48.4	63.1	50.7	46.8
94	2016/02/02	15:01:15	46.3	61.0	47.2	45.8
95	2016/02/02	15:01:20	50.4	66.8	51.1	45.8
96	2016/02/02	15:01:25	61.5	76.1	63.2	51.0
97	2016/02/02	15:01:30	69.0	87.3	70.2	62.5
98	2016/02/02	15:01:35	66.7	84.9	69.6	62.2
99	2016/02/02	15:01:40	64.9	83.7	66.3	61.6
100	2016/02/02	15:01:45	64.7	84.9	66.4	64.1
101	2016/02/02	15:01:50	66.8	81.0	68.0	64.1
102	2016/02/02	15:01:55	62.2	79.4	68.0	60.1
103	2016/02/02	15:02:00	59.7	77.8	60.9	58.6
104	2016/02/02	15:02:05	62.9	79.1	64.5	60.6
105	2016/02/02	15:02:10	60.1	74.4	64.4	57.4
106	2016/02/02	15:02:15	56.4	77.2	57.9	55.2
107	2016/02/02	15:02:20	58.9	76.1	60.5	54.2
108	2016/02/02	15:02:25	60.8	77.7	62.3	57.2
109	2016/02/02	15:02:30	57.9	75.5	61.3	52.2
110	2016/02/02	15:02:35	63.2	87.0	65.6	61.4
111	2016/02/02	15:02:40	56.7	70.5	62.3	56.1
112	2016/02/02	15:02:45	62.2	81.8	63.8	58.2
113	2016/02/02	15:02:50	62.4	80.0	65.3	58.1
114	2016/02/02	15:02:55	59.2	79.1	63.1	55.3
115	2016/02/02	15:03:00	63.1	81.8	65.7	59.4
116	2016/02/02	15:03:05	59.5	76.3	61.9	56.7
117	2016/02/02	15:03:10	64.3	85.0	65.5	61.8

118	2016/02/02	15:03:15	66.8	89.2	69.5	64.2
119	2016/02/02	15:03:20	64.5	87.6	67.2	61.0
120	2016/02/02	15:03:25	60.5	84.9	62.4	59.3
121	2016/02/02	15:03:30	62.8	87.3	66.0	57.6
122	2016/02/02	15:03:35	64.8	82.0	68.9	55.7
123	2016/02/02	15:03:40	71.0	86.6	73.2	68.5
124	2016/02/02	15:03:45	66.4	81.3	69.3	60.5
125	2016/02/02	15:03:50	50.3	64.1	60.5	50.1
126	2016/02/02	15:03:55	55.0	71.2	57.9	50.3
127	2016/02/02	15:04:00	59.6	80.0	62.0	55.2
128	2016/02/02	15:04:05	58.2	77.2	59.8	54.3
129	2016/02/02	15:04:10	57.0	72.7	60.1	54.2
130	2016/02/02	15:04:15	57.3	76.4	59.1	53.8
131	2016/02/02	15:04:20	67.1	86.5	69.9	57.7
132	2016/02/02	15:04:25	63.1	81.2	68.7	61.5
133	2016/02/02	15:04:30	65.8	85.8	67.6	62.7
134	2016/02/02	15:04:35	64.2	84.9	66.1	62.2
135	2016/02/02	15:04:40	65.7	82.9	67.8	62.2
136	2016/02/02	15:04:45	61.9	85.6	64.8	60.1
137	2016/02/02	15:04:50	61.3	82.2	63.8	58.7
138	2016/02/02	15:04:55	68.3	92.3	70.2	63.8
139	2016/02/02	15:05:00	65.0	83.2	66.9	63.2
140	2016/02/02	15:05:05	65.5	84.5	67.8	63.1
141	2016/02/02	15:05:10	64.0	81.5	65.4	63.0
142	2016/02/02	15:05:15	63.3	85.3	66.1	60.3
143	2016/02/02	15:05:20	60.8	75.4	62.7	57.2
144	2016/02/02	15:05:25	63.1	77.9	64.3	62.0
145	2016/02/02	15:05:30	62.9	78.6	65.7	59.9
146	2016/02/02	15:05:35	63.5	79.2	64.6	60.9
147	2016/02/02	15:05:40	58.6	75.9	61.8	56.5
148	2016/02/02	15:05:45	63.9	86.1	65.7	60.1
149	2016/02/02	15:05:50	62.9	81.7	63.9	61.9
150	2016/02/02	15:05:55	64.1	86.2	65.2	62.9
151	2016/02/02	15:06:00	60.6	79.8	64.2	58.4
152	2016/02/02	15:06:05	65.8	82.7	68.2	58.4
153	2016/02/02	15:06:10	63.9	77.8	67.3	61.6
154	2016/02/02	15:06:15	57.2	72.1	61.6	56.8
155	2016/02/02	15:06:20	60.0	76.0	62.5	57.5
156	2016/02/02	15:06:25	65.7	86.1	67.8	62.3
157	2016/02/02	15:06:30	57.2	72.1	62.3	56.0
158	2016/02/02	15:06:35	61.2	81.3	63.4	57.6
159	2016/02/02	15:06:40	64.0	87.4	67.4	55.5
160	2016/02/02	15:06:45	66.0	83.1	67.7	64.5
161	2016/02/02	15:06:50	67.5	86.4	67.3	64.6
164	2016/02/02	15:06:58	62.5	80.4	70.3	62.5
165	2016/02/02	15:07:03	63.2	85.2	64.8	62.2
166	2016/02/02	15:07:08	68.0	83.0	68.9	62.6
167	2016/02/02	15:07:13	61.9	87.9	68.5	58.8
168	2016/02/02	15:07:18	62.0	78.5	64.5	58.1
169	2016/02/02	15:07:23	61.4	77.8	65.1	57.9
170	2016/02/02	15:07:28	61.3	77.4	63.8	57.0
171	2016/02/02	15:07:33	65.4	81.1	67.5	63.2
172	2016/02/02	15:07:38	69.7	83.9	70.7	67.5
173	2016/02/02	15:07:43	64.0	90.3	67.9	59.8
174	2016/02/02	15:07:48	62.9	85.5	65.1	59.7
175	2016/02/02	15:07:53	60.8	81.2	64.8	56.3
176	2016/02/02	15:07:58	65.7	87.4	69.2	60.3
177	2016/02/02	15:08:03	59.4	83.7	62.8	57.1

178	2016/02/02	15:08:08	65.1	78.9	66.4	57.3
179	2016/02/02	15:08:13	69.5	90.1	70.8	66.4
180	2016/02/02	15:08:18	68.4	88.4	70.9	65.6
181	2016/02/02	15:08:23	63.2	85.0	66.9	60.9
182	2016/02/02	15:08:28	61.9	82.5	64.2	60.0
183	2016/02/02	15:08:33	59.6	75.9	62.3	57.7
184	2016/02/02	15:08:38	64.7	85.3	67.2	62.3
185	2016/02/02	15:08:43	63.7	85.4	64.7	62.9

Measured Noise Level	
60.5	dB(A) Leq

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
4	2016/02/16	14:06:00	42.6	67.6	45.3	42.0
5	2016/02/16	14:06:05	52.9	86.7	57.9	42.2
6	2016/02/16	14:06:10	65.7	85.6	69.4	52.5
7	2016/02/16	14:06:15	65.4	83.1	68.5	59.5
8	2016/02/16	14:06:20	66.0	82.2	69.3	59.4
9	2016/02/16	14:06:25	66.2	82.5	69.6	61.0
10	2016/02/16	14:06:30	47.3	73.1	61.0	47.3
11	2016/02/16	14:06:35	62.9	81.8	66.3	48.2
12	2016/02/16	14:06:40	63.0	79.2	66.5	56.5
13	2016/02/16	14:06:45	47.5	78.5	56.4	46.1
14	2016/02/16	14:06:50	41.9	64.0	46.1	42.0
15	2016/02/16	14:06:55	42.8	64.8	43.3	41.9
16	2016/02/16	14:07:00	42.0	63.6	42.7	41.6
17	2016/02/16	14:07:05	41.6	64.0	41.8	41.4
18	2016/02/16	14:07:10	41.3	63.6	41.8	40.7
19	2016/02/16	14:07:15	43.2	68.6	45.1	40.8
20	2016/02/16	14:07:20	42.3	63.6	44.1	41.8
21	2016/02/16	14:07:25	42.1	64.0	42.2	41.7
22	2016/02/16	14:07:30	42.1	63.6	42.3	41.9
23	2016/02/16	14:07:35	48.5	67.4	52.1	42.2
24	2016/02/16	14:07:40	60.1	75.5	62.1	52.2
25	2016/02/16	14:07:45	64.6	81.1	67.3	55.9
26	2016/02/16	14:07:50	47.0	74.6	63.9	47.1
27	2016/02/16	14:07:55	44.7	70.4	47.7	43.4
28	2016/02/16	14:08:00	42.8	64.4	43.4	42.6
29	2016/02/16	14:08:05	45.9	72.3	47.4	42.7
30	2016/02/16	14:08:10	62.4	81.9	67.1	44.4
31	2016/02/16	14:08:15	67.7	84.8	71.2	59.4
32	2016/02/16	14:08:20	45.3	65.2	59.4	45.3
33	2016/02/16	14:08:25	43.3	64.0	45.4	43.1
34	2016/02/16	14:08:30	43.6	64.4	43.9	43.1
35	2016/02/16	14:08:35	46.7	66.1	49.2	43.9
36	2016/02/16	14:08:40	64.3	80.2	66.8	49.3
37	2016/02/16	14:08:45	47.7	75.7	63.7	46.9
38	2016/02/16	14:08:50	44.3	63.6	46.8	44.2
39	2016/02/16	14:08:55	44.2	64.8	44.8	43.9
40	2016/02/16	14:09:00	43.3	64.0	43.9	43.0
41	2016/02/16	14:09:05	42.9	64.0	43.3	42.8
42	2016/02/16	14:09:10	42.2	64.0	42.9	41.9
43	2016/02/16	14:09:15	41.9	64.0	42.1	41.8
44	2016/02/16	14:09:20	41.6	64.0	42.0	41.2
45	2016/02/16	14:09:25	46.1	75.9	49.5	41.1
46	2016/02/16	14:09:30	63.3	79.5	65.9	49.6
47	2016/02/16	14:09:35	45.5	76.3	57.6	45.0
48	2016/02/16	14:09:40	41.7	63.6	45.0	41.1
49	2016/02/16	14:09:45	41.1	64.8	41.5	40.7
50	2016/02/16	14:09:50	41.6	63.6	41.9	41.3
51	2016/02/16	14:09:55	41.7	63.0	42.0	41.3
52	2016/02/16	14:10:00	41.9	65.2	42.9	41.0
53	2016/02/16	14:10:05	40.7	65.8	42.6	40.4
54	2016/02/16	14:10:10	41.1	64.4	41.4	40.7
55	2016/02/16	14:10:15	41.6	64.4	41.9	41.3
56	2016/02/16	14:10:20	43.5	64.8	45.0	41.1
57	2016/02/16	14:10:25	47.8	68.3	50.8	42.5
58	2016/02/16	14:10:30	61.0	77.2	62.7	50.8
59	2016/02/16	14:10:35	44.9	64.8	59.0	44.8
60	2016/02/16	14:10:40	46.4	65.2	48.0	44.7

61	2016/02/16	14:10:45	62.9	80.9	65.6	48.0
62	2016/02/16	14:10:50	62.8	80.3	65.1	61.1
63	2016/02/16	14:10:55	59.4	74.1	62.4	57.0
64	2016/02/16	14:11:00	44.4	64.8	57.0	43.5
65	2016/02/16	14:11:05	43.7	66.3	44.9	42.7
66	2016/02/16	14:11:10	61.9	81.1	66.3	44.9
67	2016/02/16	14:11:15	64.6	82.7	67.2	60.0
68	2016/02/16	14:11:20	45.4	65.5	60.0	45.0
69	2016/02/16	14:11:25	44.1	67.0	45.3	43.3
70	2016/02/16	14:11:30	56.2	77.7	60.6	44.6
71	2016/02/16	14:11:35	69.1	86.0	72.5	60.6
72	2016/02/16	14:11:40	47.3	72.3	62.0	46.6
73	2016/02/16	14:11:45	45.2	70.3	47.3	44.4
74	2016/02/16	14:11:50	45.7	72.0	47.0	44.1
75	2016/02/16	14:11:55	45.2	69.9	46.8	44.6
76	2016/02/16	14:12:00	43.9	64.4	45.1	43.4
77	2016/02/16	14:12:05	43.5	64.0	44.0	43.2
78	2016/02/16	14:12:10	45.9	79.8	49.5	42.5
79	2016/02/16	14:12:15	44.8	71.1	48.2	44.1
80	2016/02/16	14:12:20	44.2	64.8	45.2	43.3
81	2016/02/16	14:12:25	63.4	79.1	66.1	45.2
82	2016/02/16	14:12:30	53.3	71.9	64.3	52.1
83	2016/02/16	14:12:35	64.1	81.6	67.1	54.2
84	2016/02/16	14:12:40	45.4	76.1	60.0	45.8
85	2016/02/16	14:12:45	44.2	66.3	47.4	43.6
86	2016/02/16	14:12:50	43.8	65.2	44.1	43.4
87	2016/02/16	14:12:55	44.6	69.6	44.9	44.0
88	2016/02/16	14:13:00	45.2	64.4	45.8	44.4
89	2016/02/16	14:13:05	46.2	65.2	47.3	45.5
90	2016/02/16	14:13:10	64.3	81.2	67.9	47.3
91	2016/02/16	14:13:15	45.4	64.8	59.0	45.5
92	2016/02/16	14:13:20	45.2	64.4	45.5	45.0
93	2016/02/16	14:13:25	45.4	64.4	45.6	45.1
94	2016/02/16	14:13:30	45.2	64.8	45.6	45.0
95	2016/02/16	14:13:35	45.8	65.2	46.1	45.0
96	2016/02/16	14:13:40	45.5	66.8	46.4	45.2
97	2016/02/16	14:13:45	45.6	64.8	46.0	45.3
98	2016/02/16	14:13:50	56.4	76.9	60.9	45.9
99	2016/02/16	14:13:55	72.8	90.2	75.2	61.0
100	2016/02/16	14:14:00	55.4	71.9	68.0	52.9
101	2016/02/16	14:14:05	50.2	66.6	52.9	49.8
102	2016/02/16	14:14:10	66.7	83.5	70.2	50.6
103	2016/02/16	14:14:15	52.5	71.2	67.7	50.3
104	2016/02/16	14:14:20	46.0	64.4	50.3	45.4
105	2016/02/16	14:14:25	45.1	64.0	45.5	44.9
106	2016/02/16	14:14:30	45.2	64.0	45.5	44.9
107	2016/02/16	14:14:35	46.6	65.8	46.9	45.3
108	2016/02/16	14:14:40	46.3	65.2	46.5	46.0
109	2016/02/16	14:14:45	46.4	65.2	46.6	46.2
110	2016/02/16	14:14:50	49.2	69.1	52.5	46.2
111	2016/02/16	14:14:55	63.8	80.3	67.0	52.8
112	2016/02/16	14:15:00	64.1	82.2	68.7	51.0
113	2016/02/16	14:15:05	60.8	81.2	69.0	52.9
114	2016/02/16	14:15:10	46.7	65.2	52.9	46.5
115	2016/02/16	14:15:15	46.3	65.5	46.7	45.8
116	2016/02/16	14:15:20	46.7	64.4	46.9	46.2
117	2016/02/16	14:15:25	46.0	64.4	46.9	45.2
118	2016/02/16	14:15:30	45.5	64.4	45.6	45.2

119	2016/02/16	14:15:35	45.8	64.8	46.1	45.5
120	2016/02/16	14:15:40	47.1	65.2	47.6	45.5
121	2016/02/16	14:15:45	47.5	65.2	47.7	47.3
122	2016/02/16	14:15:50	48.3	65.2	48.4	47.6
123	2016/02/16	14:15:55	47.2	72.8	48.5	46.4
124	2016/02/16	14:16:00	63.8	83.7	68.7	46.3
125	2016/02/16	14:16:05	65.0	82.4	69.4	61.0
126	2016/02/16	14:16:10	48.8	68.0	61.0	47.7
127	2016/02/16	14:16:15	46.4	65.5	47.6	46.3
128	2016/02/16	14:16:20	47.1	73.8	48.2	46.1
129	2016/02/16	14:16:25	55.7	74.9	59.2	48.1
130	2016/02/16	14:16:30	62.3	80.1	63.4	58.7
131	2016/02/16	14:16:35	59.0	77.5	64.0	53.0
132	2016/02/16	14:16:40	48.7	65.8	53.0	48.8
133	2016/02/16	14:16:45	48.6	66.1	48.9	48.2
134	2016/02/16	14:16:50	48.7	71.3	49.5	48.3
135	2016/02/16	14:16:55	53.8	82.2	58.4	48.0
138	2016/02/16	14:17:07	49.6	71.9	55.7	49.1
139	2016/02/16	14:17:12	52.1	87.7	55.5	49.1
140	2016/02/16	14:17:17	53.2	77.7	54.9	50.8
141	2016/02/16	14:17:22	57.7	74.0	58.3	54.7
142	2016/02/16	14:17:27	54.2	87.4	58.4	50.8
143	2016/02/16	14:17:32	47.3	64.4	50.8	47.3
144	2016/02/16	14:17:37	46.7	65.2	47.5	46.2
145	2016/02/16	14:17:42	45.8	64.8	46.2	45.5
146	2016/02/16	14:17:47	46.1	65.8	46.3	45.8
147	2016/02/16	14:17:52	50.6	67.8	53.6	46.2
148	2016/02/16	14:17:57	59.0	76.9	59.9	53.6
149	2016/02/16	14:18:02	51.3	68.8	58.2	48.4
150	2016/02/16	14:18:07	47.7	65.2	48.4	47.6
151	2016/02/16	14:18:12	48.4	65.5	48.7	47.8
152	2016/02/16	14:18:17	48.4	66.6	48.7	48.0
153	2016/02/16	14:18:22	47.9	65.5	48.3	47.5
154	2016/02/16	14:18:27	65.2	84.1	69.6	48.3
155	2016/02/16	14:18:32	60.0	80.6	69.6	53.7
156	2016/02/16	14:18:37	49.8	66.1	53.7	49.2
157	2016/02/16	14:18:42	48.7	65.8	49.3	48.5
158	2016/02/16	14:18:47	49.1	65.8	49.3	49.0
159	2016/02/16	14:18:52	54.6	73.7	58.1	49.1
160	2016/02/16	14:18:57	78.2	98.7	82.2	58.2
161	2016/02/16	14:19:02	68.9	88.5	76.0	62.4
162	2016/02/16	14:19:07	51.3	71.1	62.3	49.9
163	2016/02/16	14:19:12	51.5	68.8	53.8	49.4
164	2016/02/16	14:19:17	47.9	65.2	49.9	47.4
165	2016/02/16	14:19:22	47.3	65.5	47.5	47.1
166	2016/02/16	14:19:27	48.3	70.6	49.4	47.4
167	2016/02/16	14:19:32	67.4	84.7	71.0	49.4
168	2016/02/16	14:19:37	48.1	66.8	63.4	49.2
169	2016/02/16	14:19:42	51.5	83.1	55.2	48.5
170	2016/02/16	14:19:47	48.7	82.3	50.4	47.9
171	2016/02/16	14:19:52	47.5	72.1	48.2	47.4
172	2016/02/16	14:19:57	47.3	68.5	47.7	47.0
173	2016/02/16	14:20:02	50.3	67.4	52.6	47.5
174	2016/02/16	14:20:07	62.4	82.9	64.4	52.6
175	2016/02/16	14:20:12	61.1	79.4	63.4	56.7
176	2016/02/16	14:20:17	66.1	82.8	69.9	57.2
177	2016/02/16	14:20:22	49.7	78.0	57.1	49.3
178	2016/02/16	14:20:27	64.4	80.9	67.8	50.5

179	2016/02/16	14:20:32	47.8	77.5	58.5	47.6
180	2016/02/16	14:20:37	47.3	68.5	48.5	46.6
181	2016/02/16	14:20:42	51.2	68.0	51.9	48.5
182	2016/02/16	14:20:47	54.5	72.3	57.4	50.3
183	2016/02/16	14:20:52	58.5	79.2	61.7	51.8
184	2016/02/16	14:20:57	48.0	77.6	51.8	47.5
185	2016/02/16	14:21:02	49.5	66.1	49.2	49.1

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Measurement Data

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
3	2016/02/16	16:38:00	62.5	88.8	65.4	59.9
4	2016/02/16	16:38:05	65.5	80.3	67.0	62.6
5	2016/02/16	16:38:10	63.9	79.8	67.2	63.1
6	2016/02/16	16:38:15	58.6	74.9	64.0	56.3
7	2016/02/16	16:38:20	61.5	77.9	62.7	57.6
8	2016/02/16	16:38:25	63.8	84.7	65.0	62.2
9	2016/02/16	16:38:30	65.7	82.7	68.4	62.3
10	2016/02/16	16:38:35	73.5	91.9	77.0	66.3
11	2016/02/16	16:38:40	58.9	72.4	66.2	58.6
12	2016/02/16	16:38:45	62.3	76.4	63.1	59.5
13	2016/02/16	16:38:50	54.2	73.8	61.3	52.7
14	2016/02/16	16:38:55	52.7	70.9	55.4	50.6
15	2016/02/16	16:39:00	58.1	73.0	60.1	54.6
16	2016/02/16	16:39:05	62.0	79.6	65.3	53.9
17	2016/02/16	16:39:10	64.7	80.9	66.9	61.2
18	2016/02/16	16:39:15	64.1	82.2	67.5	57.2
19	2016/02/16	16:39:20	51.7	65.1	57.2	51.1
20	2016/02/16	16:39:25	55.1	72.3	58.3	51.1
21	2016/02/16	16:39:30	62.6	76.7	64.1	58.4
22	2016/02/16	16:39:35	60.9	79.9	61.6	59.4
23	2016/02/16	16:39:40	67.3	81.2	69.0	60.7
24	2016/02/16	16:39:45	64.3	79.9	66.8	60.9
25	2016/02/16	16:39:50	58.8	72.9	65.9	57.0
26	2016/02/16	16:39:55	70.5	87.5	74.0	57.1
27	2016/02/16	16:40:00	62.8	77.9	67.5	62.2
28	2016/02/16	16:40:05	66.9	82.0	68.9	62.7
29	2016/02/16	16:40:10	59.3	78.1	67.7	59.0
30	2016/02/16	16:40:15	61.5	78.7	62.9	59.2
31	2016/02/16	16:40:20	64.8	79.9	66.9	60.2
32	2016/02/16	16:40:25	62.3	78.2	65.6	58.1
33	2016/02/16	16:40:30	61.0	76.6	64.1	57.6
34	2016/02/16	16:40:35	59.0	76.2	61.9	55.3
35	2016/02/16	16:40:40	60.6	76.3	63.6	55.4
36	2016/02/16	16:40:45	47.9	78.3	55.7	45.7
37	2016/02/16	16:40:50	43.3	58.7	45.6	42.8
38	2016/02/16	16:40:55	49.1	65.7	51.2	43.7
39	2016/02/16	16:41:00	61.3	78.0	63.2	51.3
40	2016/02/16	16:41:05	59.2	77.4	64.6	52.8
41	2016/02/16	16:41:10	57.8	77.8	62.9	48.4
42	2016/02/16	16:41:15	67.7	83.8	70.5	63.0
43	2016/02/16	16:41:20	62.0	76.7	63.2	60.4
44	2016/02/16	16:41:25	60.4	77.6	64.5	55.3
45	2016/02/16	16:41:30	60.1	75.5	62.0	54.8
46	2016/02/16	16:41:35	57.9	75.4	61.5	54.1
47	2016/02/16	16:41:40	61.0	75.1	62.1	60.4
48	2016/02/16	16:41:45	63.1	76.9	63.6	61.0
49	2016/02/16	16:41:50	64.6	80.5	66.7	62.4
50	2016/02/16	16:41:55	63.1	79.5	64.0	62.3
51	2016/02/16	16:42:00	60.4	82.3	63.1	56.7
52	2016/02/16	16:42:05	61.1	75.0	63.4	60.3
53	2016/02/16	16:42:10	55.6	72.2	60.4	53.1
54	2016/02/16	16:42:15	62.9	79.4	65.7	53.1
55	2016/02/16	16:42:20	64.3	76.8	65.7	64.1
56	2016/02/16	16:42:25	68.4	83.3	70.2	64.3
57	2016/02/16	16:42:30	63.3	82.1	69.2	61.3
58	2016/02/16	16:42:35	61.2	76.3	62.9	58.9
59	2016/02/16	16:42:40	63.6	82.0	65.9	58.2

Measured Noise Level	
63.0	dB(A) Leq

60	2016/02/16	16:42:45	65.8	79.5	66.8	61.8
61	2016/02/16	16:42:50	62.1	79.0	66.7	60.3
62	2016/02/16	16:42:55	64.6	80.2	66.9	60.9
63	2016/02/16	16:43:00	63.7	78.9	66.0	57.7
64	2016/02/16	16:43:05	62.4	77.9	64.8	60.4
65	2016/02/16	16:43:10	66.9	83.1	69.0	59.8
66	2016/02/16	16:43:15	68.2	85.1	70.5	67.2
67	2016/02/16	16:43:20	62.8	77.2	67.1	61.2
68	2016/02/16	16:43:25	65.5	81.4	66.3	61.5
69	2016/02/16	16:43:30	60.0	77.4	63.7	58.4
70	2016/02/16	16:43:35	49.9	67.2	59.1	47.2
71	2016/02/16	16:43:40	47.7	70.5	48.3	46.6
72	2016/02/16	16:43:45	61.8	79.4	65.5	47.7
73	2016/02/16	16:43:50	58.8	75.0	65.0	57.8
74	2016/02/16	16:43:55	61.0	88.3	63.3	59.2
75	2016/02/16	16:44:00	63.1	78.0	65.4	58.5
76	2016/02/16	16:44:05	61.7	76.3	63.7	59.7
77	2016/02/16	16:44:10	56.5	76.1	63.9	51.9
78	2016/02/16	16:44:15	61.6	99.6	66.4	50.6
79	2016/02/16	16:44:20	67.9	83.1	69.9	64.7
80	2016/02/16	16:44:25	66.9	83.4	69.2	65.4
81	2016/02/16	16:44:30	71.9	89.8	75.2	64.6
82	2016/02/16	16:44:35	56.2	74.2	64.6	55.5
83	2016/02/16	16:44:40	52.1	64.4	55.5	51.4
84	2016/02/16	16:44:45	52.1	74.4	53.7	50.3
85	2016/02/16	16:44:50	63.6	82.0	67.3	53.7
86	2016/02/16	16:44:55	62.6	79.9	67.7	56.9
87	2016/02/16	16:45:00	64.9	81.8	67.8	56.2
88	2016/02/16	16:45:05	69.6	86.1	71.3	66.3
89	2016/02/16	16:45:10	67.0	81.7	69.0	64.8
90	2016/02/16	16:45:15	61.7	77.4	66.4	59.0
91	2016/02/16	16:45:20	61.2	88.5	65.0	53.9
92	2016/02/16	16:45:25	63.5	80.1	66.1	62.2
93	2016/02/16	16:45:30	54.5	69.6	62.4	53.9
94	2016/02/16	16:45:35	57.8	73.4	60.7	52.3
95	2016/02/16	16:45:40	59.8	75.2	62.2	52.2
96	2016/02/16	16:45:45	60.3	75.6	61.7	57.6
97	2016/02/16	16:45:50	60.7	75.2	62.6	58.9
98	2016/02/16	16:45:55	60.9	74.1	61.5	59.3
99	2016/02/16	16:46:00	63.3	82.7	66.9	58.7
100	2016/02/16	16:46:05	63.1	81.4	68.6	54.2
101	2016/02/16	16:46:10	43.7	57.0	54.1	41.5
102	2016/02/16	16:46:15	50.5	71.2	55.3	41.0
103	2016/02/16	16:46:20	62.3	79.7	65.0	55.4
104	2016/02/16	16:46:25	60.1	78.0	64.3	54.1
105	2016/02/16	16:46:30	62.6	79.8	65.3	54.5
106	2016/02/16	16:46:35	61.4	77.8	64.5	56.8
107	2016/02/16	16:46:40	59.5	74.8	62.5	56.0
108	2016/02/16	16:46:45	64.4	81.1	67.0	54.6
109	2016/02/16	16:46:50	63.8	77.5	65.0	63.0
110	2016/02/16	16:46:55	61.2	77.8	64.6	57.1
111	2016/02/16	16:47:00	54.6	69.3	57.1	54.1
112	2016/02/16	16:47:05	58.5	74.1	60.9	54.3
113	2016/02/16	16:47:10	59.9	74.5	62.1	56.0
114	2016/02/16	16:47:15	59.5	74.5	62.2	52.9
115	2016/02/16	16:47:20	62.6	79.5	66.1	57.8
116	2016/02/16	16:47:25	62.9	80.4	66.5	56.5
117	2016/02/16	16:47:30	59.3	77.1	66.6	54.9

118	2016/02/16	16:47:35	61.7	78.2	63.7	55.8
119	2016/02/16	16:47:40	61.3	84.6	65.1	53.0
120	2016/02/16	16:47:45	47.3	65.7	52.9	47.2
121	2016/02/16	16:47:50	62.4	78.2	64.7	48.1
122	2016/02/16	16:47:55	61.0	77.9	64.0	59.1
123	2016/02/16	16:48:00	63.2	78.3	65.4	59.5
124	2016/02/16	16:48:05	60.1	72.9	64.9	60.1
125	2016/02/16	16:48:10	54.3	70.9	60.2	49.3
126	2016/02/16	16:48:15	64.8	82.2	68.4	48.5
127	2016/02/16	16:48:20	63.0	80.2	67.3	61.0
128	2016/02/16	16:48:25	64.3	78.2	65.1	62.6
129	2016/02/16	16:48:30	61.2	79.0	64.9	57.0
130	2016/02/16	16:48:35	62.7	88.8	65.7	59.6
131	2016/02/16	16:48:40	60.3	82.5	64.2	58.7
132	2016/02/16	16:48:45	65.1	94.8	68.3	59.1
133	2016/02/16	16:48:50	59.6	77.3	63.4	54.1
134	2016/02/16	16:48:55	68.9	84.7	70.8	63.5
135	2016/02/16	16:49:00	62.9	79.3	68.0	61.4
136	2016/02/16	16:49:05	62.3	77.5	64.3	60.5
137	2016/02/16	16:49:10	57.6	77.8	61.3	56.2
138	2016/02/16	16:49:15	54.0	89.7	56.3	53.1
139	2016/02/16	16:49:20	51.4	66.7	53.1	49.8
140	2016/02/16	16:49:25	60.9	76.7	62.9	53.0
141	2016/02/16	16:49:30	61.6	77.3	64.3	57.4
142	2016/02/16	16:49:35	66.3	81.0	67.5	64.3
143	2016/02/16	16:49:40	60.3	81.2	67.3	54.8
144	2016/02/16	16:49:45	56.0	74.2	57.8	50.6
145	2016/02/16	16:49:50	51.2	68.4	57.4	47.3
146	2016/02/16	16:49:55	44.0	58.7	47.3	43.2
147	2016/02/16	16:50:00	62.9	78.1	64.6	45.8
148	2016/02/16	16:50:05	64.7	82.0	66.3	62.3
149	2016/02/16	16:50:10	53.4	68.3	64.4	50.6
150	2016/02/16	16:50:15	59.9	81.1	64.8	48.8
151	2016/02/16	16:50:20	66.6	84.0	70.2	61.2
152	2016/02/16	16:50:25	57.8	75.7	63.2	52.5
153	2016/02/16	16:50:30	52.6	67.2	54.1	50.9
154	2016/02/16	16:50:35	65.7	82.1	68.6	54.2
155	2016/02/16	16:50:40	62.7	77.7	68.3	61.9
156	2016/02/16	16:50:45	60.5	73.6	62.0	59.1
157	2016/02/16	16:50:50	63.1	78.2	64.9	58.7
158	2016/02/16	16:50:55	61.4	75.3	63.5	59.7
159	2016/02/16	16:51:00	61.7	78.7	65.0	56.9
160	2016/02/16	16:51:05	63.8	79.3	66.1	56.2
161	2016/02/16	16:51:10	56.7	71.2	64.5	51.4
162	2016/02/16	16:51:15	47.0	60.0	51.4	45.9
163	2016/02/16	16:51:20	56.1	75.2	60.9	47.4
164	2016/02/16	16:51:25	65.1	80.6	66.9	61.0
165	2016/02/16	16:51:30	59.3	73.9	61.9	55.5
166	2016/02/16	16:51:35	44.0	62.4	55.4	41.0
167	2016/02/16	16:51:40	41.1	60.0	41.9	40.3
168	2016/02/16	16:51:45	45.3	67.4	50.3	41.7
169	2016/02/16	16:51:50	45.0	60.9	47.5	41.1
170	2016/02/16	16:51:55	63.4	79.1	65.3	47.5
171	2016/02/16	16:52:00	64.2	80.7	67.2	57.8
172	2016/02/16	16:52:05	50.9	67.8	57.8	50.9
173	2016/02/16	16:52:10	53.9	95.1	59.1	48.4
174	2016/02/16	16:52:15	62.9	80.2	66.2	54.1
175	2016/02/16	16:52:20	63.9	78.8	66.4	61.8

176	2016/02/16	16:52:25	64.3	90.5	66.6	62.5
177	2016/02/16	16:52:30	58.7	74.5	63.6	54.7
178	2016/02/16	16:52:35	61.1	78.6	62.5	54.8
179	2016/02/16	16:52:40	62.0	78.7	65.1	57.8
180	2016/02/16	16:52:45	62.8	78.4	65.4	60.6
181	2016/02/16	16:52:50	61.1	77.9	64.7	57.3
182	2016/02/16	16:52:55	68.8	88.8	71.5	56.1
183	2016/02/16	16:53:00	66.7	81.5	70.0	63.4

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
3	2016/02/16	10:59:02	59.6	80.1	62.9	45.6
4	2016/02/16	10:59:07	62.8	82.0	65.4	60.0
5	2016/02/16	10:59:12	59.8	73.7	61.2	58.6
6	2016/02/16	10:59:17	56.1	70.1	58.6	53.5
7	2016/02/16	10:59:22	51.4	83.7	55.2	47.1
8	2016/02/16	10:59:27	55.9	72.8	58.3	51.0
9	2016/02/16	10:59:32	58.0	80.3	59.7	56.6
10	2016/02/16	10:59:37	56.7	72.6	58.5	55.4
11	2016/02/16	10:59:42	60.5	88.5	63.2	56.7
12	2016/02/16	10:59:47	54.7	68.8	56.7	53.7
13	2016/02/16	10:59:52	58.2	72.6	59.6	56.2
14	2016/02/16	10:59:57	57.4	74.4	58.9	55.8
15	2016/02/16	11:00:02	54.4	74.8	58.1	52.3
16	2016/02/16	11:00:07	48.1	74.9	52.2	46.2
17	2016/02/16	11:00:12	52.9	68.2	55.2	45.9
18	2016/02/16	11:00:17	58.0	74.9	59.8	55.3
19	2016/02/16	11:00:22	63.6	80.3	66.3	55.2
20	2016/02/16	11:00:27	60.1	76.4	66.3	55.6
21	2016/02/16	11:00:32	45.2	58.8	55.5	42.7
22	2016/02/16	11:00:37	41.0	54.1	42.7	40.1
23	2016/02/16	11:00:42	55.9	75.2	59.9	42.2
24	2016/02/16	11:00:47	61.4	80.3	64.4	55.4
25	2016/02/16	11:00:52	45.4	63.1	55.4	41.2
26	2016/02/16	11:00:57	40.0	61.9	41.2	39.1
27	2016/02/16	11:01:02	44.7	58.8	46.6	40.9
28	2016/02/16	11:01:07	53.6	71.5	57.1	46.6
29	2016/02/16	11:01:12	60.3	74.1	61.5	57.2
30	2016/02/16	11:01:17	63.0	83.0	64.8	59.0
31	2016/02/16	11:01:22	57.1	71.0	61.1	56.8
32	2016/02/16	11:01:27	60.0	74.3	61.3	58.1
33	2016/02/16	11:01:32	53.0	68.5	58.7	50.4
34	2016/02/16	11:01:37	60.1	78.2	63.7	50.1
35	2016/02/16	11:01:42	63.4	78.5	64.6	61.9
36	2016/02/16	11:01:47	57.5	74.4	63.6	52.4
37	2016/02/16	11:01:52	51.5	65.8	53.7	49.3
38	2016/02/16	11:01:57	57.6	73.5	58.6	53.7
39	2016/02/16	11:02:02	51.7	69.1	56.6	48.4
40	2016/02/16	11:02:07	51.4	65.2	53.1	46.9
41	2016/02/16	11:02:12	59.7	75.2	61.1	53.1
42	2016/02/16	11:02:17	56.0	70.7	61.0	54.0
43	2016/02/16	11:02:22	57.5	71.1	58.9	54.2
44	2016/02/16	11:02:27	57.9	73.0	60.0	54.7
45	2016/02/16	11:02:32	54.8	71.9	60.2	51.2
46	2016/02/16	11:02:37	43.8	57.1	51.2	41.0
47	2016/02/16	11:02:42	38.4	54.1	41.0	37.7
48	2016/02/16	11:02:47	38.3	54.1	40.3	36.8
49	2016/02/16	11:02:52	40.2	57.1	41.5	39.5
50	2016/02/16	11:02:57	54.0	70.6	57.6	40.1
51	2016/02/16	11:03:02	64.4	86.6	66.8	57.6
52	2016/02/16	11:03:07	54.2	69.0	61.7	53.9
53	2016/02/16	11:03:12	60.8	77.4	62.9	54.7
54	2016/02/16	11:03:17	63.5	84.0	65.0	62.4
55	2016/02/16	11:03:22	54.2	71.7	62.4	52.4
56	2016/02/16	11:03:27	50.8	66.4	52.8	49.1
57	2016/02/16	11:03:32	60.5	80.0	62.3	52.8
58	2016/02/16	11:03:37	58.8	73.0	60.2	57.5
59	2016/02/16	11:03:42	58.8	78.6	61.3	55.5

Measured Noise Level	
58.0	dB(A) Leq

60	2016/02/16	11:03:47	47.2	64.1	55.5	43.6
61	2016/02/16	11:03:52	48.1	65.8	51.7	42.6
62	2016/02/16	11:03:57	61.6	80.6	64.4	51.8
63	2016/02/16	11:04:02	57.1	75.6	64.3	54.0
64	2016/02/16	11:04:07	52.2	69.5	54.0	50.7
65	2016/02/16	11:04:12	60.3	76.4	61.6	52.5
66	2016/02/16	11:04:17	62.4	79.6	63.5	59.7
67	2016/02/16	11:04:22	63.2	77.8	63.8	62.2
68	2016/02/16	11:04:27	61.2	78.5	63.5	58.5
69	2016/02/16	11:04:32	55.5	72.3	58.5	52.7
70	2016/02/16	11:04:37	63.6	83.7	66.4	58.6
71	2016/02/16	11:04:42	55.8	72.5	59.1	54.5
72	2016/02/16	11:04:47	60.8	83.3	62.4	58.3
73	2016/02/16	11:04:52	60.1	76.3	62.5	56.6
74	2016/02/16	11:04:57	47.5	63.1	56.5	43.0
75	2016/02/16	11:05:02	50.5	81.6	56.7	40.6
76	2016/02/16	11:05:07	36.2	61.1	41.8	35.3
77	2016/02/16	11:05:12	35.8	54.1	37.0	34.9
78	2016/02/16	11:05:17	40.7	58.8	43.9	36.9
79	2016/02/16	11:05:22	47.3	61.1	48.7	43.4
80	2016/02/16	11:05:27	45.7	60.1	48.7	41.0
81	2016/02/16	11:05:32	36.6	54.1	41.0	36.4
82	2016/02/16	11:05:37	39.2	54.1	40.7	37.0
83	2016/02/16	11:05:42	54.3	71.4	57.5	40.7
84	2016/02/16	11:05:47	63.5	77.8	64.4	57.5
85	2016/02/16	11:05:52	64.3	82.5	67.2	60.4
86	2016/02/16	11:05:57	60.0	77.8	60.9	59.0
87	2016/02/16	11:06:02	62.6	80.4	63.6	60.1
88	2016/02/16	11:06:07	58.4	74.9	62.2	55.0
89	2016/02/16	11:06:12	46.8	61.9	55.0	42.7
90	2016/02/16	11:06:17	39.9	63.6	42.7	39.8
91	2016/02/16	11:06:22	43.7	73.2	46.2	39.7
92	2016/02/16	11:06:27	53.3	77.9	55.5	44.4
93	2016/02/16	11:06:32	57.4	79.2	58.1	55.5
94	2016/02/16	11:06:37	58.9	75.5	60.0	57.5
95	2016/02/16	11:06:42	56.5	70.0	57.6	55.2
96	2016/02/16	11:06:47	48.1	63.6	55.2	45.1
97	2016/02/16	11:06:52	39.7	54.1	45.1	38.9
98	2016/02/16	11:06:57	39.5	54.1	39.7	38.7
99	2016/02/16	11:07:02	39.8	54.1	41.1	38.6
100	2016/02/16	11:07:07	49.2	64.1	51.4	41.1
101	2016/02/16	11:07:12	50.3	67.7	52.3	47.7
102	2016/02/16	11:07:17	46.7	72.8	47.6	46.4
103	2016/02/16	11:07:22	49.3	61.9	49.7	47.1
104	2016/02/16	11:07:27	47.5	64.9	49.4	46.1
105	2016/02/16	11:07:32	48.5	69.0	52.7	42.2
106	2016/02/16	11:07:37	50.3	71.0	54.8	41.8
107	2016/02/16	11:07:42	43.5	60.1	47.2	38.0
108	2016/02/16	11:07:47	54.7	68.8	56.5	47.2
109	2016/02/16	11:07:52	52.4	76.4	56.2	49.8
110	2016/02/16	11:07:57	42.0	58.8	49.7	38.7
111	2016/02/16	11:08:02	36.5	54.1	38.7	35.7
112	2016/02/16	11:08:07	37.4	54.1	39.1	36.3
113	2016/02/16	11:08:12	38.5	54.1	40.5	36.8
114	2016/02/16	11:08:17	46.0	58.8	47.4	40.5
115	2016/02/16	11:08:22	57.8	76.5	61.3	47.4
116	2016/02/16	11:08:27	59.2	86.5	62.7	54.7
117	2016/02/16	11:08:32	51.2	65.2	54.7	49.4

118	2016/02/16	11:08:37	45.3	61.1	49.4	43.5
119	2016/02/16	11:08:42	57.9	75.1	60.2	47.3
120	2016/02/16	11:08:47	58.8	73.8	60.6	56.3
121	2016/02/16	11:08:52	51.1	65.2	56.3	49.0
122	2016/02/16	11:08:57	63.5	83.1	66.0	52.9
123	2016/02/16	11:09:02	54.4	71.5	64.0	50.8
124	2016/02/16	11:09:07	55.7	71.0	57.3	50.5
125	2016/02/16	11:09:12	52.7	74.9	56.6	50.8
126	2016/02/16	11:09:17	53.5	66.9	54.4	51.3
127	2016/02/16	11:09:22	58.8	77.2	60.8	53.2
128	2016/02/16	11:09:27	53.7	73.4	56.4	52.3
129	2016/02/16	11:09:32	51.1	65.5	54.7	49.3
130	2016/02/16	11:09:37	42.4	58.8	49.3	38.5
131	2016/02/16	11:09:42	36.5	54.1	38.5	36.2
132	2016/02/16	11:09:47	37.7	58.8	39.1	36.3
133	2016/02/16	11:09:52	36.7	54.1	37.5	36.0
134	2016/02/16	11:09:57	36.6	54.1	37.6	35.5
135	2016/02/16	11:10:02	38.4	58.8	39.0	37.4
136	2016/02/16	11:10:07	48.2	66.6	52.1	39.0
137	2016/02/16	11:10:12	61.8	77.0	64.1	52.2
138	2016/02/16	11:10:17	56.8	73.2	63.1	55.1
139	2016/02/16	11:10:22	63.2	78.7	64.5	57.5
140	2016/02/16	11:10:27	53.5	74.3	61.7	49.1
141	2016/02/16	11:10:32	47.7	70.6	50.6	43.5
142	2016/02/16	11:10:37	57.4	75.2	59.0	50.5
143	2016/02/16	11:10:42	63.3	82.3	65.2	59.0
144	2016/02/16	11:10:47	53.8	69.0	62.2	52.5
145	2016/02/16	11:10:52	57.6	75.4	60.6	51.1
146	2016/02/16	11:10:57	61.4	74.8	62.3	60.2
147	2016/02/16	11:11:02	57.9	73.0	62.3	56.1
148	2016/02/16	11:11:07	59.1	78.8	60.0	56.9
149	2016/02/16	11:11:12	53.7	77.4	58.6	48.6
150	2016/02/16	11:11:17	41.8	57.1	48.6	41.0
151	2016/02/16	11:11:22	48.0	65.8	51.2	40.5
152	2016/02/16	11:11:27	59.5	75.7	61.0	51.2
153	2016/02/16	11:11:32	52.0	66.9	59.2	50.6
154	2016/02/16	11:11:37	65.4	93.8	68.4	51.1
155	2016/02/16	11:11:42	58.6	77.3	67.7	51.6
156	2016/02/16	11:11:47	39.0	54.1	51.6	38.6
157	2016/02/16	11:11:52	39.0	54.1	40.1	37.8
158	2016/02/16	11:11:57	42.5	66.4	44.2	39.6
159	2016/02/16	11:12:02	52.0	68.2	55.3	42.2
160	2016/02/16	11:12:07	64.1	87.3	66.8	55.4
161	2016/02/16	11:12:12	51.5	70.9	63.7	47.0
162	2016/02/16	11:12:17	40.4	54.1	47.0	38.8
163	2016/02/16	11:12:22	45.6	61.1	48.8	38.9
164	2016/02/16	11:12:27	55.2	69.4	56.7	48.8
165	2016/02/16	11:12:32	51.6	72.8	55.6	48.8
166	2016/02/16	11:12:37	45.8	61.1	48.8	43.0
167	2016/02/16	11:12:42	41.8	54.1	43.0	40.9
168	2016/02/16	11:12:47	38.7	54.1	42.1	38.1
169	2016/02/16	11:12:52	37.7	54.1	38.8	37.0
170	2016/02/16	11:12:57	38.8	54.1	39.7	37.7
171	2016/02/16	11:13:02	38.2	54.1	39.2	37.4
172	2016/02/16	11:13:07	39.1	57.1	40.6	37.9
173	2016/02/16	11:13:12	38.6	54.1	39.5	37.7
174	2016/02/16	11:13:17	43.0	60.1	45.6	38.2
175	2016/02/16	11:13:22	58.9	76.8	62.5	45.7

176	2016/02/16	11:13:27	62.4	83.1	65.8	56.4
177	2016/02/16	11:13:32	57.7	72.3	59.3	55.6
178	2016/02/16	11:13:37	50.4	71.4	57.1	48.7
179	2016/02/16	11:13:42	50.4	64.5	51.8	48.0
180	2016/02/16	11:13:47	50.9	65.8	53.1	47.4
181	2016/02/16	11:13:52	61.8	81.0	63.5	53.1
182	2016/02/16	11:13:57	61.7	77.0	64.2	59.9
183	2016/02/16	11:14:02	68.7	85.8	71.0	61.0
184	2016/02/16	11:14:07	55.6	73.7	66.7	54.2
185	2016/02/16	11:14:12	58.7	73.8	60.1	54.4
186	2016/02/16	11:14:17	54.9	72.5	57.5	54.4
187	2016/02/16	11:14:22	63.7	84.3	65.2	55.8
188	2016/02/16	11:14:27	57.9	75.4	64.3	55.1
189	2016/02/16	11:14:32	58.5	82.7	59.0	54.9
192	2016/02/16	11:14:55	58.0	77.7	60.2	54.9
193	2016/02/16	11:15:00	48.7	69.3	54.9	46.5
194	2016/02/16	11:15:05	40.9	69.4	46.5	39.4
195	2016/02/16	11:15:10	45.1	71.5	47.8	40.4
196	2016/02/16	11:15:15	43.2	67.7	45.8	41.9
197	2016/02/16	11:15:20	39.9	57.1	41.8	39.1
198	2016/02/16	11:15:25	40.9	57.1	42.6	39.0
199	2016/02/16	11:15:30	54.9	73.4	58.6	42.5
200	2016/02/16	11:15:35	69.2	84.8	70.8	58.6
201	2016/02/16	11:15:40	61.7	79.2	68.3	59.9
202	2016/02/16	11:15:45	59.2	76.1	62.8	56.1
203	2016/02/16	11:15:50	50.6	65.5	56.1	47.1
204	2016/02/16	11:15:55	50.5	76.1	55.2	43.8
205	2016/02/16	11:16:00	52.6	68.7	55.2	49.9
206	2016/02/16	11:16:05	50.8	74.9	52.1	49.3
207	2016/02/16	11:16:10	47.3	73.8	50.2	45.8
208	2016/02/16	11:16:15	50.6	67.5	52.7	45.9
209	2016/02/16	11:16:20	56.5	79.2	58.4	52.8
210	2016/02/16	11:16:25	54.2	74.9	58.4	51.0
211	2016/02/16	11:16:30	46.2	58.8	50.9	43.8
212	2016/02/16	11:16:35	41.0	54.1	43.8	40.3
213	2016/02/16	11:16:40	50.3	66.6	53.7	40.7
214	2016/02/16	11:16:45	60.6	79.1	62.1	53.7
215	2016/02/16	11:16:50	59.4	78.8	61.3	58.5
216	2016/02/16	11:16:55	51.8	74.8	58.4	50.2
217	2016/02/16	11:17:00	40.5	66.1	50.2	39.2
218	2016/02/16	11:17:05	48.9	77.0	52.0	40.7
219	2016/02/16	11:17:10	57.7	76.2	61.0	46.9
220	2016/02/16	11:17:15	64.7	81.9	65.3	61.0
221	2016/02/16	11:17:20	55.6	73.0	63.7	51.3
222	2016/02/16	11:17:25	49.5	70.5	51.9	47.8
223	2016/02/16	11:17:30	60.6	76.7	62.0	51.9
224	2016/02/16	11:17:35	51.2	67.5	59.9	48.6
225	2016/02/16	11:17:40	52.1	67.5	53.6	48.4
226	2016/02/16	11:17:45	56.6	71.2	59.2	51.3
227	2016/02/16	11:17:50	55.5	71.9	59.6	49.9
228	2016/02/16	11:17:55	45.3	61.9	49.9	44.3
229	2016/02/16	11:18:00	45.6	61.1	48.0	42.9
230	2016/02/16	11:18:05	54.9	70.5	56.4	48.1
231	2016/02/16	11:18:10	57.6	71.4	58.4	56.1
232	2016/02/16	11:18:15	56.8	75.0	58.2	55.5
233	2016/02/16	11:18:20	56.2	69.9	57.4	54.8
234	2016/02/16	11:18:25	63.4	77.3	64.6	57.4
235	2016/02/16	11:18:30	59.5	74.9	64.4	58.0

236	2016/02/16	11:18:35	62.9	77.6	64.3	58.0
237	2016/02/16	11:18:40	53.0	68.8	61.5	49.8
238	2016/02/16	11:18:45	52.5	69.8	56.0	46.8
239	2016/02/16	11:18:50	61.2	80.0	62.9	56.0
240	2016/02/16	11:18:55	52.0	70.4	60.6	46.4
241	2016/02/16	11:19:00	37.6	54.1	46.4	37.3
242	2016/02/16	11:19:05	37.3	54.1	38.0	36.9
243	2016/02/16	11:19:10	36.9	54.1	37.5	36.5
244	2016/02/16	11:19:15	52.7	69.3	56.5	37.5
245	2016/02/16	11:19:20	58.5	73.4	60.5	55.8
246	2016/02/16	11:19:25	61.7	80.6	64.3	55.0
247	2016/02/16	11:19:30	55.1	70.4	62.2	54.6
248	2016/02/16	11:19:35	55.9	83.3	58.6	52.4
249	2016/02/16	11:19:40	42.9	61.1	52.3	41.9
250	2016/02/16	11:19:45	51.2	77.8	54.7	42.9
251	2016/02/16	11:19:50	46.9	75.0	50.2	45.2
252	2016/02/16	11:19:55	52.9	67.9	54.4	48.1
253	2016/02/16	11:20:00	50.5	62.5	51.7	49.9
254	2016/02/16	11:20:05	58.8	75.6	60.3	51.1
255	2016/02/16	11:20:10	59.4	73.2	61.1	57.9
256	2016/02/16	11:20:15	61.8	79.0	63.6	60.0
257	2016/02/16	11:20:20	58.1	73.3	60.0	57.3
258	2016/02/16	11:20:25	49.7	65.2	57.2	47.4
259	2016/02/16	11:20:30	48.2	70.4	51.8	43.4
260	2016/02/16	11:20:35	38.1	57.1	47.2	38.1
261	2016/02/16	11:20:40	51.6	70.3	54.9	39.8
262	2016/02/16	11:20:45	57.3	71.2	58.7	54.9
263	2016/02/16	11:20:50	50.8	75.1	55.4	49.3
264	2016/02/16	11:20:55	55.7	70.4	56.8	49.5
265	2016/02/16	11:21:00	51.6	68.8	56.4	48.9
266	2016/02/16	11:21:05	46.3	71.2	49.4	43.2
267	2016/02/16	11:21:10	49.3	74.4	53.2	41.5
268	2016/02/16	11:21:15	61.6	84.1	63.0	53.2
269	2016/02/16	11:21:20	53.6	80.3	60.9	48.0
270	2016/02/16	11:21:25	50.1	67.9	53.8	43.6
271	2016/02/16	11:21:30	62.8	87.7	64.5	53.9
272	2016/02/16	11:21:35	51.6	68.4	61.5	50.3
273	2016/02/16	11:21:40	58.5	72.5	60.3	50.5
274	2016/02/16	11:21:45	61.8	82.4	63.6	59.0
275	2016/02/16	11:21:50	54.0	71.8	62.4	49.2
276	2016/02/16	11:21:55	44.8	61.9	49.2	42.1
277	2016/02/16	11:22:00	62.7	83.0	65.5	48.3
278	2016/02/16	11:22:05	63.7	83.2	65.6	61.1
279	2016/02/16	11:22:10	55.0	69.8	61.1	51.6
280	2016/02/16	11:22:15	45.2	60.1	51.6	42.5
281	2016/02/16	11:22:20	38.4	54.1	42.4	37.6
282	2016/02/16	11:22:25	40.2	57.1	42.4	37.2
283	2016/02/16	11:22:30	42.5	57.1	43.5	41.5
284	2016/02/16	11:22:35	39.2	54.1	41.6	38.0
285	2016/02/16	11:22:40	37.3	54.1	38.4	36.8
286	2016/02/16	11:22:45	42.7	66.4	45.5	36.8
287	2016/02/16	11:22:50	59.8	77.8	63.4	45.5
288	2016/02/16	11:22:55	63.2	79.4	64.6	62.0
289	2016/02/16	11:23:00	58.8	73.7	62.5	57.7
290	2016/02/16	11:23:05	60.7	73.9	61.8	59.1
291	2016/02/16	11:23:10	54.3	71.0	59.6	52.0
292	2016/02/16	11:23:15	59.3	75.9	62.3	52.6
293	2016/02/16	11:23:20	65.7	84.2	67.2	62.3

294	2016/02/16	11:23:25	66.1	82.4	68.2	63.8
295	2016/02/16	11:23:30	68.2	84.2	70.8	64.1
296	2016/02/16	11:23:35	58.2	73.9	64.1	56.6
297	2016/02/16	11:23:40	61.9	75.6	63.0	57.0
298	2016/02/16	11:23:45	63.1	90.3	65.6	60.0
299	2016/02/16	11:23:50	57.4	80.4	60.9	56.9
300	2016/02/16	11:23:55	56.0	75.4	57.3	55.2
301	2016/02/16	11:24:00	51.6	67.5	55.2	49.9
302	2016/02/16	11:24:05	49.8	65.5	53.3	47.7
303	2016/02/16	11:24:10	44.3	61.1	47.7	43.6
304	2016/02/16	11:24:15	43.0	68.5	46.7	40.4
305	2016/02/16	11:24:20	45.6	60.1	48.3	43.5
306	2016/02/16	11:24:25	58.5	78.5	61.3	48.3
307	2016/02/16	11:24:30	60.6	75.2	62.0	58.7
308	2016/02/16	11:24:35	50.4	71.4	58.7	47.3
309	2016/02/16	11:24:40	44.3	67.5	47.3	41.6
310	2016/02/16	11:24:45	56.7	77.5	59.0	45.5
311	2016/02/16	11:24:50	63.2	84.3	63.5	59.1
312	2016/02/16	11:24:55	59.7	74.0	63.4	57.9
313	2016/02/16	11:25:00	56.1	74.3	60.4	52.8
314	2016/02/16	11:25:05	50.6	75.4	54.0	48.4
315	2016/02/16	11:25:10	60.6	78.6	62.8	51.4
316	2016/02/16	11:25:15	58.8	74.5	62.4	57.2
317	2016/02/16	11:25:20	61.8	84.6	65.0	55.8
318	2016/02/16	11:25:25	56.1	71.1	58.6	52.5
319	2016/02/16	11:25:30	58.4	73.7	59.2	58.0
320	2016/02/16	11:25:35	54.9	69.0	58.0	54.6
321	2016/02/16	11:25:40	59.3	74.0	60.5	54.8
322	2016/02/16	11:25:45	57.3	72.3	60.6	54.2
323	2016/02/16	11:25:50	46.2	62.5	54.1	42.8
324	2016/02/16	11:25:55	42.4	58.8	43.0	41.9
325	2016/02/16	11:26:00	45.6	62.5	47.7	42.3
326	2016/02/16	11:26:05	58.6	74.8	61.5	47.7
327	2016/02/16	11:26:10	61.8	76.1	62.7	60.2
328	2016/02/16	11:26:15	54.7	70.3	60.2	53.3
329	2016/02/16	11:26:20	62.5	81.3	63.3	55.1
330	2016/02/16	11:26:25	59.8	76.4	63.1	58.5
331	2016/02/16	11:26:30	51.9	71.6	58.6	47.3
332	2016/02/16	11:26:35	53.6	71.2	57.7	45.6
333	2016/02/16	11:26:40	59.1	74.5	61.0	55.9
334	2016/02/16	11:26:45	61.1	85.5	64.9	53.6
335	2016/02/16	11:26:50	60.8	84.8	66.6	53.4
336	2016/02/16	11:26:55	62.9	86.7	65.9	52.8
337	2016/02/16	11:27:00	59.5	75.3	65.1	58.1
338	2016/02/16	11:27:05	56.1	72.1	59.7	52.3
339	2016/02/16	11:27:10	45.3	65.2	52.2	43.8
340	2016/02/16	11:27:15	42.6	61.1	43.9	41.5
341	2016/02/16	11:27:20	44.1	61.1	46.8	40.9
342	2016/02/16	11:27:25	53.1	68.4	54.2	46.8
343	2016/02/16	11:27:30	53.9	72.5	56.3	52.2
344	2016/02/16	11:27:35	53.9	76.0	58.7	49.5
345	2016/02/16	11:27:40	54.2	69.4	56.9	49.4
346	2016/02/16	11:27:45	56.9	74.2	59.2	53.3
347	2016/02/16	11:27:50	53.3	70.2	56.2	50.3
348	2016/02/16	11:27:55	59.3	76.4	61.4	54.8
349	2016/02/16	11:28:00	50.2	68.8	54.7	47.6
350	2016/02/16	11:28:05	44.5	61.1	48.9	42.9
351	2016/02/16	11:28:10	59.5	80.4	63.1	46.6

352	2016/02/16	11:28:15	65.4	81.3	67.3	62.9
353	2016/02/16	11:28:20	63.6	80.7	67.3	57.3
354	2016/02/16	11:28:25	48.3	65.8	57.2	46.0
355	2016/02/16	11:28:30	50.8	68.1	53.0	45.3
356	2016/02/16	11:28:35	57.0	72.5	58.0	53.0
357	2016/02/16	11:28:40	61.3	88.8	63.8	55.7
358	2016/02/16	11:28:45	53.4	71.3	62.7	49.7
359	2016/02/16	11:28:50	53.1	69.6	54.4	49.5
360	2016/02/16	11:28:55	57.5	73.7	57.9	54.5
361	2016/02/16	11:29:00	58.3	74.0	60.5	55.1
362	2016/02/16	11:29:05	53.1	84.0	56.5	51.2

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
20	2016/02/02	09:31:27	46.2	68.1	47.4	45.3
21	2016/02/02	09:31:32	50.3	81.2	53.8	45.9
22	2016/02/02	09:31:37	47.9	78.1	53.5	45.8
23	2016/02/02	09:31:42	47.0	76.3	49.2	44.1
24	2016/02/02	09:31:47	52.1	70.9	54.0	45.2
25	2016/02/02	09:31:52	62.0	77.3	64.1	54.0
26	2016/02/02	09:31:57	65.0	79.9	67.2	57.1
27	2016/02/02	09:32:02	62.1	75.4	66.8	61.5
28	2016/02/02	09:32:07	56.8	71.7	61.5	53.8
29	2016/02/02	09:32:12	48.5	67.7	53.8	48.1
30	2016/02/02	09:32:17	59.0	78.3	61.3	50.0
31	2016/02/02	09:32:22	58.0	78.2	61.6	52.5
32	2016/02/02	09:32:27	47.6	80.2	52.5	46.6
33	2016/02/02	09:32:32	46.3	73.3	49.1	44.3
34	2016/02/02	09:32:37	47.3	66.1	50.9	43.5
35	2016/02/02	09:32:42	44.9	60.1	46.6	42.9
36	2016/02/02	09:32:47	44.0	63.1	46.3	43.0
37	2016/02/02	09:32:52	42.7	60.1	43.6	41.8
38	2016/02/02	09:32:57	45.3	61.1	46.3	43.0
39	2016/02/02	09:33:02	49.9	66.6	51.1	46.3
40	2016/02/02	09:33:07	49.2	66.6	51.1	47.1
41	2016/02/02	09:33:12	50.8	65.2	51.9	46.9
42	2016/02/02	09:33:17	54.9	72.2	55.9	51.9
43	2016/02/02	09:33:22	55.0	89.2	57.8	52.4
44	2016/02/02	09:33:27	48.2	73.3	57.2	47.8
45	2016/02/02	09:33:32	49.0	71.0	50.4	47.6
46	2016/02/02	09:33:37	55.6	86.0	57.1	50.4
47	2016/02/02	09:33:42	55.2	74.5	57.1	53.1
48	2016/02/02	09:33:47	48.7	64.1	53.0	47.5
49	2016/02/02	09:33:52	47.2	74.0	48.5	46.3
50	2016/02/02	09:33:57	49.4	80.8	52.0	46.3
51	2016/02/02	09:34:02	56.7	76.9	59.5	48.2
54	2016/02/02	09:34:31	49.9	71.1	50.6	47.1
55	2016/02/02	09:34:36	49.5	73.6	51.7	47.2
56	2016/02/02	09:34:41	48.0	70.0	51.2	47.4
57	2016/02/02	09:34:46	47.4	62.5	47.9	46.7
58	2016/02/02	09:34:51	46.5	61.1	46.9	46.2
59	2016/02/02	09:34:56	46.9	64.5	47.9	46.1
60	2016/02/02	09:35:01	47.4	73.2	48.0	46.6
61	2016/02/02	09:35:06	47.2	74.3	48.3	46.7
62	2016/02/02	09:35:11	46.8	68.2	47.1	46.3
63	2016/02/02	09:35:16	47.3	64.1	47.9	46.8
64	2016/02/02	09:35:21	47.7	65.2	48.5	46.9
65	2016/02/02	09:35:26	47.3	66.6	48.0	46.9
66	2016/02/02	09:35:31	46.2	61.1	47.1	45.8
67	2016/02/02	09:35:36	46.4	61.1	46.7	46.1
68	2016/02/02	09:35:41	46.8	63.1	47.9	46.1
69	2016/02/02	09:35:46	47.6	70.8	48.4	47.0
70	2016/02/02	09:35:51	48.4	64.1	50.1	46.8
71	2016/02/02	09:35:56	46.6	63.6	47.1	46.1
72	2016/02/02	09:36:01	46.7	61.9	47.3	46.2
73	2016/02/02	09:36:06	46.3	61.1	47.0	46.0
74	2016/02/02	09:36:11	46.4	60.1	46.7	45.9
75	2016/02/02	09:36:16	47.6	63.6	48.9	46.2
76	2016/02/02	09:36:21	48.1	64.9	49.5	46.8
77	2016/02/02	09:36:26	47.3	65.2	49.0	46.7
78	2016/02/02	09:36:31	47.7	61.1	48.2	47.1

Measured Noise Level	
61.9	dB(A) Leq

79	2016/02/02	09:36:36	49.9	70.7	50.7	47.8
80	2016/02/02	09:36:41	57.1	73.7	59.9	50.7
81	2016/02/02	09:36:46	64.3	80.0	64.7	59.9
82	2016/02/02	09:36:51	62.7	76.1	64.3	61.4
83	2016/02/02	09:36:56	57.2	72.8	61.4	56.2
84	2016/02/02	09:37:01	53.1	69.9	56.2	51.4
85	2016/02/02	09:37:06	53.2	70.8	55.9	50.1
86	2016/02/02	09:37:11	56.4	76.4	57.9	54.2
87	2016/02/02	09:37:16	55.7	69.8	56.9	53.5
88	2016/02/02	09:37:21	57.9	72.4	58.7	56.8
89	2016/02/02	09:37:26	54.4	68.7	57.9	52.5
90	2016/02/02	09:37:31	50.1	65.2	52.5	49.1
91	2016/02/02	09:37:36	48.8	64.1	49.7	47.8
92	2016/02/02	09:37:41	48.1	68.1	49.2	47.8
93	2016/02/02	09:37:46	50.0	68.7	51.9	47.6
94	2016/02/02	09:37:51	62.0	78.2	64.4	52.0
95	2016/02/02	09:37:56	64.3	78.4	65.3	63.0
96	2016/02/02	09:38:01	59.7	74.4	62.9	58.6
97	2016/02/02	09:38:06	59.8	90.2	63.0	54.4
98	2016/02/02	09:38:11	55.4	84.5	58.6	51.7
99	2016/02/02	09:38:16	49.7	66.1	53.9	46.1
100	2016/02/02	09:38:21	44.4	57.1	46.1	43.8
101	2016/02/02	09:38:26	53.6	69.4	56.5	45.1
102	2016/02/02	09:38:31	56.3	73.0	58.2	53.6
103	2016/02/02	09:38:36	49.0	63.1	53.6	46.9
104	2016/02/02	09:38:41	44.1	57.1	46.9	43.2
105	2016/02/02	09:38:46	43.7	61.1	44.9	42.6
106	2016/02/02	09:38:51	46.2	81.3	49.1	42.6
107	2016/02/02	09:38:56	47.2	83.4	51.0	44.8
108	2016/02/02	09:39:01	48.8	83.4	49.7	45.1
109	2016/02/02	09:39:06	53.9	68.1	54.7	49.7
110	2016/02/02	09:39:11	60.0	91.4	61.6	54.7
111	2016/02/02	09:39:16	59.6	74.6	61.7	58.2
112	2016/02/02	09:39:21	53.9	75.1	58.2	50.5
113	2016/02/02	09:39:26	51.0	70.2	52.4	48.0
114	2016/02/02	09:39:31	50.6	65.2	52.2	48.7
115	2016/02/02	09:39:36	43.6	58.9	48.7	42.0
116	2016/02/02	09:39:41	42.8	58.9	44.2	41.4
117	2016/02/02	09:39:46	43.7	57.1	44.1	42.6
118	2016/02/02	09:39:51	41.4	61.1	43.9	40.6
119	2016/02/02	09:39:56	40.9	64.9	42.4	39.7
120	2016/02/02	09:40:01	42.5	58.9	43.4	40.9
121	2016/02/02	09:40:06	50.4	68.4	53.0	42.9
122	2016/02/02	09:40:11	57.2	78.2	59.0	53.0
123	2016/02/02	09:40:16	55.0	76.6	60.1	49.7
124	2016/02/02	09:40:21	44.5	61.9	49.7	43.4
125	2016/02/02	09:40:26	44.2	68.9	45.2	43.4
126	2016/02/02	09:40:31	47.4	61.1	48.3	43.8
127	2016/02/02	09:40:36	50.4	72.7	50.9	48.2
128	2016/02/02	09:40:41	49.7	69.9	51.4	47.5
129	2016/02/02	09:40:46	49.0	65.2	50.1	47.5
130	2016/02/02	09:40:51	57.6	72.0	59.5	50.1
131	2016/02/02	09:40:56	65.8	85.7	67.3	59.5
132	2016/02/02	09:41:01	65.8	90.5	68.7	63.3
133	2016/02/02	09:41:06	63.9	83.4	65.2	63.5
134	2016/02/02	09:41:11	61.8	77.5	64.3	60.3
135	2016/02/02	09:41:16	64.2	78.3	64.5	62.4
136	2016/02/02	09:41:21	65.5	84.7	68.3	63.6

137	2016/02/02	09:41:26	63.4	75.9	64.5	63.3
138	2016/02/02	09:41:31	63.3	75.6	63.6	62.9
139	2016/02/02	09:41:36	63.1	75.6	63.6	62.9
140	2016/02/02	09:41:41	62.9	75.8	63.0	62.8
141	2016/02/02	09:41:46	63.0	77.5	63.6	62.3
142	2016/02/02	09:41:51	65.0	79.8	67.1	62.4
143	2016/02/02	09:41:56	66.5	80.4	68.7	62.8
144	2016/02/02	09:42:01	54.7	69.5	62.8	52.0
145	2016/02/02	09:42:06	46.7	61.1	51.9	45.9
146	2016/02/02	09:42:11	55.1	80.4	56.9	48.0
147	2016/02/02	09:42:16	49.3	69.1	56.9	45.4
148	2016/02/02	09:42:21	50.7	69.7	51.5	45.6
149	2016/02/02	09:42:26	46.8	74.5	49.9	45.3
150	2016/02/02	09:42:31	43.5	58.9	45.4	42.6
151	2016/02/02	09:42:36	41.9	57.1	44.8	40.3
152	2016/02/02	09:42:41	40.4	54.1	40.9	40.0
153	2016/02/02	09:42:46	42.0	58.9	42.5	40.6
154	2016/02/02	09:42:51	48.9	71.4	51.4	42.5
155	2016/02/02	09:42:56	56.5	71.5	57.5	51.4
156	2016/02/02	09:43:01	51.5	68.7	56.7	47.9
157	2016/02/02	09:43:06	46.9	62.5	47.9	46.2
158	2016/02/02	09:43:11	45.3	58.9	46.2	44.2
159	2016/02/02	09:43:16	51.4	66.4	53.1	46.1
160	2016/02/02	09:43:21	52.4	70.2	54.3	49.8
161	2016/02/02	09:43:26	44.8	61.1	49.8	43.3
162	2016/02/02	09:43:31	44.9	63.1	47.4	42.0
163	2016/02/02	09:43:36	50.3	80.0	53.7	44.6
164	2016/02/02	09:43:41	46.3	76.3	50.1	44.1
165	2016/02/02	09:43:46	43.5	67.1	44.5	42.7
166	2016/02/02	09:43:51	45.4	73.7	47.9	42.5
167	2016/02/02	09:43:56	48.9	82.7	52.6	43.1
168	2016/02/02	09:44:01	47.1	74.4	49.3	46.9
169	2016/02/02	09:44:06	49.2	83.2	53.7	45.9
170	2016/02/02	09:44:11	52.2	74.6	54.2	48.4
171	2016/02/02	09:44:16	50.2	67.3	51.9	49.6
172	2016/02/02	09:44:21	49.7	78.4	52.8	47.1
173	2016/02/02	09:44:26	45.5	65.2	47.5	44.3
174	2016/02/02	09:44:31	42.7	60.1	45.8	41.5
175	2016/02/02	09:44:36	43.2	65.9	44.9	41.7
176	2016/02/02	09:44:41	44.7	74.0	48.5	42.8
177	2016/02/02	09:44:46	42.2	66.4	45.1	40.2
178	2016/02/02	09:44:51	45.4	64.9	47.8	42.6
179	2016/02/02	09:44:56	44.0	69.9	46.6	42.3
180	2016/02/02	09:45:01	45.1	58.9	46.7	43.3
181	2016/02/02	09:45:06	47.8	72.9	48.8	46.0
182	2016/02/02	09:45:11	49.8	65.9	50.3	48.4
183	2016/02/02	09:45:16	48.2	74.4	49.7	46.4
184	2016/02/02	09:45:21	47.6	75.2	51.2	44.7
185	2016/02/02	09:45:26	43.5	61.1	44.7	42.8
186	2016/02/02	09:45:31	42.9	58.9	43.9	42.1
187	2016/02/02	09:45:36	44.4	64.9	45.3	42.7
188	2016/02/02	09:45:41	51.8	75.5	53.6	45.2
189	2016/02/02	09:45:46	52.0	71.0	53.6	51.2
190	2016/02/02	09:45:51	50.4	68.7	52.1	49.5
191	2016/02/02	09:45:56	45.6	65.2	49.4	44.8
192	2016/02/02	09:46:01	43.8	60.1	45.6	42.3
193	2016/02/02	09:46:06	44.6	63.6	45.6	44.0
194	2016/02/02	09:46:11	45.9	61.9	47.7	43.7

195	2016/02/02	09:46:16	50.1	70.2	51.8	45.7
196	2016/02/02	09:46:21	49.5	76.8	53.5	46.2
197	2016/02/02	09:46:26	52.4	76.9	54.5	46.0
198	2016/02/02	09:46:31	54.0	76.0	56.3	50.6
199	2016/02/02	09:46:36	46.1	60.1	50.6	45.2
200	2016/02/02	09:46:41	43.7	61.1	45.2	43.0
201	2016/02/02	09:46:46	48.1	77.1	51.5	44.0
202	2016/02/02	09:46:51	42.8	57.1	44.2	42.0
203	2016/02/02	09:46:56	45.2	73.5	48.2	42.6
204	2016/02/02	09:47:01	44.0	60.1	45.9	42.2
205	2016/02/02	09:47:06	42.7	57.1	43.5	41.1
206	2016/02/02	09:47:11	42.4	60.1	43.4	41.9
207	2016/02/02	09:47:16	43.6	64.9	44.9	41.3
208	2016/02/02	09:47:21	44.6	61.9	46.3	43.7
209	2016/02/02	09:47:26	43.6	66.1	45.1	42.6
210	2016/02/02	09:47:31	43.3	66.9	44.4	41.4
211	2016/02/02	09:47:36	42.2	60.1	43.8	41.2
212	2016/02/02	09:47:41	42.1	58.9	43.2	41.4
213	2016/02/02	09:47:46	42.9	68.6	44.4	41.4
214	2016/02/02	09:47:51	44.0	58.9	45.2	41.7
215	2016/02/02	09:47:56	48.5	76.1	49.3	43.9
216	2016/02/02	09:48:01	51.2	67.9	51.9	49.3
217	2016/02/02	09:48:06	50.0	75.0	51.4	49.2
218	2016/02/02	09:48:11	50.1	74.6	52.1	48.7
219	2016/02/02	09:48:16	58.6	74.7	61.3	49.9
220	2016/02/02	09:48:21	55.5	72.4	61.2	53.0
221	2016/02/02	09:48:26	51.9	71.0	55.4	48.4
222	2016/02/02	09:48:31	46.1	61.1	48.3	45.1
223	2016/02/02	09:48:36	50.0	70.5	50.8	47.3
224	2016/02/02	09:48:41	46.5	75.9	49.3	44.9
225	2016/02/02	09:48:46	47.3	80.1	50.2	44.1
226	2016/02/02	09:48:51	54.2	72.7	54.7	50.1
227	2016/02/02	09:48:56	55.7	69.7	56.2	54.5
230	2016/02/02	09:49:02	50.4	68.4	57.7	47.5
231	2016/02/02	09:49:07	47.7	64.1	48.5	46.9
232	2016/02/02	09:49:12	48.8	79.4	52.1	46.7
233	2016/02/02	09:49:17	47.2	62.5	50.3	46.3
234	2016/02/02	09:49:22	48.6	63.6	49.5	46.8
235	2016/02/02	09:49:27	52.0	70.0	54.6	49.0
236	2016/02/02	09:49:32	58.9	74.2	60.2	54.6
237	2016/02/02	09:49:37	51.7	67.9	56.8	50.5
238	2016/02/02	09:49:42	49.2	65.6	50.5	48.7
239	2016/02/02	09:49:47	53.9	70.9	54.8	49.7
240	2016/02/02	09:49:52	52.6	67.1	54.6	51.8
241	2016/02/02	09:49:57	50.2	64.5	51.9	49.6
242	2016/02/02	09:50:02	49.7	73.0	50.5	48.6
243	2016/02/02	09:50:07	48.7	67.3	50.4	47.5
244	2016/02/02	09:50:12	46.5	60.1	47.8	45.9
245	2016/02/02	09:50:17	47.2	61.9	47.9	46.1
246	2016/02/02	09:50:22	49.7	67.1	50.6	46.5
247	2016/02/02	09:50:27	51.7	73.3	53.7	49.0
248	2016/02/02	09:50:32	56.2	74.1	58.6	52.7
249	2016/02/02	09:50:37	55.5	70.9	59.1	51.0
250	2016/02/02	09:50:42	47.7	65.2	51.0	46.0
251	2016/02/02	09:50:47	59.1	72.6	60.4	49.6
252	2016/02/02	09:50:52	59.9	75.1	61.2	58.7
253	2016/02/02	09:50:57	58.9	74.7	60.7	55.0
254	2016/02/02	09:51:02	48.9	82.9	54.9	47.1

255	2016/02/02	09:51:07	45.8	69.1	48.9	45.3
256	2016/02/02	09:51:12	46.4	63.6	47.9	45.2
257	2016/02/02	09:51:17	46.7	71.3	48.9	44.9
258	2016/02/02	09:51:22	43.4	60.1	44.9	42.5
259	2016/02/02	09:51:27	43.8	58.9	44.5	42.8
260	2016/02/02	09:51:32	46.5	62.5	47.9	44.3
261	2016/02/02	09:51:37	45.9	64.5	48.6	44.1
262	2016/02/02	09:51:42	46.3	64.5	47.2	45.3
263	2016/02/02	09:51:47	47.4	62.5	48.2	46.3
264	2016/02/02	09:51:52	47.7	63.6	48.4	46.9
265	2016/02/02	09:51:57	47.8	60.1	48.4	47.4
266	2016/02/02	09:52:02	53.8	73.4	56.2	47.4
267	2016/02/02	09:52:07	59.8	79.5	61.1	56.2
268	2016/02/02	09:52:12	50.6	73.2	57.3	49.8
269	2016/02/02	09:52:17	50.1	66.9	50.5	49.4
270	2016/02/02	09:52:22	54.2	77.4	55.3	50.4
271	2016/02/02	09:52:27	50.6	67.1	54.9	49.1
272	2016/02/02	09:52:32	53.0	67.7	53.1	49.6
273	2016/02/02	09:52:37	53.1	65.9	53.9	52.4
274	2016/02/02	09:52:42	52.0	65.6	52.8	51.1
275	2016/02/02	09:52:47	56.8	71.0	58.9	52.8
276	2016/02/02	09:52:52	61.8	74.6	63.0	58.9
277	2016/02/02	09:52:57	66.9	80.9	68.9	62.9
278	2016/02/02	09:53:02	71.1	83.9	71.2	68.9
279	2016/02/02	09:53:07	74.7	89.1	76.7	71.0
280	2016/02/02	09:53:12	77.7	91.7	78.0	76.7
281	2016/02/02	09:53:17	77.0	89.7	77.8	75.9
282	2016/02/02	09:53:22	77.2	90.4	77.8	76.1
283	2016/02/02	09:53:27	78.1	90.5	78.2	77.7
284	2016/02/02	09:53:32	77.1	89.0	78.1	76.3
285	2016/02/02	09:53:37	75.6	87.8	76.3	75.4
286	2016/02/02	09:53:42	75.0	87.4	76.0	74.5
287	2016/02/02	09:53:47	73.5	86.0	74.6	72.4
288	2016/02/02	09:53:52	70.7	83.6	72.4	70.3
289	2016/02/02	09:53:57	68.8	81.4	70.3	68.1
290	2016/02/02	09:54:02	67.3	80.6	68.1	67.0
291	2016/02/02	09:54:07	65.2	78.3	67.0	64.3
292	2016/02/02	09:54:12	63.9	76.7	65.2	62.1
293	2016/02/02	09:54:17	66.4	79.1	66.5	65.2
294	2016/02/02	09:54:22	65.2	78.7	66.6	64.0
295	2016/02/02	09:54:27	62.0	74.8	64.0	61.4
296	2016/02/02	09:54:32	62.2	80.0	62.6	61.1
297	2016/02/02	09:54:37	60.3	86.8	62.0	59.3
298	2016/02/02	09:54:42	60.3	74.3	62.0	58.9
299	2016/02/02	09:54:47	59.4	71.6	59.7	58.8
300	2016/02/02	09:54:52	56.3	70.6	59.5	54.9
301	2016/02/02	09:54:57	52.5	70.2	54.9	52.1
302	2016/02/02	09:55:02	51.9	73.4	52.9	51.5
303	2016/02/02	09:55:07	53.0	72.7	53.5	51.6
304	2016/02/02	09:55:12	50.9	66.1	53.1	50.3
305	2016/02/02	09:55:17	49.1	64.5	50.5	48.3
306	2016/02/02	09:55:22	47.1	63.1	49.4	45.9
307	2016/02/02	09:55:27	45.8	61.9	47.2	44.8
308	2016/02/02	09:55:32	46.6	61.9	47.7	46.0
309	2016/02/02	09:55:37	46.5	61.9	47.2	45.7
310	2016/02/02	09:55:42	45.1	78.4	47.0	44.6
311	2016/02/02	09:55:47	44.3	58.9	45.1	43.5
312	2016/02/02	09:55:52	43.0	60.1	43.9	42.0

313	2016/02/02	09:55:57	41.7	57.1	43.8	40.8
314	2016/02/02	09:56:02	41.9	62.5	43.0	40.4
315	2016/02/02	09:56:07	42.1	64.5	44.2	41.3
316	2016/02/02	09:56:12	41.8	62.5	42.8	40.5
317	2016/02/02	09:56:17	43.4	61.1	44.9	41.5
318	2016/02/02	09:56:22	42.2	58.9	44.1	41.1
319	2016/02/02	09:56:27	42.4	58.9	43.3	41.0
320	2016/02/02	09:56:32	43.1	63.1	45.3	41.0
321	2016/02/02	09:56:37	43.0	63.6	44.7	41.3
322	2016/02/02	09:56:42	40.1	57.1	41.3	39.2
323	2016/02/02	09:56:47	40.8	58.9	41.8	39.5
324	2016/02/02	09:56:52	41.1	61.1	42.2	40.5
325	2016/02/02	09:56:57	40.2	57.1	41.1	39.3
326	2016/02/02	09:57:02	46.2	69.0	47.7	40.8
327	2016/02/02	09:57:07	46.9	71.0	48.3	45.3
328	2016/02/02	09:57:12	44.4	69.4	46.6	42.1
329	2016/02/02	09:57:17	46.2	75.3	48.1	44.7
330	2016/02/02	09:57:22	45.2	60.1	46.7	45.0
331	2016/02/02	09:57:27	43.6	64.9	45.3	42.5
332	2016/02/02	09:57:32	42.1	58.9	43.8	40.8
333	2016/02/02	09:57:37	42.7	64.9	44.8	40.9
334	2016/02/02	09:57:42	51.6	67.7	55.1	42.9
335	2016/02/02	09:57:47	59.0	73.2	60.0	55.2
336	2016/02/02	09:57:52	50.6	68.9	57.2	48.1
337	2016/02/02	09:57:57	45.6	58.9	48.1	44.4
338	2016/02/02	09:58:02	45.2	61.1	46.4	44.1
339	2016/02/02	09:58:07	46.1	58.9	47.6	44.5
340	2016/02/02	09:58:12	42.4	54.1	45.4	41.1
341	2016/02/02	09:58:17	42.6	57.1	43.2	41.6
342	2016/02/02	09:58:22	42.6	60.1	44.4	41.7
343	2016/02/02	09:58:27	42.8	57.1	43.5	41.8
344	2016/02/02	09:58:32	44.5	70.6	47.4	42.0
345	2016/02/02	09:58:37	46.2	61.9	46.9	43.2
346	2016/02/02	09:58:42	47.1	63.6	47.6	46.1
347	2016/02/02	09:58:47	48.2	62.5	48.8	47.4
348	2016/02/02	09:58:52	50.9	68.2	51.4	48.8
349	2016/02/02	09:58:57	51.3	67.5	53.7	47.7
350	2016/02/02	09:59:02	54.4	68.4	56.4	51.3
351	2016/02/02	09:59:07	48.4	62.5	51.3	46.9
352	2016/02/02	09:59:12	44.7	58.9	47.3	44.0
353	2016/02/02	09:59:17	44.1	58.9	44.6	43.1
354	2016/02/02	09:59:22	42.3	54.1	44.1	41.7
355	2016/02/02	09:59:27	43.0	66.1	43.6	41.9
356	2016/02/02	09:59:32	42.2	54.1	43.4	41.3
357	2016/02/02	09:59:37	42.5	54.1	43.2	42.2
358	2016/02/02	09:59:42	42.0	54.1	42.5	41.3
359	2016/02/02	09:59:47	42.0	54.1	42.5	41.6
360	2016/02/02	09:59:52	43.1	57.1	43.7	42.4
361	2016/02/02	09:59:57	42.6	57.1	43.5	42.1
362	2016/02/02	10:00:02	43.7	57.1	43.8	42.7
363	2016/02/02	10:00:07	45.1	74.3	47.0	43.5
364	2016/02/02	10:00:12	46.4	79.1	47.6	44.7
365	2016/02/02	10:00:17	50.3	72.5	52.2	47.2
366	2016/02/02	10:00:22	55.1	69.4	56.3	52.2
367	2016/02/02	10:00:27	50.4	69.8	52.7	47.0
368	2016/02/02	10:00:32	51.1	67.3	52.7	50.4
369	2016/02/02	10:00:37	55.1	72.3	58.6	50.6
370	2016/02/02	10:00:42	62.5	77.3	63.6	58.6

371	2016/02/02	10:00:47	55.8	77.6	61.3	54.4
372	2016/02/02	10:00:52	55.0	68.1	55.7	53.9
373	2016/02/02	10:00:57	53.0	74.9	56.2	50.0
374	2016/02/02	10:01:02	47.3	79.3	50.2	45.4
375	2016/02/02	10:01:07	51.0	66.9	53.3	48.7
376	2016/02/02	10:01:12	58.5	73.4	59.4	53.3
377	2016/02/02	10:01:17	57.1	79.5	59.9	55.1
378	2016/02/02	10:01:22	60.3	80.5	64.3	54.3
379	2016/02/02	10:01:27	48.4	71.2	64.0	47.1
380	2016/02/02	10:01:32	47.2	77.1	49.3	45.0
381	2016/02/02	10:01:37	51.8	79.0	53.2	48.8
382	2016/02/02	10:01:42	47.6	63.6	52.7	45.9
383	2016/02/02	10:01:47	43.9	63.6	45.9	43.3
384	2016/02/02	10:01:52	45.1	68.7	45.5	43.4

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Measurement Data

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
3	2016/02/16	13:12:01	58.9	74.6	62.0	57.2
4	2016/02/16	13:12:06	61.9	76.5	63.1	60.1
5	2016/02/16	13:12:11	61.7	83.2	64.7	58.8
6	2016/02/16	13:12:16	66.8	82.5	68.4	59.3
7	2016/02/16	13:12:21	60.6	77.6	66.7	59.4
8	2016/02/16	13:12:26	62.4	78.3	64.1	59.3
9	2016/02/16	13:12:31	51.6	70.1	59.5	47.9
10	2016/02/16	13:12:36	50.5	75.7	53.4	47.0
11	2016/02/16	13:12:41	61.4	79.5	63.4	53.4
12	2016/02/16	13:12:46	62.5	90.3	65.4	57.7
13	2016/02/16	13:12:51	60.4	82.0	62.4	56.0
14	2016/02/16	13:12:56	62.0	84.8	65.1	55.6
15	2016/02/16	13:13:01	52.8	71.8	56.5	49.8
16	2016/02/16	13:13:06	68.6	84.5	70.3	56.6
17	2016/02/16	13:13:11	66.6	85.3	67.8	64.0
18	2016/02/16	13:13:16	54.5	71.9	64.0	53.9
19	2016/02/16	13:13:21	54.1	78.0	55.8	52.7
20	2016/02/16	13:13:26	53.4	70.7	56.5	49.5
21	2016/02/16	13:13:31	66.1	81.0	69.3	56.5
22	2016/02/16	13:13:36	72.5	89.2	74.6	69.3
23	2016/02/16	13:13:41	63.5	79.6	69.4	62.8
24	2016/02/16	13:13:46	65.0	81.9	66.6	62.7
25	2016/02/16	13:13:51	63.4	82.4	64.7	62.6
26	2016/02/16	13:13:56	61.1	81.0	65.1	54.0
27	2016/02/16	13:14:01	44.5	57.1	54.0	44.5
28	2016/02/16	13:14:06	59.1	80.5	61.2	45.1
29	2016/02/16	13:14:11	48.6	61.1	59.7	48.4
30	2016/02/16	13:14:16	57.1	74.7	58.3	48.4
31	2016/02/16	13:14:21	64.7	87.4	65.7	57.5
32	2016/02/16	13:14:26	61.1	79.7	65.1	60.5
33	2016/02/16	13:14:31	56.2	72.3	61.5	55.2
34	2016/02/16	13:14:36	55.6	70.2	57.4	53.8
35	2016/02/16	13:14:41	53.3	68.6	54.1	52.5
36	2016/02/16	13:14:46	59.3	72.9	60.2	53.8
37	2016/02/16	13:14:51	66.4	80.4	67.6	59.5
38	2016/02/16	13:14:56	59.1	76.8	67.2	58.0
39	2016/02/16	13:15:01	63.2	79.0	64.6	58.4
40	2016/02/16	13:15:06	63.5	78.2	64.5	62.8
41	2016/02/16	13:15:11	62.1	75.8	63.0	61.8
42	2016/02/16	13:15:16	63.5	77.0	64.8	60.9
43	2016/02/16	13:15:21	59.2	79.9	62.5	56.1
44	2016/02/16	13:15:26	65.4	84.1	66.2	62.6
45	2016/02/16	13:15:31	52.7	65.8	63.5	52.1
46	2016/02/16	13:15:36	52.0	65.8	53.9	50.6
47	2016/02/16	13:15:41	57.1	72.5	58.6	53.9
48	2016/02/16	13:15:46	47.4	65.5	55.2	46.1
49	2016/02/16	13:15:51	57.9	71.9	60.4	47.5
50	2016/02/16	13:15:56	66.7	82.3	69.3	60.4
51	2016/02/16	13:16:01	57.3	82.1	64.0	55.1
52	2016/02/16	13:16:06	63.2	79.4	64.0	59.9
53	2016/02/16	13:16:11	58.0	77.8	63.4	55.8
54	2016/02/16	13:16:16	58.9	77.6	62.9	51.8
55	2016/02/16	13:16:21	45.1	58.9	51.8	44.7
56	2016/02/16	13:16:26	46.8	62.5	47.1	45.2
57	2016/02/16	13:16:31	57.9	73.3	60.5	46.9
58	2016/02/16	13:16:36	58.8	75.3	62.2	53.8
59	2016/02/16	13:16:41	50.9	65.8	54.4	49.0

Measured Noise Level	
64.2	dB(A) Leq

60	2016/02/16	13:16:46	53.1	65.8	54.2	49.7
61	2016/02/16	13:16:51	53.7	68.6	55.0	53.0
62	2016/02/16	13:16:56	65.5	86.3	69.7	53.1
63	2016/02/16	13:17:01	66.9	83.4	71.5	58.6
64	2016/02/16	13:17:06	63.2	82.0	64.4	56.7
65	2016/02/16	13:17:11	57.4	82.4	64.7	50.3
66	2016/02/16	13:17:16	46.1	58.9	50.2	45.7
67	2016/02/16	13:17:21	57.1	73.3	59.5	46.5
68	2016/02/16	13:17:26	62.3	74.2	63.6	59.5
69	2016/02/16	13:17:31	56.8	72.6	59.8	54.4
70	2016/02/16	13:17:36	60.4	76.0	62.4	58.0
71	2016/02/16	13:17:41	61.1	81.1	63.9	57.0
72	2016/02/16	13:17:46	56.5	79.7	60.3	51.2
73	2016/02/16	13:17:51	63.1	82.5	64.9	59.8
74	2016/02/16	13:17:56	59.6	78.8	65.1	55.4
75	2016/02/16	13:18:01	57.7	77.6	59.5	54.2
76	2016/02/16	13:18:06	48.2	64.5	54.2	47.0
77	2016/02/16	13:18:11	56.0	76.2	59.0	46.8
78	2016/02/16	13:18:16	61.4	82.1	63.1	58.5
79	2016/02/16	13:18:21	66.6	82.2	68.4	59.7
80	2016/02/16	13:18:26	63.1	79.9	67.1	60.6
81	2016/02/16	13:18:31	66.6	81.6	68.1	63.1
82	2016/02/16	13:18:36	57.1	70.1	63.1	57.1
83	2016/02/16	13:18:41	54.5	70.1	57.5	52.4
84	2016/02/16	13:18:46	61.0	77.2	62.5	55.1
85	2016/02/16	13:18:51	57.2	71.2	61.0	56.2
86	2016/02/16	13:18:56	61.2	75.6	61.6	58.1
87	2016/02/16	13:19:01	64.0	77.4	64.7	60.9
88	2016/02/16	13:19:06	64.4	82.0	65.9	62.5
89	2016/02/16	13:19:11	61.3	78.7	62.6	59.5
90	2016/02/16	13:19:16	61.7	76.8	62.8	60.8
91	2016/02/16	13:19:21	64.9	78.9	66.0	61.0
92	2016/02/16	13:19:26	61.5	78.7	65.0	60.7
93	2016/02/16	13:19:31	63.6	82.9	65.1	61.4
94	2016/02/16	13:19:36	63.6	80.2	64.3	62.2
95	2016/02/16	13:19:41	60.0	82.7	63.3	55.6
96	2016/02/16	13:19:46	62.4	82.9	65.1	58.6
97	2016/02/16	13:19:51	72.3	89.9	74.1	65.2
98	2016/02/16	13:19:56	58.8	75.7	70.1	53.9
99	2016/02/16	13:20:01	60.1	78.2	61.8	53.8
100	2016/02/16	13:20:06	63.8	83.1	64.8	60.9
101	2016/02/16	13:20:11	61.5	84.4	66.5	53.0
102	2016/02/16	13:20:16	53.7	72.2	55.8	50.0
103	2016/02/16	13:20:21	61.3	82.8	65.1	54.2
104	2016/02/16	13:20:26	60.3	84.1	65.6	58.3
105	2016/02/16	13:20:31	57.5	76.7	59.8	55.7
106	2016/02/16	13:20:36	61.2	90.8	63.6	56.2
107	2016/02/16	13:20:41	52.3	70.2	59.1	51.6
108	2016/02/16	13:20:46	53.0	73.2	54.2	52.0
109	2016/02/16	13:20:51	57.7	75.8	59.8	52.7
110	2016/02/16	13:20:56	49.6	64.1	54.1	48.5
111	2016/02/16	13:21:01	54.6	73.9	55.7	51.7
112	2016/02/16	13:21:06	69.5	87.1	74.0	52.4
113	2016/02/16	13:21:11	77.0	91.7	79.5	73.3
114	2016/02/16	13:21:16	58.6	77.3	73.3	54.8
115	2016/02/16	13:21:21	46.5	65.8	54.8	46.3
116	2016/02/16	13:21:26	55.4	78.8	59.8	45.9
117	2016/02/16	13:21:31	65.3	85.9	68.5	57.5

118	2016/02/16	13:21:36	55.6	74.9	59.4	51.8
119	2016/02/16	13:21:41	66.1	81.5	68.6	59.5
120	2016/02/16	13:21:46	62.6	84.3	64.5	60.9
121	2016/02/16	13:21:51	63.6	83.3	66.3	59.7
122	2016/02/16	13:21:56	66.4	82.7	68.2	59.5
123	2016/02/16	13:22:01	58.6	79.3	68.0	54.4
124	2016/02/16	13:22:06	57.1	75.8	58.9	52.7
125	2016/02/16	13:22:11	61.6	78.2	64.4	57.1
126	2016/02/16	13:22:16	68.9	91.0	73.3	64.4
127	2016/02/16	13:22:21	61.3	83.8	65.0	56.8
128	2016/02/16	13:22:26	61.0	86.6	63.3	55.2
129	2016/02/16	13:22:31	44.4	60.1	58.7	44.1
130	2016/02/16	13:22:36	52.6	69.9	55.9	43.7
131	2016/02/16	13:22:41	58.5	78.7	59.5	56.0
132	2016/02/16	13:22:46	60.5	78.9	62.8	57.7
133	2016/02/16	13:22:51	56.6	75.9	60.3	50.8
134	2016/02/16	13:22:56	61.7	78.5	63.4	59.4
135	2016/02/16	13:23:01	61.0	85.8	64.6	55.3
136	2016/02/16	13:23:06	51.3	70.1	55.3	50.7
137	2016/02/16	13:23:11	54.2	70.3	56.4	50.8
138	2016/02/16	13:23:16	54.4	68.6	56.2	52.7
139	2016/02/16	13:23:21	53.2	72.1	55.0	52.3
140	2016/02/16	13:23:26	55.7	72.3	58.8	52.1
141	2016/02/16	13:23:31	65.0	80.4	66.0	58.8
142	2016/02/16	13:23:36	61.8	81.0	64.6	58.7
143	2016/02/16	13:23:41	65.3	82.1	66.2	64.5
144	2016/02/16	13:23:46	63.2	75.6	64.5	62.5
145	2016/02/16	13:23:51	59.5	72.9	62.6	58.2
146	2016/02/16	13:23:56	58.1	71.4	58.8	57.4
147	2016/02/16	13:24:01	58.6	71.2	59.0	57.8
148	2016/02/16	13:24:06	60.7	77.4	63.8	57.9
149	2016/02/16	13:24:11	65.1	84.0	67.4	60.9
150	2016/02/16	13:24:16	63.0	84.9	64.0	60.8
151	2016/02/16	13:24:21	55.7	77.1	63.8	54.9
152	2016/02/16	13:24:26	61.2	83.1	63.7	55.3
153	2016/02/16	13:24:31	67.2	86.9	70.2	56.3
154	2016/02/16	13:24:36	66.5	82.5	69.0	63.0
155	2016/02/16	13:24:41	61.1	78.0	67.1	56.2
156	2016/02/16	13:24:46	53.4	67.9	56.2	53.1
157	2016/02/16	13:24:51	52.8	69.0	54.5	51.4
158	2016/02/16	13:24:56	54.9	70.5	57.5	50.9
159	2016/02/16	13:25:01	61.3	76.7	63.1	57.5
160	2016/02/16	13:25:06	55.0	69.3	59.6	53.9
161	2016/02/16	13:25:11	53.9	67.5	55.9	51.7
162	2016/02/16	13:25:16	51.1	67.9	52.5	50.4
163	2016/02/16	13:25:21	50.8	64.1	51.5	49.8
164	2016/02/16	13:25:26	51.6	69.9	52.6	50.6
165	2016/02/16	13:25:31	57.2	74.8	59.0	50.4
166	2016/02/16	13:25:36	57.7	71.0	58.9	56.8
167	2016/02/16	13:25:41	61.3	83.8	63.0	58.4
168	2016/02/16	13:25:46	53.2	72.5	62.8	51.4
169	2016/02/16	13:25:51	59.5	77.0	61.5	51.5
170	2016/02/16	13:25:56	81.4	96.2	84.1	59.0
171	2016/02/16	13:26:01	67.3	86.7	83.0	65.5
172	2016/02/16	13:26:06	60.6	80.1	65.5	56.2
173	2016/02/16	13:26:11	54.6	74.5	58.8	50.6
174	2016/02/16	13:26:16	65.1	78.5	66.2	58.9
175	2016/02/16	13:26:21	58.7	77.9	64.2	55.5

176	2016/02/16	13:26:26	46.9	66.4	55.5	45.4
177	2016/02/16	13:26:31	58.7	81.3	62.2	44.8
178	2016/02/16	13:26:36	55.3	76.4	62.6	50.0
179	2016/02/16	13:26:41	52.1	70.1	56.0	47.3
180	2016/02/16	13:26:46	64.4	80.0	65.8	56.0
181	2016/02/16	13:26:51	61.8	77.9	64.2	56.9
182	2016/02/16	13:26:56	51.7	71.0	56.9	48.9
183	2016/02/16	13:27:01	62.9	81.0	63.5	55.6

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Measurement Data

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
3	2016/02/16	15:33:00	46.4	68.9	48.5	42.8
4	2016/02/16	15:33:05	58.5	78.4	61.1	48.5
5	2016/02/16	15:33:10	62.7	88.9	66.3	59.6
6	2016/02/16	15:33:15	57.4	84.1	61.6	54.8
7	2016/02/16	15:33:20	52.8	72.8	56.2	48.6
8	2016/02/16	15:33:25	56.6	77.2	59.3	53.7
9	2016/02/16	15:33:30	47.3	68.0	57.6	44.9
10	2016/02/16	15:33:35	46.0	75.9	49.1	43.2
11	2016/02/16	15:33:40	45.6	71.5	48.8	41.0
12	2016/02/16	15:33:45	53.8	80.3	56.8	46.9
13	2016/02/16	15:33:50	61.0	75.3	62.7	56.9
14	2016/02/16	15:33:55	58.0	73.6	61.1	55.5
15	2016/02/16	15:34:00	50.9	66.8	55.4	49.0
16	2016/02/16	15:34:05	43.0	66.8	49.1	40.8
17	2016/02/16	15:34:10	42.3	63.0	43.7	40.6
18	2016/02/16	15:34:15	54.8	72.8	58.6	41.3
19	2016/02/16	15:34:20	56.6	71.6	59.4	53.8
20	2016/02/16	15:34:25	50.0	65.5	53.8	46.3
21	2016/02/16	15:34:30	43.1	58.8	46.2	42.0
22	2016/02/16	15:34:35	38.2	57.0	42.0	37.8
23	2016/02/16	15:34:40	38.2	58.8	39.2	37.4
24	2016/02/16	15:34:45	45.1	60.0	46.5	38.3
25	2016/02/16	15:34:50	54.8	71.2	58.1	46.4
26	2016/02/16	15:34:55	61.4	87.4	65.1	56.0
27	2016/02/16	15:35:00	49.6	64.8	55.9	48.8
28	2016/02/16	15:35:05	57.1	72.1	59.5	48.9
29	2016/02/16	15:35:10	61.4	77.0	61.9	59.4
30	2016/02/16	15:35:15	56.8	72.3	62.0	54.0
31	2016/02/16	15:35:20	50.3	65.8	54.0	49.2
32	2016/02/16	15:35:25	47.5	65.8	49.2	45.4
33	2016/02/16	15:35:30	47.3	71.2	49.2	44.9
34	2016/02/16	15:35:35	44.5	61.0	47.0	42.7
35	2016/02/16	15:35:40	52.9	70.2	54.0	46.3
36	2016/02/16	15:35:45	45.2	60.0	51.8	42.8
37	2016/02/16	15:35:50	44.1	61.8	46.4	42.6
38	2016/02/16	15:35:55	43.8	67.8	45.3	42.1
39	2016/02/16	15:36:00	45.4	69.2	48.2	41.6
40	2016/02/16	15:36:05	51.6	69.6	54.7	45.9
41	2016/02/16	15:36:10	54.1	72.2	57.3	50.5
42	2016/02/16	15:36:15	56.0	72.4	58.8	50.5
43	2016/02/16	15:36:20	59.3	76.6	60.8	58.0
44	2016/02/16	15:36:25	59.0	79.3	62.1	54.0
45	2016/02/16	15:36:30	48.6	63.5	54.0	47.4
46	2016/02/16	15:36:35	54.3	68.9	56.0	49.6
47	2016/02/16	15:36:40	48.3	64.0	52.8	47.1
48	2016/02/16	15:36:45	44.7	60.0	47.1	42.3
49	2016/02/16	15:36:50	39.5	54.0	42.3	38.3
50	2016/02/16	15:36:55	40.1	57.0	42.8	37.3
51	2016/02/16	15:37:00	38.6	54.0	39.8	37.6
52	2016/02/16	15:37:05	47.0	65.8	50.5	38.5
53	2016/02/16	15:37:10	60.1	79.0	62.4	50.6
54	2016/02/16	15:37:15	54.6	70.4	58.5	51.7
55	2016/02/16	15:37:20	46.1	65.8	51.8	42.7
56	2016/02/16	15:37:25	40.3	54.0	42.7	39.5
57	2016/02/16	15:37:30	45.6	61.8	46.9	41.3
58	2016/02/16	15:37:35	55.1	74.3	57.5	46.3
59	2016/02/16	15:37:40	62.3	87.7	65.2	57.6

Measured Noise Level	
57.7	dB(A) Leq

60	2016/02/16	15:37:45	60.6	80.9	65.2	58.2
61	2016/02/16	15:37:50	55.5	74.7	62.9	52.9
62	2016/02/16	15:37:55	59.3	75.2	61.7	52.9
63	2016/02/16	15:38:00	53.6	70.5	61.7	51.2
64	2016/02/16	15:38:05	58.3	73.9	59.9	51.2
65	2016/02/16	15:38:10	60.1	75.2	62.3	57.9
66	2016/02/16	15:38:15	64.8	90.1	68.3	58.5
67	2016/02/16	15:38:20	48.8	67.0	61.9	46.4
68	2016/02/16	15:38:25	42.3	60.0	46.4	41.4
69	2016/02/16	15:38:30	45.6	69.0	48.5	41.9
70	2016/02/16	15:38:35	42.2	54.0	45.6	41.4
71	2016/02/16	15:38:40	42.9	58.8	44.5	41.1
72	2016/02/16	15:38:45	42.7	60.0	44.1	41.7
73	2016/02/16	15:38:50	47.9	62.4	49.4	41.7
74	2016/02/16	15:38:55	48.6	64.4	50.9	45.4
75	2016/02/16	15:39:00	47.1	64.0	49.4	43.6
76	2016/02/16	15:39:05	59.1	75.1	61.4	49.2
77	2016/02/16	15:39:10	56.8	74.2	60.6	53.9
78	2016/02/16	15:39:15	56.7	73.7	59.4	51.5
79	2016/02/16	15:39:20	57.2	74.7	60.3	55.8
80	2016/02/16	15:39:25	58.9	79.9	62.2	55.8
81	2016/02/16	15:39:30	59.5	78.8	62.1	55.3
82	2016/02/16	15:39:35	51.2	68.1	60.8	49.9
83	2016/02/16	15:39:40	57.4	77.5	60.7	50.5
84	2016/02/16	15:39:45	56.1	74.4	61.0	54.1
85	2016/02/16	15:39:50	59.4	76.0	62.3	55.7
86	2016/02/16	15:39:55	51.8	74.8	55.6	49.9
87	2016/02/16	15:40:00	60.7	80.4	64.6	52.5
88	2016/02/16	15:40:05	61.5	78.2	65.1	59.8
89	2016/02/16	15:40:10	57.1	73.4	61.1	54.2
90	2016/02/16	15:40:15	51.4	71.9	55.3	49.2
91	2016/02/16	15:40:20	55.3	73.2	57.3	49.0
92	2016/02/16	15:40:25	60.9	82.6	63.5	57.4
93	2016/02/16	15:40:30	53.3	72.9	57.7	52.2
94	2016/02/16	15:40:35	58.1	80.0	61.7	52.2
95	2016/02/16	15:40:40	51.6	69.4	61.4	48.9
96	2016/02/16	15:40:45	56.2	73.7	60.2	48.0
97	2016/02/16	15:40:50	62.9	78.4	64.5	60.2
98	2016/02/16	15:40:55	66.1	83.0	67.7	62.0
99	2016/02/16	15:41:00	65.5	86.8	69.4	59.4
100	2016/02/16	15:41:05	51.0	64.8	59.4	50.0
101	2016/02/16	15:41:10	46.1	63.0	49.9	43.8
102	2016/02/16	15:41:15	57.8	75.6	61.2	48.1
103	2016/02/16	15:41:20	62.2	76.2	63.5	60.7
104	2016/02/16	15:41:25	62.9	82.4	66.6	56.6
105	2016/02/16	15:41:30	45.7	64.4	56.6	42.8
106	2016/02/16	15:41:35	40.8	54.0	42.9	39.1
107	2016/02/16	15:41:40	42.8	66.8	44.3	40.5
108	2016/02/16	15:41:45	40.1	65.5	41.7	38.8
109	2016/02/16	15:41:50	39.0	54.0	41.5	38.4
110	2016/02/16	15:41:55	41.7	58.8	43.5	38.5
111	2016/02/16	15:42:00	43.4	61.8	45.4	41.6
112	2016/02/16	15:42:05	46.6	63.0	49.5	41.8
113	2016/02/16	15:42:10	58.0	73.0	59.6	49.6
114	2016/02/16	15:42:15	55.6	71.9	59.8	53.2
115	2016/02/16	15:42:20	49.2	65.8	53.3	47.8
116	2016/02/16	15:42:25	50.9	66.8	53.1	48.2
117	2016/02/16	15:42:30	61.6	81.2	63.4	53.1

118	2016/02/16	15:42:35	55.5	70.3	62.5	53.3
119	2016/02/16	15:42:40	50.9	68.1	53.3	50.4
120	2016/02/16	15:42:45	45.2	65.5	50.4	44.0
121	2016/02/16	15:42:50	50.8	65.1	52.3	43.9
122	2016/02/16	15:42:55	61.1	85.7	65.3	50.9
123	2016/02/16	15:43:00	65.5	87.0	68.4	63.6
124	2016/02/16	15:43:05	56.4	71.5	63.8	55.0
125	2016/02/16	15:43:10	59.4	76.5	62.0	54.7
126	2016/02/16	15:43:15	66.7	82.0	69.6	62.0
127	2016/02/16	15:43:20	70.5	85.9	73.2	65.6
128	2016/02/16	15:43:25	64.2	89.1	67.7	62.4
129	2016/02/16	15:43:30	49.5	64.0	62.3	49.6
130	2016/02/16	15:43:35	59.0	75.3	62.5	49.5
131	2016/02/16	15:43:40	64.0	85.8	65.9	61.0
132	2016/02/16	15:43:45	52.9	70.0	61.0	50.2
133	2016/02/16	15:43:50	46.2	69.4	50.2	45.7
134	2016/02/16	15:43:55	53.9	81.6	58.0	46.4
135	2016/02/16	15:44:00	64.0	87.2	66.6	57.0
136	2016/02/16	15:44:05	59.1	77.0	63.6	57.2
137	2016/02/16	15:44:10	51.9	72.6	58.3	48.9
138	2016/02/16	15:44:15	47.9	63.5	50.9	44.3
139	2016/02/16	15:44:20	57.2	72.9	58.4	50.6
140	2016/02/16	15:44:25	70.1	87.2	73.4	57.5
141	2016/02/16	15:44:30	63.1	79.2	72.7	60.9
142	2016/02/16	15:44:35	63.3	83.7	65.8	61.0
143	2016/02/16	15:44:40	61.3	85.1	66.9	58.2
144	2016/02/16	15:44:45	60.1	78.0	63.0	56.3
145	2016/02/16	15:44:50	49.9	67.2	56.3	47.9
146	2016/02/16	15:44:55	46.2	68.6	48.7	44.5
147	2016/02/16	15:45:00	57.4	73.1	60.1	45.3
148	2016/02/16	15:45:05	53.9	70.4	59.1	50.7
149	2016/02/16	15:45:10	46.1	66.8	50.7	45.4
150	2016/02/16	15:45:15	43.3	69.8	46.3	40.2
151	2016/02/16	15:45:20	46.0	82.5	49.0	41.4
152	2016/02/16	15:45:25	46.6	73.8	49.0	46.8
155	2016/02/16	15:45:38	48.2	82.6	54.4	46.3
156	2016/02/16	15:45:43	62.0	80.7	65.5	48.0
157	2016/02/16	15:45:48	58.0	73.2	65.1	54.9
158	2016/02/16	15:45:53	57.5	74.6	60.1	54.1
159	2016/02/16	15:45:58	56.2	75.6	61.2	53.1
160	2016/02/16	15:46:03	58.5	77.1	61.5	54.5
161	2016/02/16	15:46:08	57.8	79.0	59.5	55.9
162	2016/02/16	15:46:13	56.4	73.0	58.8	54.1
163	2016/02/16	15:46:18	65.3	90.8	69.3	58.7
164	2016/02/16	15:46:23	60.5	77.0	63.8	56.5
165	2016/02/16	15:46:28	62.8	77.9	64.7	61.0
166	2016/02/16	15:46:33	58.2	72.3	64.5	57.0
167	2016/02/16	15:46:38	61.0	78.6	63.1	59.1
168	2016/02/16	15:46:43	64.4	81.2	67.8	56.7
169	2016/02/16	15:46:48	60.1	77.1	67.7	57.4
170	2016/02/16	15:46:53	51.0	67.6	57.4	49.0
171	2016/02/16	15:46:58	49.5	63.5	50.3	48.5
172	2016/02/16	15:47:03	58.2	72.4	59.3	49.9
173	2016/02/16	15:47:08	62.7	81.8	64.6	58.9
174	2016/02/16	15:47:13	64.7	79.3	67.1	60.8
175	2016/02/16	15:47:18	61.2	78.2	64.5	58.5
176	2016/02/16	15:47:23	61.6	81.3	66.4	58.0
177	2016/02/16	15:47:28	55.6	73.0	58.2	52.0

178	2016/02/16	15:47:33	57.3	75.1	61.5	51.7
179	2016/02/16	15:47:38	57.3	73.0	59.6	50.8
180	2016/02/16	15:47:43	61.9	89.2	63.9	59.7
181	2016/02/16	15:47:48	57.9	86.6	65.2	50.9
182	2016/02/16	15:47:53	43.2	58.8	50.9	41.1
183	2016/02/16	15:47:58	41.3	61.0	42.7	40.3
184	2016/02/16	15:48:03	41.2	57.0	43.9	38.6
185	2016/02/16	15:48:08	42.3	60.0	44.2	38.6
186	2016/02/16	15:48:13	42.1	57.0	43.6	41.0
187	2016/02/16	15:48:18	53.7	70.5	56.5	43.5
188	2016/02/16	15:48:23	57.8	75.8	61.3	52.0
189	2016/02/16	15:48:28	57.0	78.4	60.0	50.9
190	2016/02/16	15:48:33	60.5	82.5	63.0	57.6
191	2016/02/16	15:48:38	52.5	68.3	57.6	49.8
192	2016/02/16	15:48:43	45.3	61.0	49.8	42.9
193	2016/02/16	15:48:48	40.7	61.0	43.4	38.7
194	2016/02/16	15:48:53	40.7	57.0	42.7	38.9
195	2016/02/16	15:48:58	41.2	61.0	44.7	38.3
196	2016/02/16	15:49:03	41.4	60.0	44.5	38.0
197	2016/02/16	15:49:08	46.2	81.5	50.6	39.1
198	2016/02/16	15:49:13	54.8	72.1	56.3	47.4
199	2016/02/16	15:49:18	54.4	70.6	56.8	52.5
200	2016/02/16	15:49:23	61.1	81.0	63.8	56.8
201	2016/02/16	15:49:28	54.8	68.0	57.6	54.1
202	2016/02/16	15:49:33	54.7	73.2	56.4	52.5
203	2016/02/16	15:49:38	56.6	74.6	60.6	49.5
204	2016/02/16	15:49:43	44.0	58.8	49.5	42.2
205	2016/02/16	15:49:48	41.7	58.8	45.7	40.4
206	2016/02/16	15:49:53	55.6	72.4	59.2	40.8
207	2016/02/16	15:49:58	55.3	73.4	59.9	52.2
208	2016/02/16	15:50:03	51.2	67.0	53.8	49.0
209	2016/02/16	15:50:08	58.8	74.3	60.9	53.8
210	2016/02/16	15:50:13	57.8	73.5	60.0	55.2
211	2016/02/16	15:50:18	51.2	67.2	55.2	49.9
212	2016/02/16	15:50:23	61.9	78.6	65.5	50.0
213	2016/02/16	15:50:28	57.9	75.3	65.5	54.9
214	2016/02/16	15:50:33	55.1	73.5	57.5	52.1
215	2016/02/16	15:50:38	63.5	88.3	67.5	57.5
216	2016/02/16	15:50:43	54.2	68.6	58.7	54.1
217	2016/02/16	15:50:48	49.2	65.1	54.8	45.6
218	2016/02/16	15:50:53	40.0	54.0	45.6	39.4
219	2016/02/16	15:50:58	43.0	58.8	44.3	39.4
220	2016/02/16	15:51:03	49.4	69.0	53.3	42.4
221	2016/02/16	15:51:08	58.4	75.6	60.6	53.4
222	2016/02/16	15:51:13	49.5	64.4	54.8	47.2
223	2016/02/16	15:51:18	47.9	62.4	48.4	46.6
224	2016/02/16	15:51:23	45.8	58.8	48.2	43.0
225	2016/02/16	15:51:28	41.1	54.0	43.0	40.0
226	2016/02/16	15:51:33	41.0	58.8	42.8	39.8
227	2016/02/16	15:51:38	43.8	60.0	44.4	40.7
228	2016/02/16	15:51:43	42.5	58.8	44.1	41.2
229	2016/02/16	15:51:48	39.3	57.0	42.2	38.1
230	2016/02/16	15:51:53	42.4	54.0	44.3	38.0
231	2016/02/16	15:51:58	46.1	61.8	48.2	41.1
232	2016/02/16	15:52:03	60.1	76.0	61.0	48.2
233	2016/02/16	15:52:08	56.4	73.6	61.1	52.0
234	2016/02/16	15:52:13	47.5	61.8	52.0	46.1
235	2016/02/16	15:52:18	44.1	60.0	46.1	43.1

236	2016/02/16	15:52:23	48.1	68.9	51.4	43.7
237	2016/02/16	15:52:28	58.8	82.1	61.8	51.4
238	2016/02/16	15:52:33	53.5	68.8	58.3	52.0
239	2016/02/16	15:52:38	52.8	71.9	57.1	49.1
240	2016/02/16	15:52:43	44.9	57.0	49.1	44.0
241	2016/02/16	15:52:48	41.7	57.0	44.0	40.7
242	2016/02/16	15:52:53	42.2	57.0	44.5	40.8
243	2016/02/16	15:52:58	42.9	57.0	45.2	39.9
244	2016/02/16	15:53:03	48.5	64.4	51.4	44.2
245	2016/02/16	15:53:08	57.8	79.6	61.0	51.2
246	2016/02/16	15:53:13	48.4	61.8	57.4	47.8
247	2016/02/16	15:53:18	53.6	76.0	56.1	45.9
248	2016/02/16	15:53:23	60.9	85.6	64.2	56.1
249	2016/02/16	15:53:28	58.3	75.2	61.6	54.8
250	2016/02/16	15:53:33	57.9	75.5	61.4	51.9
251	2016/02/16	15:53:38	57.2	72.8	61.7	53.9
252	2016/02/16	15:53:43	49.8	67.8	53.9	48.6
253	2016/02/16	15:53:48	44.3	58.8	50.7	43.3
254	2016/02/16	15:53:53	43.6	58.8	45.4	42.2
255	2016/02/16	15:53:58	46.2	60.0	47.6	42.2
256	2016/02/16	15:54:03	54.9	73.2	57.9	46.0
257	2016/02/16	15:54:08	59.2	79.3	63.0	53.1
258	2016/02/16	15:54:13	58.6	75.1	61.1	52.6
259	2016/02/16	15:54:18	52.6	67.4	58.0	50.0
260	2016/02/16	15:54:23	47.0	58.8	50.0	46.4
261	2016/02/16	15:54:28	49.3	63.5	51.2	47.2
262	2016/02/16	15:54:33	61.6	78.8	63.9	51.2
263	2016/02/16	15:54:38	56.6	72.8	62.7	54.3
264	2016/02/16	15:54:43	57.7	71.2	59.1	54.2
265	2016/02/16	15:54:48	57.7	72.9	60.2	54.2
266	2016/02/16	15:54:53	49.4	64.0	54.2	48.3
267	2016/02/16	15:54:58	58.0	72.9	60.3	48.9
268	2016/02/16	15:55:03	52.0	69.0	58.2	48.7
269	2016/02/16	15:55:08	45.5	61.0	48.7	44.8
270	2016/02/16	15:55:13	54.0	71.0	57.5	45.2
271	2016/02/16	15:55:18	59.1	75.2	61.9	54.9
272	2016/02/16	15:55:23	49.0	63.5	54.8	47.0
273	2016/02/16	15:55:28	41.7	54.0	46.9	40.6
274	2016/02/16	15:55:33	39.4	57.0	41.6	37.9
275	2016/02/16	15:55:38	44.2	60.0	46.7	38.9
276	2016/02/16	15:55:43	56.1	71.1	58.6	45.9
277	2016/02/16	15:55:48	52.1	67.4	56.5	49.0
278	2016/02/16	15:55:53	46.6	58.8	48.9	46.2
279	2016/02/16	15:55:58	40.5	54.0	46.3	38.6
280	2016/02/16	15:56:03	38.9	54.0	39.9	37.6
281	2016/02/16	15:56:08	38.4	64.4	39.3	37.7
282	2016/02/16	15:56:13	39.0	54.0	39.9	37.4
283	2016/02/16	15:56:18	37.4	54.0	39.2	36.9
284	2016/02/16	15:56:23	37.4	54.0	37.8	36.8
285	2016/02/16	15:56:28	36.6	54.0	37.6	36.4
286	2016/02/16	15:56:33	41.9	60.0	43.7	37.1
287	2016/02/16	15:56:38	46.8	60.0	47.6	43.7
288	2016/02/16	15:56:43	59.0	80.4	62.5	47.0
289	2016/02/16	15:56:48	61.5	77.7	63.0	60.8
290	2016/02/16	15:56:53	58.4	75.9	62.6	53.5
291	2016/02/16	15:56:58	56.7	70.8	57.7	52.8
292	2016/02/16	15:57:03	58.0	75.1	60.3	54.5
293	2016/02/16	15:57:08	50.7	66.0	54.5	49.0

294	2016/02/16	15:57:13	58.4	76.3	61.1	49.4
295	2016/02/16	15:57:18	62.1	86.2	65.7	56.6
296	2016/02/16	15:57:23	49.8	63.0	56.6	48.6
297	2016/02/16	15:57:28	47.5	61.0	48.8	46.4
298	2016/02/16	15:57:33	58.8	74.7	61.6	48.5
299	2016/02/16	15:57:38	60.4	77.1	63.8	55.6
300	2016/02/16	15:57:43	50.2	64.8	55.6	48.8
301	2016/02/16	15:57:48	61.8	87.1	65.3	52.0
302	2016/02/16	15:57:53	62.0	77.1	63.6	59.5
303	2016/02/16	15:57:58	59.0	74.6	61.6	56.2
304	2016/02/16	15:58:03	57.1	73.4	61.9	54.9
305	2016/02/16	15:58:08	49.6	63.5	54.9	48.1
306	2016/02/16	15:58:13	44.7	58.8	48.1	42.2
307	2016/02/16	15:58:18	44.9	61.0	46.3	41.7
308	2016/02/16	15:58:23	45.0	62.4	47.6	41.4
309	2016/02/16	15:58:28	40.4	54.0	42.5	37.6
310	2016/02/16	15:58:33	43.0	58.8	44.7	40.8
311	2016/02/16	15:58:38	52.2	69.8	55.4	44.6
312	2016/02/16	15:58:43	62.0	82.6	64.0	55.4
313	2016/02/16	15:58:48	56.3	73.2	62.8	55.4
314	2016/02/16	15:58:53	60.0	75.6	62.2	55.4
315	2016/02/16	15:58:58	57.6	72.4	60.0	56.8
316	2016/02/16	15:59:03	50.3	67.4	57.7	47.1
317	2016/02/16	15:59:08	43.2	57.0	47.1	42.6
318	2016/02/16	15:59:13	51.4	75.2	54.0	43.6
319	2016/02/16	15:59:18	62.8	79.9	65.0	54.0
320	2016/02/16	15:59:23	63.6	86.6	66.6	59.8
321	2016/02/16	15:59:28	54.5	68.9	59.8	53.2
322	2016/02/16	15:59:33	59.0	72.9	60.5	56.5
323	2016/02/16	15:59:38	54.8	68.5	58.0	54.1
324	2016/02/16	15:59:43	58.8	75.4	60.5	54.4
325	2016/02/16	15:59:48	59.0	72.9	59.7	58.1
326	2016/02/16	15:59:53	57.5	71.1	59.2	56.4
327	2016/02/16	15:59:58	61.6	84.3	64.7	57.5
328	2016/02/16	16:00:03	48.8	63.5	57.5	46.9
329	2016/02/16	16:00:08	42.7	58.8	46.9	41.4
330	2016/02/16	16:00:13	38.8	54.0	41.4	37.8
331	2016/02/16	16:00:18	40.1	54.0	41.5	37.7
332	2016/02/16	16:00:23	47.1	64.4	50.7	39.4
333	2016/02/16	16:00:28	59.5	76.8	62.4	50.7
334	2016/02/16	16:00:33	50.6	66.8	56.6	48.3
335	2016/02/16	16:00:38	48.3	62.4	49.0	47.6
336	2016/02/16	16:00:43	61.1	77.4	63.5	49.0
337	2016/02/16	16:00:48	53.8	68.9	62.8	51.6
338	2016/02/16	16:00:53	56.8	80.0	57.9	54.3
339	2016/02/16	16:00:58	61.5	77.2	64.0	56.9
340	2016/02/16	16:01:03	54.6	70.2	61.3	52.1
341	2016/02/16	16:01:08	50.4	70.6	52.1	49.9
342	2016/02/16	16:01:13	59.6	76.5	62.1	49.9
343	2016/02/16	16:01:18	56.3	72.3	61.3	55.4
344	2016/02/16	16:01:23	59.0	79.2	61.8	54.4
345	2016/02/16	16:01:28	49.3	64.0	54.4	48.7
346	2016/02/16	16:01:33	57.1	73.1	59.3	49.7
347	2016/02/16	16:01:38	59.6	73.5	60.7	56.4
348	2016/02/16	16:01:43	54.1	72.5	60.8	51.3
349	2016/02/16	16:01:48	47.1	61.0	51.3	45.4
350	2016/02/16	16:01:53	51.3	66.8	53.3	45.4
351	2016/02/16	16:01:58	64.1	81.0	67.0	51.7

352	2016/02/16	16:02:03	52.6	70.7	64.8	49.1
353	2016/02/16	16:02:08	41.2	61.8	49.1	40.1
354	2016/02/16	16:02:13	46.0	64.4	48.9	40.9
355	2016/02/16	16:02:18	58.9	74.5	61.0	48.9
356	2016/02/16	16:02:23	58.3	72.8	59.1	57.9
357	2016/02/16	16:02:28	55.2	69.0	58.2	53.0
358	2016/02/16	16:02:33	47.5	65.5	53.0	45.4
359	2016/02/16	16:02:38	45.6	73.5	46.5	44.5
360	2016/02/16	16:02:43	54.3	82.1	56.7	46.5
361	2016/02/16	16:02:48	65.7	82.0	67.9	56.7
362	2016/02/16	16:02:53	55.1	70.9	64.0	51.8
363	2016/02/16	16:02:58	47.0	60.0	51.8	46.6

Measured Noise Level	
54.1	dB(A) Leq

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
6	2016/02/02	11:24:48	46.0	74.1	50.7	45.3
7	2016/02/02	11:24:53	51.9	85.8	55.8	47.7
8	2016/02/02	11:24:58	47.9	78.5	52.3	44.0
9	2016/02/02	11:25:03	44.9	68.9	50.8	43.8
10	2016/02/02	11:25:08	46.5	77.7	50.1	43.5
11	2016/02/02	11:25:13	58.2	80.1	61.0	49.8
12	2016/02/02	11:25:18	47.9	65.3	59.2	45.2
13	2016/02/02	11:25:23	40.0	57.2	45.1	39.5
14	2016/02/02	11:25:28	43.6	60.2	45.9	39.8
15	2016/02/02	11:25:33	54.5	75.8	59.5	45.1
16	2016/02/02	11:25:38	60.3	79.0	64.6	51.4
17	2016/02/02	11:25:43	43.5	74.1	51.4	41.2
18	2016/02/02	11:25:48	42.6	65.0	44.3	40.3
19	2016/02/02	11:25:53	45.9	73.1	47.3	44.1
20	2016/02/02	11:25:58	45.4	64.6	46.7	43.6
21	2016/02/02	11:26:03	41.3	66.9	45.0	39.1
22	2016/02/02	11:26:08	38.4	54.2	39.7	37.9
23	2016/02/02	11:26:13	37.8	54.2	39.1	36.9
24	2016/02/02	11:26:18	36.3	54.2	37.0	36.2
25	2016/02/02	11:26:23	36.2	54.2	36.5	36.0
26	2016/02/02	11:26:28	37.1	54.2	38.0	36.1
27	2016/02/02	11:26:33	41.9	72.9	44.3	37.9
28	2016/02/02	11:26:38	40.6	70.0	43.2	38.4
29	2016/02/02	11:26:43	51.3	94.2	57.8	38.3
30	2016/02/02	11:26:48	42.5	74.3	45.6	40.5
31	2016/02/02	11:26:53	52.7	70.1	55.5	43.9
32	2016/02/02	11:26:58	50.5	73.2	56.3	44.0
33	2016/02/02	11:27:03	40.9	54.2	44.0	39.1
34	2016/02/02	11:27:08	38.6	54.2	40.8	37.0
35	2016/02/02	11:27:13	38.1	54.2	39.0	36.6
36	2016/02/02	11:27:18	42.4	54.2	43.0	39.0
37	2016/02/02	11:27:23	59.8	77.3	62.9	42.7
38	2016/02/02	11:27:28	48.7	69.8	61.1	45.4
39	2016/02/02	11:27:33	53.5	71.2	57.0	44.2
40	2016/02/02	11:27:38	54.9	73.1	58.8	47.9
41	2016/02/02	11:27:43	42.8	70.1	47.9	41.6
42	2016/02/02	11:27:48	41.4	54.2	42.6	40.7
43	2016/02/02	11:27:53	41.6	54.2	42.7	40.6
44	2016/02/02	11:27:58	43.7	54.2	44.0	42.7
45	2016/02/02	11:28:03	42.9	54.2	44.2	41.6
46	2016/02/02	11:28:08	39.6	68.0	41.5	39.0
47	2016/02/02	11:28:13	38.5	57.2	39.5	37.8
48	2016/02/02	11:28:18	38.0	54.2	40.5	36.5
49	2016/02/02	11:28:23	36.9	54.2	37.2	36.3
50	2016/02/02	11:28:28	40.7	64.2	42.0	37.2
51	2016/02/02	11:28:33	53.1	70.3	55.9	42.0
52	2016/02/02	11:28:38	51.2	69.3	56.3	45.2
53	2016/02/02	11:28:43	39.9	54.2	45.2	39.3
54	2016/02/02	11:28:48	39.5	62.6	40.8	38.1
55	2016/02/02	11:28:53	36.2	57.2	38.4	35.4
56	2016/02/02	11:28:58	36.1	54.2	36.8	35.3
57	2016/02/02	11:29:03	36.1	54.2	36.7	35.8
58	2016/02/02	11:29:08	36.2	54.2	36.7	35.7
59	2016/02/02	11:29:13	40.1	54.2	41.2	36.7
60	2016/02/02	11:29:18	57.1	74.4	61.2	41.2
61	2016/02/02	11:29:23	57.3	76.5	62.9	47.9
62	2016/02/02	11:29:28	37.8	54.2	47.8	37.8

63	2016/02/02	11:29:33	36.1	54.2	37.8	35.4
64	2016/02/02	11:29:38	35.0	54.2	35.4	34.6
65	2016/02/02	11:29:43	35.7	54.2	36.0	35.2
66	2016/02/02	11:29:48	39.2	65.3	40.6	35.3
67	2016/02/02	11:29:53	36.5	57.2	40.5	35.6
68	2016/02/02	11:29:58	38.5	68.9	41.3	36.1
69	2016/02/02	11:30:03	36.4	63.7	38.1	35.8
70	2016/02/02	11:30:08	35.8	58.9	37.4	34.7
71	2016/02/02	11:30:13	37.5	54.2	38.9	36.1
72	2016/02/02	11:30:18	38.1	54.2	38.8	36.0
73	2016/02/02	11:30:23	41.3	61.2	42.8	38.7
74	2016/02/02	11:30:28	51.5	70.1	55.9	42.8
75	2016/02/02	11:30:33	59.7	77.3	63.4	51.9
76	2016/02/02	11:30:38	42.2	54.2	51.8	41.7
77	2016/02/02	11:30:43	38.4	54.2	41.7	37.4
78	2016/02/02	11:30:48	36.7	54.2	37.4	36.3
79	2016/02/02	11:30:53	36.4	54.2	37.1	36.0
80	2016/02/02	11:30:58	37.3	54.2	37.8	36.7
81	2016/02/02	11:31:03	37.8	54.2	38.2	37.3
82	2016/02/02	11:31:08	36.9	54.2	37.7	36.3
83	2016/02/02	11:31:13	36.8	54.2	38.1	36.0
84	2016/02/02	11:31:18	38.0	70.1	40.5	36.0
85	2016/02/02	11:31:23	39.9	68.8	41.8	38.1
86	2016/02/02	11:31:28	42.1	58.9	43.5	39.7
87	2016/02/02	11:31:33	36.2	54.2	41.4	36.1
88	2016/02/02	11:31:38	44.6	65.9	46.6	36.7
89	2016/02/02	11:31:43	40.9	54.2	42.8	39.9
90	2016/02/02	11:31:48	38.5	54.2	40.3	37.7
91	2016/02/02	11:31:53	37.3	54.2	38.6	36.5
92	2016/02/02	11:31:58	37.7	54.2	39.5	36.9
93	2016/02/02	11:32:03	40.2	70.8	42.9	37.6
94	2016/02/02	11:32:08	52.0	72.0	56.5	42.3
95	2016/02/02	11:32:13	59.2	75.4	62.4	54.4
96	2016/02/02	11:32:18	64.5	81.9	66.9	54.4
97	2016/02/02	11:32:23	51.6	69.7	63.9	47.6
98	2016/02/02	11:32:28	40.1	57.2	47.6	38.4
99	2016/02/02	11:32:33	39.7	54.2	41.5	37.6
100	2016/02/02	11:32:38	39.8	66.2	40.4	39.0
101	2016/02/02	11:32:43	41.8	72.6	44.9	39.5
102	2016/02/02	11:32:48	39.6	65.6	40.2	39.0
103	2016/02/02	11:32:53	41.8	72.7	44.4	39.5
104	2016/02/02	11:32:58	42.6	72.9	44.8	40.2
105	2016/02/02	11:33:03	39.9	64.2	42.5	39.0
106	2016/02/02	11:33:08	41.5	54.2	43.0	38.7
107	2016/02/02	11:33:13	59.0	76.1	62.5	43.0
108	2016/02/02	11:33:18	53.7	70.5	62.4	47.1
109	2016/02/02	11:33:23	39.5	57.2	47.1	38.7
110	2016/02/02	11:33:28	38.8	58.9	39.5	37.8
111	2016/02/02	11:33:33	40.2	72.5	42.1	39.1
112	2016/02/02	11:33:38	41.2	63.2	42.2	40.4
113	2016/02/02	11:33:43	42.4	58.9	43.3	40.5
114	2016/02/02	11:33:48	48.5	65.3	51.3	43.3
115	2016/02/02	11:33:53	65.3	81.0	67.6	51.3
116	2016/02/02	11:33:58	62.0	78.7	67.6	55.7
117	2016/02/02	11:34:03	47.5	61.9	55.7	46.8
118	2016/02/02	11:34:08	49.2	63.7	50.7	46.9
119	2016/02/02	11:34:13	64.6	80.9	67.5	50.7
120	2016/02/02	11:34:18	48.9	66.5	61.9	46.0

121	2016/02/02	11:34:23	42.2	63.2	46.0	41.9
122	2016/02/02	11:34:28	42.3	68.8	42.8	41.6
123	2016/02/02	11:34:33	48.1	65.0	50.8	42.4
124	2016/02/02	11:34:38	51.7	68.5	53.8	48.0
125	2016/02/02	11:34:43	44.9	61.9	48.0	44.6
126	2016/02/02	11:34:48	43.9	58.9	45.2	43.2
127	2016/02/02	11:34:53	42.7	57.2	43.4	42.3
128	2016/02/02	11:34:58	42.0	54.2	42.5	41.4
129	2016/02/02	11:35:03	42.6	63.2	43.2	42.2
130	2016/02/02	11:35:08	44.7	58.9	45.7	42.3
131	2016/02/02	11:35:13	45.4	60.2	46.0	44.8
132	2016/02/02	11:35:18	46.8	61.9	47.1	46.0
133	2016/02/02	11:35:23	48.7	73.2	50.8	46.6
134	2016/02/02	11:35:28	56.9	72.8	58.6	50.8
135	2016/02/02	11:35:33	48.3	73.3	55.6	47.4
136	2016/02/02	11:35:38	50.2	74.7	50.2	48.2
137	2016/02/02	11:35:43	51.5	77.9	52.2	50.2
138	2016/02/02	11:35:48	45.8	70.5	51.3	44.8
139	2016/02/02	11:35:53	43.9	63.7	44.8	43.3
140	2016/02/02	11:35:58	42.5	63.2	44.3	41.9
141	2016/02/02	11:36:03	41.5	57.2	42.1	41.2
142	2016/02/02	11:36:08	50.9	70.6	54.8	41.7
143	2016/02/02	11:36:13	54.8	74.6	57.9	48.9
144	2016/02/02	11:36:18	41.8	57.2	48.8	40.7
145	2016/02/02	11:36:23	39.8	61.2	40.9	39.3
146	2016/02/02	11:36:28	42.7	75.7	44.3	38.9
147	2016/02/02	11:36:33	52.6	83.2	56.9	43.3
148	2016/02/02	11:36:38	56.2	72.0	57.0	53.5
149	2016/02/02	11:36:43	72.5	89.3	75.7	56.3
150	2016/02/02	11:36:48	58.7	76.4	73.0	55.5
151	2016/02/02	11:36:53	48.8	64.6	55.5	48.6
152	2016/02/02	11:36:58	48.7	69.5	49.4	48.1
153	2016/02/02	11:37:03	44.7	69.5	49.2	41.9
154	2016/02/02	11:37:08	41.7	66.2	46.1	41.1
155	2016/02/02	11:37:13	41.0	54.2	41.9	40.5
156	2016/02/02	11:37:18	41.8	60.2	42.9	40.3
157	2016/02/02	11:37:23	41.5	65.3	43.6	40.7
158	2016/02/02	11:37:28	41.8	54.2	43.4	40.3
159	2016/02/02	11:37:33	41.9	73.2	44.2	40.8
160	2016/02/02	11:37:38	44.4	80.8	49.9	40.1
161	2016/02/02	11:37:43	48.2	80.1	52.7	44.4
162	2016/02/02	11:37:48	46.2	61.9	48.3	44.7
163	2016/02/02	11:37:53	57.3	70.9	58.8	48.3
164	2016/02/02	11:37:58	51.4	65.9	57.7	51.4
165	2016/02/02	11:38:03	49.8	71.9	51.8	49.0
166	2016/02/02	11:38:08	59.0	81.5	62.6	50.3
167	2016/02/02	11:38:13	57.7	78.5	63.7	50.5
168	2016/02/02	11:38:18	48.5	77.7	50.6	46.7
169	2016/02/02	11:38:23	43.8	75.0	48.4	42.7
170	2016/02/02	11:38:28	41.9	61.2	42.7	41.5
171	2016/02/02	11:38:33	45.9	78.1	48.8	41.9
172	2016/02/02	11:38:38	45.3	65.6	46.4	43.6
173	2016/02/02	11:38:43	44.7	74.3	46.9	42.0
174	2016/02/02	11:38:48	49.1	71.9	50.4	46.2
175	2016/02/02	11:38:53	43.6	71.0	46.2	42.9
176	2016/02/02	11:38:58	43.9	77.9	47.8	41.7
177	2016/02/02	11:39:03	42.1	54.2	43.8	40.5
178	2016/02/02	11:39:08	41.8	67.4	43.9	40.6

179	2016/02/02	11:39:13	44.2	69.8	44.9	42.2
180	2016/02/02	11:39:18	45.3	75.7	47.9	42.7
181	2016/02/02	11:39:23	41.7	68.5	44.2	40.4
182	2016/02/02	11:39:28	49.4	68.0	53.5	41.7
183	2016/02/02	11:39:33	56.1	76.9	59.0	50.9
184	2016/02/02	11:39:38	51.6	71.6	56.3	44.9
185	2016/02/02	11:39:43	58.4	75.1	62.0	50.6
186	2016/02/02	11:39:48	42.3	54.2	50.6	46.5

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Measurement Data

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
10	2016/02/02	12:33:17	50.0	81.2	53.4	41.6
11	2016/02/02	12:33:22	52.9	78.2	56.6	46.9
12	2016/02/02	12:33:27	61.6	79.1	63.7	56.7
13	2016/02/02	12:33:32	66.1	82.3	69.0	61.4
14	2016/02/02	12:33:37	62.6	76.4	63.6	60.5
15	2016/02/02	12:33:42	59.4	73.2	62.8	57.8
16	2016/02/02	12:33:47	48.5	69.6	57.8	47.3
17	2016/02/02	12:33:52	60.2	75.8	62.4	47.3
18	2016/02/02	12:33:57	60.6	75.9	62.8	56.7
19	2016/02/02	12:34:02	64.5	81.3	67.4	55.9
20	2016/02/02	12:34:07	58.5	71.8	61.7	57.8
21	2016/02/02	12:34:12	61.3	76.8	63.0	59.0
22	2016/02/02	12:34:17	62.5	79.4	64.6	61.1
23	2016/02/02	12:34:22	62.5	76.8	63.3	61.4
24	2016/02/02	12:34:27	58.7	74.8	61.5	55.2
25	2016/02/02	12:34:32	55.5	74.1	61.1	49.2
26	2016/02/02	12:34:37	44.2	66.7	49.2	43.5
27	2016/02/02	12:34:42	44.4	64.5	45.1	43.5
28	2016/02/02	12:34:47	48.9	64.5	50.7	44.4
29	2016/02/02	12:34:52	59.8	74.5	61.6	50.7
30	2016/02/02	12:34:57	59.6	86.9	61.6	53.6
31	2016/02/02	12:35:02	61.8	75.4	63.0	59.7
32	2016/02/02	12:35:07	50.9	67.7	59.7	46.6
33	2016/02/02	12:35:12	43.1	61.9	46.5	39.8
34	2016/02/02	12:35:17	43.4	63.7	47.3	41.4
35	2016/02/02	12:35:22	58.3	76.4	62.3	41.4
36	2016/02/02	12:35:27	56.9	76.4	62.7	52.2
37	2016/02/02	12:35:32	60.9	76.8	63.9	53.6
38	2016/02/02	12:35:37	57.5	75.5	61.6	48.1
39	2016/02/02	12:35:42	63.5	78.4	65.1	61.1
40	2016/02/02	12:35:47	50.5	66.4	61.1	47.7
41	2016/02/02	12:35:52	55.8	76.5	59.9	45.5
42	2016/02/02	12:35:57	60.8	75.4	62.6	56.2
43	2016/02/02	12:36:02	55.3	70.3	57.5	53.1
44	2016/02/02	12:36:07	48.1	64.5	54.9	47.0
45	2016/02/02	12:36:12	49.9	63.7	50.9	48.0
46	2016/02/02	12:36:17	49.4	63.7	50.1	48.5
47	2016/02/02	12:36:22	49.9	67.6	51.3	48.7
48	2016/02/02	12:36:27	49.6	68.6	52.4	46.8
49	2016/02/02	12:36:32	58.0	72.0	59.1	52.4
50	2016/02/02	12:36:37	50.6	69.6	57.4	48.3
51	2016/02/02	12:36:42	48.4	62.6	49.8	46.6
52	2016/02/02	12:36:47	54.7	70.5	56.5	49.8
53	2016/02/02	12:36:52	54.4	68.4	56.5	52.7
54	2016/02/02	12:36:57	58.9	76.8	61.1	52.6
55	2016/02/02	12:37:02	63.7	77.0	64.7	61.2
56	2016/02/02	12:37:07	59.3	75.4	62.6	57.1
57	2016/02/02	12:37:12	64.4	78.8	65.5	60.6
58	2016/02/02	12:37:17	63.6	77.3	64.3	62.3
59	2016/02/02	12:37:22	61.9	78.4	63.9	60.6
60	2016/02/02	12:37:27	57.3	72.3	60.6	55.7
61	2016/02/02	12:37:32	59.9	74.2	60.7	56.0
62	2016/02/02	12:37:37	60.3	76.9	63.1	55.9
63	2016/02/02	12:37:42	63.3	78.0	64.5	60.8
64	2016/02/02	12:37:47	58.6	71.4	60.8	58.0
65	2016/02/02	12:37:52	54.4	69.4	58.5	52.1
66	2016/02/02	12:37:57	48.3	82.5	52.1	46.3

Measured Noise Level	
59.6	dB(A) Leq

67	2016/02/02	12:38:02	44.9	65.3	50.0	44.2
68	2016/02/02	12:38:07	47.5	63.7	48.5	44.1
69	2016/02/02	12:38:12	50.8	70.5	52.6	48.1
70	2016/02/02	12:38:17	56.9	70.6	58.3	52.6
71	2016/02/02	12:38:22	63.1	78.4	64.5	58.3
72	2016/02/02	12:38:27	62.7	82.2	65.2	58.8
73	2016/02/02	12:38:32	70.6	83.6	71.3	65.3
74	2016/02/02	12:38:37	64.4	80.8	70.9	59.1
75	2016/02/02	12:38:42	57.2	78.2	59.3	55.3
76	2016/02/02	12:38:47	55.5	73.5	59.4	51.4
77	2016/02/02	12:38:52	58.7	74.9	62.4	51.0
78	2016/02/02	12:38:57	45.3	63.7	51.0	42.8
79	2016/02/02	12:39:02	41.4	54.1	42.8	40.7
80	2016/02/02	12:39:07	46.5	63.2	50.1	41.3
81	2016/02/02	12:39:12	62.1	78.0	64.9	50.2
82	2016/02/02	12:39:17	58.3	72.3	59.0	57.0
83	2016/02/02	12:39:22	53.2	70.3	58.8	50.3
84	2016/02/02	12:39:27	59.1	73.8	61.0	50.4
85	2016/02/02	12:39:32	59.5	74.7	61.1	57.8
86	2016/02/02	12:39:37	64.5	81.2	67.1	60.1
87	2016/02/02	12:39:42	70.9	87.1	74.4	63.4
88	2016/02/02	12:39:47	70.2	88.0	74.5	66.2
89	2016/02/02	12:39:52	69.0	91.9	70.3	66.2
90	2016/02/02	12:39:57	62.5	79.1	68.6	57.8
91	2016/02/02	12:40:02	48.8	66.9	57.8	47.3
92	2016/02/02	12:40:07	47.3	71.1	48.9	46.5
93	2016/02/02	12:40:12	55.1	73.9	59.6	46.5
94	2016/02/02	12:40:17	56.4	75.5	61.0	49.3
95	2016/02/02	12:40:22	54.1	70.0	57.5	47.4
96	2016/02/02	12:40:27	63.5	79.0	65.3	57.5
97	2016/02/02	12:40:32	55.1	70.4	62.6	54.0
98	2016/02/02	12:40:37	64.1	78.9	65.2	57.3
99	2016/02/02	12:40:42	60.5	80.9	63.1	59.8
100	2016/02/02	12:40:47	58.7	72.2	59.8	57.5
101	2016/02/02	12:40:52	48.3	65.3	57.5	47.2
102	2016/02/02	12:40:57	47.8	63.7	49.6	45.3
103	2016/02/02	12:41:02	50.3	69.6	50.9	46.8
104	2016/02/02	12:41:07	47.6	65.9	52.1	43.7
105	2016/02/02	12:41:12	45.6	66.2	46.5	43.6
106	2016/02/02	12:41:17	47.0	65.6	49.2	44.1
107	2016/02/02	12:41:22	43.5	74.7	45.0	42.7
108	2016/02/02	12:41:27	43.2	62.6	45.8	41.3
109	2016/02/02	12:41:32	41.1	57.1	43.0	40.2
110	2016/02/02	12:41:37	40.6	57.1	42.1	40.1
111	2016/02/02	12:41:42	43.6	73.6	44.8	40.2
112	2016/02/02	12:41:47	45.4	64.9	47.1	42.1
113	2016/02/02	12:41:52	48.3	69.0	48.7	47.1
114	2016/02/02	12:41:57	51.8	68.1	54.5	47.0
115	2016/02/02	12:42:02	60.8	74.8	61.6	54.5
116	2016/02/02	12:42:07	53.1	71.2	60.8	50.5
117	2016/02/02	12:42:12	56.9	71.2	58.0	50.7
118	2016/02/02	12:42:17	58.3	77.2	59.4	55.4
119	2016/02/02	12:42:22	51.0	69.0	59.2	47.2
120	2016/02/02	12:42:27	45.8	63.2	47.2	45.2
121	2016/02/02	12:42:32	61.4	77.9	64.1	46.5
122	2016/02/02	12:42:37	53.9	72.8	63.7	48.2
123	2016/02/02	12:42:42	44.6	64.9	48.2	43.4
124	2016/02/02	12:42:47	49.1	69.6	53.3	43.1

125	2016/02/02	12:42:52	59.8	76.4	62.5	52.9
126	2016/02/02	12:42:57	42.6	65.6	52.9	41.3
127	2016/02/02	12:43:02	39.4	54.1	41.4	39.3
128	2016/02/02	12:43:07	40.4	54.1	40.8	39.6
129	2016/02/02	12:43:12	42.3	60.1	43.1	40.0
130	2016/02/02	12:43:17	44.0	61.9	46.2	41.8
131	2016/02/02	12:43:22	59.6	77.5	63.6	45.1
132	2016/02/02	12:43:27	56.4	77.2	64.0	49.0
133	2016/02/02	12:43:32	49.8	77.4	55.1	44.6
134	2016/02/02	12:43:37	47.2	77.2	52.9	46.6
135	2016/02/02	12:43:42	53.9	70.7	57.2	48.8
136	2016/02/02	12:43:47	58.4	73.9	60.5	54.2
137	2016/02/02	12:43:52	59.5	78.3	62.3	53.5
138	2016/02/02	12:43:57	61.7	77.0	64.0	57.4
139	2016/02/02	12:44:02	58.3	71.4	59.1	57.5
140	2016/02/02	12:44:07	55.8	72.8	58.8	52.7
141	2016/02/02	12:44:12	60.3	75.6	62.2	57.4
142	2016/02/02	12:44:17	56.2	70.0	58.0	52.9
143	2016/02/02	12:44:22	53.4	74.8	55.7	51.2
144	2016/02/02	12:44:27	63.4	78.3	65.7	55.7
145	2016/02/02	12:44:32	64.9	80.2	67.5	60.9
146	2016/02/02	12:44:37	60.6	75.7	62.6	56.8
147	2016/02/02	12:44:42	55.7	72.8	57.0	54.6
148	2016/02/02	12:44:47	56.4	75.2	60.6	50.1
149	2016/02/02	12:44:52	57.0	74.7	62.0	49.9
150	2016/02/02	12:44:57	57.1	74.7	61.6	48.2
151	2016/02/02	12:45:02	58.9	75.5	63.1	54.8
152	2016/02/02	12:45:07	63.8	80.0	66.2	55.3
153	2016/02/02	12:45:12	56.0	74.7	60.7	52.9
154	2016/02/02	12:45:17	48.5	63.7	52.9	46.3
155	2016/02/02	12:45:22	45.0	57.1	46.2	44.3
156	2016/02/02	12:45:27	49.6	66.2	53.1	43.0
157	2016/02/02	12:45:32	57.3	71.3	57.9	53.2
158	2016/02/02	12:45:37	58.9	75.1	61.5	53.4
159	2016/02/02	12:45:42	60.9	76.8	64.0	50.9
160	2016/02/02	12:45:47	50.8	68.9	62.9	46.4
161	2016/02/02	12:45:52	41.4	54.1	46.4	41.0
162	2016/02/02	12:45:57	42.5	72.8	43.8	40.9
163	2016/02/02	12:46:02	42.0	72.0	42.6	41.4
164	2016/02/02	12:46:07	53.3	69.9	56.2	42.4
165	2016/02/02	12:46:12	61.7	77.5	64.1	56.2
166	2016/02/02	12:46:17	46.6	75.7	59.1	46.8
167	2016/02/02	12:46:22	49.2	66.7	52.1	46.5
168	2016/02/02	12:46:27	64.2	78.0	65.5	52.1
169	2016/02/02	12:46:32	61.8	76.6	63.4	60.3
170	2016/02/02	12:46:37	58.0	73.9	60.6	53.9
171	2016/02/02	12:46:42	50.9	70.5	60.5	46.0
172	2016/02/02	12:46:47	46.5	61.9	49.5	43.8
173	2016/02/02	12:46:52	60.9	74.3	61.8	49.5
174	2016/02/02	12:46:57	58.5	77.0	62.2	53.5
175	2016/02/02	12:47:02	60.2	77.5	63.7	54.6
176	2016/02/02	12:47:07	44.4	57.1	54.6	42.9
177	2016/02/02	12:47:12	43.2	63.2	44.0	42.4
178	2016/02/02	12:47:17	58.8	76.4	62.6	43.6
179	2016/02/02	12:47:22	58.6	75.8	62.7	55.4
180	2016/02/02	12:47:27	59.8	75.5	62.4	54.2
181	2016/02/02	12:47:32	45.2	75.1	54.1	42.9
182	2016/02/02	12:47:37	43.0	54.1	44.8	41.1

183	2016/02/02	12:47:42	49.7	79.3	50.9	44.9
184	2016/02/02	12:47:47	62.5	77.9	65.2	51.0
185	2016/02/02	12:47:52	55.0	73.1	64.6	51.5
186	2016/02/02	12:47:57	59.7	74.8	62.2	50.9
187	2016/02/02	12:48:02	60.9	74.7	62.2	57.7
188	2016/02/02	12:48:07	58.5	72.2	61.3	56.5
189	2016/02/02	12:48:12	57.8	70.9	62.3	47.3
190	2016/02/02	12:48:17	64.1	69.4	62.8	62.3

Measured Noise Level	
62.2	dB(A) Leq

Record #	Date	Time	LAeq	LApeak	LASmax	LASmin
3	2016/02/02	14:00:48	55.6	84.7	57.0	53.3
4	2016/02/02	14:00:53	69.5	85.5	72.1	56.2
5	2016/02/02	14:00:58	62.9	81.5	72.0	62.2
6	2016/02/02	14:01:03	63.0	77.1	63.9	62.0
7	2016/02/02	14:01:08	59.4	73.3	63.2	59.2
8	2016/02/02	14:01:13	59.2	74.2	60.6	58.0
9	2016/02/02	14:01:18	62.2	77.9	63.4	59.9
10	2016/02/02	14:01:23	60.8	81.9	62.6	58.0
11	2016/02/02	14:01:28	58.1	73.7	59.8	56.4
12	2016/02/02	14:01:33	58.4	73.5	61.5	56.1
13	2016/02/02	14:01:38	54.4	69.8	57.5	52.8
14	2016/02/02	14:01:43	56.2	70.8	57.8	53.2
15	2016/02/02	14:01:48	54.4	70.9	57.9	52.3
16	2016/02/02	14:01:53	49.6	73.2	52.2	48.8
17	2016/02/02	14:01:58	54.1	71.3	56.7	48.3
18	2016/02/02	14:02:03	62.2	77.5	63.1	56.7
19	2016/02/02	14:02:08	57.1	74.5	62.7	53.9
20	2016/02/02	14:02:13	48.6	63.1	53.9	46.9
21	2016/02/02	14:02:18	45.8	57.0	46.9	45.2
22	2016/02/02	14:02:23	62.8	88.0	67.2	46.4
23	2016/02/02	14:02:28	65.9	85.6	67.6	63.0
24	2016/02/02	14:02:33	65.1	87.0	67.9	58.5
25	2016/02/02	14:02:38	67.2	85.1	71.6	57.1
26	2016/02/02	14:02:43	68.2	89.3	72.8	64.5
27	2016/02/02	14:02:48	52.1	66.1	64.5	50.2
28	2016/02/02	14:02:53	58.5	88.7	63.7	48.4
29	2016/02/02	14:02:58	60.6	81.1	65.6	52.5
30	2016/02/02	14:03:03	50.2	66.6	52.5	50.0
31	2016/02/02	14:03:08	58.0	77.2	59.1	51.0
32	2016/02/02	14:03:13	64.8	89.6	68.7	56.8
33	2016/02/02	14:03:18	61.6	80.1	68.5	60.1
34	2016/02/02	14:03:23	65.1	83.9	66.4	59.9
35	2016/02/02	14:03:28	55.1	70.9	65.0	53.8
36	2016/02/02	14:03:33	51.0	73.2	53.8	50.3
37	2016/02/02	14:03:38	50.9	69.6	52.8	48.8
38	2016/02/02	14:03:43	51.1	64.0	52.7	50.7
39	2016/02/02	14:03:48	52.4	68.3	55.0	48.9
40	2016/02/02	14:03:53	62.7	81.2	64.2	55.1
41	2016/02/02	14:03:58	61.7	80.4	63.9	60.6
42	2016/02/02	14:04:03	61.2	74.8	63.2	59.4
43	2016/02/02	14:04:08	60.4	80.4	63.0	56.7
44	2016/02/02	14:04:13	57.9	75.5	61.1	54.4
45	2016/02/02	14:04:18	61.3	85.2	65.1	53.3
46	2016/02/02	14:04:23	53.2	67.6	55.5	50.9
47	2016/02/02	14:04:28	53.5	69.6	56.8	50.6
48	2016/02/02	14:04:33	52.7	69.9	55.2	49.9
49	2016/02/02	14:04:38	64.2	77.0	64.9	55.2
50	2016/02/02	14:04:43	59.7	75.1	63.5	57.9
51	2016/02/02	14:04:48	55.3	69.1	58.1	54.5
52	2016/02/02	14:04:53	55.4	69.8	57.6	53.2
53	2016/02/02	14:04:58	61.1	75.6	63.1	57.6
54	2016/02/02	14:05:03	58.5	74.7	63.2	55.9
55	2016/02/02	14:05:08	51.8	66.3	56.0	50.7
56	2016/02/02	14:05:13	49.4	63.6	50.7	49.0
57	2016/02/02	14:05:18	59.1	75.7	61.7	49.4
58	2016/02/02	14:05:23	63.4	86.5	64.2	61.6
59	2016/02/02	14:05:28	60.7	81.1	63.8	57.9

60	2016/02/02	14:05:33	54.8	68.0	57.9	53.8
61	2016/02/02	14:05:38	56.4	70.3	58.0	53.3
62	2016/02/02	14:05:43	68.2	83.0	69.9	58.0
63	2016/02/02	14:05:48	62.8	80.0	69.9	56.1
64	2016/02/02	14:05:53	53.3	68.6	56.1	51.3
65	2016/02/02	14:05:58	60.7	77.3	61.5	55.3
66	2016/02/02	14:06:03	62.1	85.8	65.4	57.3
67	2016/02/02	14:06:08	47.1	65.2	57.2	47.2
68	2016/02/02	14:06:13	48.6	61.0	49.7	46.9
69	2016/02/02	14:06:18	54.5	72.1	55.9	49.7
70	2016/02/02	14:06:23	58.7	73.1	59.7	55.2
71	2016/02/02	14:06:28	59.6	73.4	59.9	59.3
72	2016/02/02	14:06:33	67.9	84.8	69.8	59.3
73	2016/02/02	14:06:38	75.1	90.2	77.2	67.7
74	2016/02/02	14:06:43	69.4	84.8	75.3	68.0
75	2016/02/02	14:06:48	64.8	81.8	68.4	60.9
76	2016/02/02	14:06:53	56.8	73.3	60.9	56.4
77	2016/02/02	14:06:58	64.2	86.1	67.1	57.2
78	2016/02/02	14:07:03	59.6	75.4	62.0	57.7
79	2016/02/02	14:07:08	55.0	69.5	57.6	54.2
80	2016/02/02	14:07:13	53.2	71.3	55.6	52.6
81	2016/02/02	14:07:18	54.0	68.3	55.8	52.1
82	2016/02/02	14:07:23	55.1	68.9	56.6	53.3
83	2016/02/02	14:07:28	59.7	89.4	65.9	50.4
84	2016/02/02	14:07:33	54.9	74.7	61.7	53.8
85	2016/02/02	14:07:38	68.3	81.5	69.5	58.9
86	2016/02/02	14:07:43	63.2	82.2	68.2	61.2
87	2016/02/02	14:07:48	65.0	87.0	67.3	60.2
88	2016/02/02	14:07:53	58.3	71.2	64.7	57.4
89	2016/02/02	14:07:58	64.6	86.5	67.9	57.8
90	2016/02/02	14:08:03	58.5	73.4	65.9	57.8
91	2016/02/02	14:08:08	60.8	75.5	62.0	58.0
92	2016/02/02	14:08:13	59.3	71.8	60.8	59.2
93	2016/02/02	14:08:18	58.6	72.6	59.3	58.0
94	2016/02/02	14:08:23	60.9	75.5	61.9	58.0
95	2016/02/02	14:08:28	63.1	76.9	63.9	61.5
96	2016/02/02	14:08:33	64.2	84.6	65.4	62.3
97	2016/02/02	14:08:38	59.5	77.9	65.0	57.8
98	2016/02/02	14:08:43	61.0	81.2	62.2	57.8
99	2016/02/02	14:08:48	61.6	80.4	62.5	60.7
100	2016/02/02	14:08:53	62.4	78.4	64.2	60.6
101	2016/02/02	14:08:58	65.3	89.4	68.8	60.0
102	2016/02/02	14:09:03	58.8	72.2	60.0	58.7
103	2016/02/02	14:09:08	60.0	75.0	60.9	58.8
104	2016/02/02	14:09:13	58.1	79.5	59.9	57.3
105	2016/02/02	14:09:18	64.5	82.1	68.3	57.1
106	2016/02/02	14:09:23	69.4	83.8	70.4	68.3
107	2016/02/02	14:09:28	67.5	85.5	68.7	66.8
108	2016/02/02	14:09:33	62.2	78.3	66.8	60.3
109	2016/02/02	14:09:38	69.9	84.1	72.3	64.9
110	2016/02/02	14:09:43	62.7	77.2	68.2	61.0
111	2016/02/02	14:09:48	72.0	93.6	75.9	60.0
112	2016/02/02	14:09:53	67.2	86.5	73.1	65.7
113	2016/02/02	14:09:58	59.2	76.5	68.8	55.6
114	2016/02/02	14:10:03	60.3	83.6	62.3	55.3
115	2016/02/02	14:10:08	61.0	76.8	62.4	57.2
116	2016/02/02	14:10:13	62.1	82.7	64.2	59.7
117	2016/02/02	14:10:18	53.2	73.9	60.5	52.8

118	2016/02/02	14:10:23	51.3	67.0	52.7	50.2
119	2016/02/02	14:10:28	50.7	72.9	52.7	49.0
120	2016/02/02	14:10:33	52.7	67.4	53.7	49.9
121	2016/02/02	14:10:38	67.2	85.3	72.4	51.8
122	2016/02/02	14:10:43	69.4	86.3	74.0	63.4
123	2016/02/02	14:10:48	54.5	69.7	63.4	51.9
124	2016/02/02	14:10:53	57.0	72.8	59.7	51.3
125	2016/02/02	14:10:58	58.7	72.2	59.8	57.9
126	2016/02/02	14:11:03	67.3	87.5	69.8	57.9
127	2016/02/02	14:11:08	58.7	75.1	68.6	57.4
128	2016/02/02	14:11:13	56.7	72.8	58.7	55.1
129	2016/02/02	14:11:18	65.3	89.5	68.9	58.4
130	2016/02/02	14:11:23	56.7	74.7	58.3	55.9
131	2016/02/02	14:11:28	61.8	82.8	63.1	58.0
132	2016/02/02	14:11:33	63.2	82.0	64.0	61.9
133	2016/02/02	14:11:38	61.3	75.8	62.3	60.3
134	2016/02/02	14:11:43	54.4	74.0	60.2	53.0
135	2016/02/02	14:11:48	58.9	75.7	59.8	55.1
136	2016/02/02	14:11:53	54.8	74.9	58.2	52.0
137	2016/02/02	14:11:58	51.9	64.8	53.1	50.9
138	2016/02/02	14:12:03	46.3	66.8	50.9	45.4
139	2016/02/02	14:12:08	54.9	71.4	58.0	45.3
140	2016/02/02	14:12:13	56.9	70.5	58.3	55.9
141	2016/02/02	14:12:18	57.6	78.4	60.7	53.0
142	2016/02/02	14:12:23	55.4	73.3	56.3	53.8
143	2016/02/02	14:12:28	52.2	65.8	54.6	51.3
144	2016/02/02	14:12:33	52.3	70.9	53.2	51.3
145	2016/02/02	14:12:38	52.6	74.4	53.2	51.9
146	2016/02/02	14:12:43	49.4	73.4	52.1	47.8
147	2016/02/02	14:12:48	47.2	60.0	48.4	46.2
148	2016/02/02	14:12:53	53.2	71.3	54.0	48.4
149	2016/02/02	14:12:58	58.3	77.6	58.9	53.8
150	2016/02/02	14:13:03	59.9	73.8	60.4	58.0
151	2016/02/02	14:13:08	55.4	78.4	59.7	54.6
152	2016/02/02	14:13:13	55.4	72.6	57.9	53.2
153	2016/02/02	14:13:18	59.5	83.1	62.8	52.1
154	2016/02/02	14:13:23	49.3	67.8	52.1	48.7
155	2016/02/02	14:13:28	52.7	76.8	55.8	49.6
156	2016/02/02	14:13:33	58.9	72.4	59.1	55.9
157	2016/02/02	14:13:38	55.6	71.3	58.3	54.3
158	2016/02/02	14:13:43	51.6	64.8	54.3	51.1
159	2016/02/02	14:13:48	54.1	84.6	56.5	51.8
160	2016/02/02	14:13:53	51.2	74.9	54.5	49.6
161	2016/02/02	14:13:58	49.5	63.1	50.1	48.8
162	2016/02/02	14:14:03	61.5	77.3	64.3	50.1
163	2016/02/02	14:14:08	62.7	81.9	64.9	61.1
164	2016/02/02	14:14:13	57.9	77.7	61.1	56.6
165	2016/02/02	14:14:18	54.8	67.2	56.6	54.2
166	2016/02/02	14:14:23	58.1	71.4	59.0	55.4
167	2016/02/02	14:14:28	57.5	70.9	58.5	55.9
168	2016/02/02	14:14:33	53.4	66.3	55.9	52.4
169	2016/02/02	14:14:38	53.2	67.2	54.3	52.2
170	2016/02/02	14:14:43	56.9	69.7	58.2	54.3
171	2016/02/02	14:14:48	50.6	63.6	56.5	49.3
172	2016/02/02	14:14:53	57.8	73.0	60.1	49.4
173	2016/02/02	14:14:58	62.5	75.5	62.9	60.2
174	2016/02/02	14:15:03	64.4	87.4	67.2	60.2
175	2016/02/02	14:15:08	62.8	81.1	65.9	60.7

176	2016/02/02	14:15:13	64.3	80.3	65.2	62.4
177	2016/02/02	14:15:18	59.8	82.4	65.2	55.9
178	2016/02/02	14:15:23	53.6	68.5	55.8	51.7
179	2016/02/02	14:15:28	54.7	73.7	56.5	51.7
180	2016/02/02	14:15:33	59.9	73.6	60.8	56.5
181	2016/02/02	14:15:38	64.2	78.5	65.7	60.8
182	2016/02/02	14:15:43	56.2	72.5	64.0	52.9
183	2016/02/02	14:15:48	53.6	79.7	56.2	50.0

ATTACHMENT 2

SoundPLAN Data – Existing Vehicle Traffic Noise

Stationing km	ADT Veh/24h	Traffic values Vehicles type	Vehicle na	day Veh/h	Speed km/h	Control device	Constr. Speed km/h	Affect. veh. %	Road surface	Gradient Min / Max %
Los Osos Valley Road - east of Los Osos			Traffic direction:		In entry direction					
0+000	37368	Total	-	1557	-	none	-	-	Average (of DGAC and PCC)	0
0+000	37368	Automobiles	-	1470	89	none	-	-	Average (of DGAC and PCC)	0
0+000	37368	Medium trucks	-	47	89	none	-	-	Average (of DGAC and PCC)	0
0+000	37368	Heavy trucks	-	8	89	none	-	-	Average (of DGAC and PCC)	0
0+000	37368	Buses	-	16	89	none	-	-	Average (of DGAC and PCC)	0
0+000	37368	Motorcycles	-	16	89	none	-	-	Average (of DGAC and PCC)	0
0+000	37368	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
4+961	-					-	-	-	-	-
Los Osos Valley Road - east of South Bay			Traffic direction:		In entry direction					
0+000	37728	Total	-	1572	-	none	-	-	Average (of DGAC and PCC)	0
0+000	37728	Automobiles	-	1485	72	none	-	-	Average (of DGAC and PCC)	0
0+000	37728	Medium trucks	-	47	72	none	-	-	Average (of DGAC and PCC)	0
0+000	37728	Heavy trucks	-	8	72	none	-	-	Average (of DGAC and PCC)	0
0+000	37728	Buses	-	16	72	none	-	-	Average (of DGAC and PCC)	0
0+000	37728	Motorcycles	-	16	72	none	-	-	Average (of DGAC and PCC)	0
0+000	37728	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+452	-					-	-	-	-	-
Los Osos Valley Road - west of South Bay			Traffic direction:		In entry direction					
0+000	35376	Total	-	1474	-	none	-	-	Average (of DGAC and PCC)	0
0+000	35376	Automobiles	-	1393	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35376	Medium trucks	-	44	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35376	Heavy trucks	-	7	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35376	Buses	-	15	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35376	Motorcycles	-	15	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35376	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+436	-					-	-	-	-	-
Los Osos Valley Road - east of 9th Stree			Traffic direction:		In entry direction					
0+000	34440	Total	-	1435	-	none	-	-	Average (of DGAC and PCC)	0
0+000	34440	Automobiles	-	1357	56	none	-	-	Average (of DGAC and PCC)	0
0+000	34440	Medium trucks	-	43	56	none	-	-	Average (of DGAC and PCC)	0
0+000	34440	Heavy trucks	-	7	56	none	-	-	Average (of DGAC and PCC)	0
0+000	34440	Buses	-	14	56	none	-	-	Average (of DGAC and PCC)	0
0+000	34440	Motorcycles	-	14	56	none	-	-	Average (of DGAC and PCC)	0
0+000	34440	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+280	-					-	-	-	-	-
Los Osos Valley Road - west of Bush Driv			Traffic direction:		In entry direction					
0+000	28800	Total	-	1200	-	none	-	-	Average (of DGAC and PCC)	0
0+000	28800	Automobiles	-	1134	56	none	-	-	Average (of DGAC and PCC)	0
0+000	28800	Medium trucks	-	36	56	none	-	-	Average (of DGAC and PCC)	0
0+000	28800	Heavy trucks	-	6	56	none	-	-	Average (of DGAC and PCC)	0
0+000	28800	Buses	-	12	56	none	-	-	Average (of DGAC and PCC)	0
0+000	28800	Motorcycles	-	12	56	none	-	-	Average (of DGAC and PCC)	0
0+000	28800	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+321	-					-	-	-	-	-
Los Osos Valley Road - west of Palisades			Traffic direction:		In entry direction					
0+000	22272	Total	-	928	-	none	-	-	Average (of DGAC and PCC)	0
0+000	22272	Automobiles	-	877	56	none	-	-	Average (of DGAC and PCC)	0
0+000	22272	Medium trucks	-	28	56	none	-	-	Average (of DGAC and PCC)	0
0+000	22272	Heavy trucks	-	5	56	none	-	-	Average (of DGAC and PCC)	0
0+000	22272	Buses	-	9	56	none	-	-	Average (of DGAC and PCC)	0
0+000	22272	Motorcycles	-	9	56	none	-	-	Average (of DGAC and PCC)	0
0+000	22272	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+605	-					-	-	-	-	-
Los Osos Valley Road - east of Doris Ave			Traffic direction:		In entry direction					
0+000	19656	Total	-	819	-	none	-	-	Average (of DGAC and PCC)	0
0+000	19656	Automobiles	-	774	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19656	Medium trucks	-	25	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19656	Heavy trucks	-	4	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19656	Buses	-	8	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19656	Motorcycles	-	8	64	none	-	-	Average (of DGAC and PCC)	0
0+000	19656	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+433	-					-	-	-	-	-
Los Osos Valley Road - east of Pecho Dri			Traffic direction:		In entry direction					
0+000	18576	Total	-	774	-	none	-	-	Average (of DGAC and PCC)	0
0+000	18576	Automobiles	-	731	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18576	Medium trucks	-	23	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18576	Heavy trucks	-	4	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18576	Buses	-	8	64	none	-	-	Average (of DGAC and PCC)	0
0+000	18576	Motorcycles	-	8	64	none	-	-	Average (of DGAC and PCC)	0

0+000	18576	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+495	-						-	-	-	-	-	
South Bay Boulevard - north of Los Osos			Traffic direction:	In entry direction								
0+000	27432	Total	-		1143	-	none	-	-	Average (of DGAC and PCC)		0
0+000	27432	Automobiles	-		1081	89	none	-	-	Average (of DGAC and PCC)		0
0+000	27432	Medium trucks	-		34	89	none	-	-	Average (of DGAC and PCC)		0
0+000	27432	Heavy trucks	-		6	89	none	-	-	Average (of DGAC and PCC)		0
0+000	27432	Buses	-		11	89	none	-	-	Average (of DGAC and PCC)		0
0+000	27432	Motorcycles	-		11	89	none	-	-	Average (of DGAC and PCC)		0
0+000	27432	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+996	-						-	-	-	-	-	
South Bay Boulevard - south of Santa Ysa			Traffic direction:	In entry direction								
0+000	24000	Total	-		1000	-	none	-	-	Average (of DGAC and PCC)		0
0+000	24000	Automobiles	-		945	89	none	-	-	Average (of DGAC and PCC)		0
0+000	24000	Medium trucks	-		30	89	none	-	-	Average (of DGAC and PCC)		0
0+000	24000	Heavy trucks	-		5	89	none	-	-	Average (of DGAC and PCC)		0
0+000	24000	Buses	-		10	89	none	-	-	Average (of DGAC and PCC)		0
0+000	24000	Motorcycles	-		10	89	none	-	-	Average (of DGAC and PCC)		0
0+000	24000	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
1+343	-						-	-	-	-	-	
South Bay Boulevard - north of Santa Ysa			Traffic direction:	In entry direction								
0+000	33936	Total	-		1414	-	none	-	-	Average (of DGAC and PCC)		0
0+000	33936	Automobiles	-		1337	89	none	-	-	Average (of DGAC and PCC)		0
0+000	33936	Medium trucks	-		42	89	none	-	-	Average (of DGAC and PCC)		0
0+000	33936	Heavy trucks	-		7	89	none	-	-	Average (of DGAC and PCC)		0
0+000	33936	Buses	-		14	89	none	-	-	Average (of DGAC and PCC)		0
0+000	33936	Motorcycles	-		14	89	none	-	-	Average (of DGAC and PCC)		0
0+000	33936	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
1+615	-						-	-	-	-	-	
Pecho Valley Road - south of Monarch Lan			Traffic direction:	In entry direction								
0+000	7728	Total	-		322	-	none	-	-	Average (of DGAC and PCC)		0
0+000	7728	Automobiles	-		304	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7728	Medium trucks	-		10	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7728	Heavy trucks	-		2	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7728	Buses	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7728	Motorcycles	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7728	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+556	-						-	-	-	-	-	
Pecho Valley Road - south of Rodman Driv			Traffic direction:	In entry direction								
0+000	2904	Total	-		121	-	none	-	-	Average (of DGAC and PCC)		0
0+000	2904	Automobiles	-		114	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2904	Medium trucks	-		4	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2904	Heavy trucks	-		1	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2904	Buses	-		1	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2904	Motorcycles	-		1	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2904	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
1+155	-						-	-	-	-	-	
Santa Ynez Avenue - west of 11th Street			Traffic direction:	In entry direction								
0+000	7944	Total	-		331	-	none	-	-	Average (of DGAC and PCC)		0
0+000	7944	Automobiles	-		313	40	none	-	-	Average (of DGAC and PCC)		0
0+000	7944	Medium trucks	-		10	40	none	-	-	Average (of DGAC and PCC)		0
0+000	7944	Heavy trucks	-		2	40	none	-	-	Average (of DGAC and PCC)		0
0+000	7944	Buses	-		3	40	none	-	-	Average (of DGAC and PCC)		0
0+000	7944	Motorcycles	-		3	40	none	-	-	Average (of DGAC and PCC)		0
0+000	7944	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+336	-						-	-	-	-	-	
Nipomo Avenue - west of South Bay Boulev			Traffic direction:	In entry direction								
0+000	6072	Total	-		253	-	none	-	-	Average (of DGAC and PCC)		0
0+000	6072	Automobiles	-		238	40	none	-	-	Average (of DGAC and PCC)		0
0+000	6072	Medium trucks	-		8	40	none	-	-	Average (of DGAC and PCC)		0
0+000	6072	Heavy trucks	-		1	40	none	-	-	Average (of DGAC and PCC)		0
0+000	6072	Buses	-		3	40	none	-	-	Average (of DGAC and PCC)		0
0+000	6072	Motorcycles	-		3	40	none	-	-	Average (of DGAC and PCC)		0
0+000	6072	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
1+161	-						-	-	-	-	-	
Ramona Avenue - west of 9th Street			Traffic direction:	In entry direction								
0+000	9792	Total	-		408	-	none	-	-	Average (of DGAC and PCC)		0
0+000	9792	Automobiles	-		386	40	none	-	-	Average (of DGAC and PCC)		0
0+000	9792	Medium trucks	-		12	40	none	-	-	Average (of DGAC and PCC)		0
0+000	9792	Heavy trucks	-		2	40	none	-	-	Average (of DGAC and PCC)		0
0+000	9792	Buses	-		4	40	none	-	-	Average (of DGAC and PCC)		0
0+000	9792	Motorcycles	-		4	40	none	-	-	Average (of DGAC and PCC)		0
0+000	9792	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0

0+521	-							-	-	-	-	-	
Ramona Avenue - west of 4th Street			Traffic direction:		In entry direction								
0+000	5928	Total	-		247	-		none	-	-	Average (of DGAC and PCC)		0
0+000	5928	Automobiles	-		235		40	none	-	-	Average (of DGAC and PCC)		0
0+000	5928	Medium trucks	-		7		40	none	-	-	Average (of DGAC and PCC)		0
0+000	5928	Heavy trucks	-		1		40	none	-	-	Average (of DGAC and PCC)		0
0+000	5928	Buses	-		2		40	none	-	-	Average (of DGAC and PCC)		0
0+000	5928	Motorcycles	-		2		40	none	-	-	Average (of DGAC and PCC)		0
0+000	5928	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+735	-							-	-	-	-	-	
El Moro Avenue - east of South Bay Boule			Traffic direction:		In entry direction								
0+000	2448	Total	-		102	-		none	-	-	Average (of DGAC and PCC)		0
0+000	2448	Automobiles	-		96		40	none	-	-	Average (of DGAC and PCC)		0
0+000	2448	Medium trucks	-		3		40	none	-	-	Average (of DGAC and PCC)		0
0+000	2448	Heavy trucks	-		1		40	none	-	-	Average (of DGAC and PCC)		0
0+000	2448	Buses	-		1		40	none	-	-	Average (of DGAC and PCC)		0
0+000	2448	Motorcycles	-		1		40	none	-	-	Average (of DGAC and PCC)		0
0+000	2448	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+328	-							-	-	-	-	-	
El Moro Avenue - west of 11th Street			Traffic direction:		In entry direction								
0+000	3480	Total	-		145	-		none	-	-	Average (of DGAC and PCC)		0
0+000	3480	Automobiles	-		138		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3480	Medium trucks	-		4		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3480	Heavy trucks	-		1		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3480	Buses	-		1		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3480	Motorcycles	-		1		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3480	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+401	-							-	-	-	-	-	
El Moro Avenue - west of 7th Street			Traffic direction:		In entry direction								
0+000	3792	Total	-		158	-		none	-	-	Average (of DGAC and PCC)		0
0+000	3792	Automobiles	-		148		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3792	Medium trucks	-		5		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3792	Heavy trucks	-		1		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3792	Buses	-		2		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3792	Motorcycles	-		2		40	none	-	-	Average (of DGAC and PCC)		0
0+000	3792	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+523	-							-	-	-	-	-	
Santa Ysabel Avenue - east of South Bay			Traffic direction:		In entry direction								
0+000	648	Total	-		27	-		none	-	-	Average (of DGAC and PCC)		0
0+000	648	Automobiles	-		26		56	none	-	-	Average (of DGAC and PCC)		0
0+000	648	Medium trucks	-		1		56	none	-	-	Average (of DGAC and PCC)		0
0+000	648	Heavy trucks	-	-			56	none	-	-	Average (of DGAC and PCC)		0
0+000	648	Buses	-	-			56	none	-	-	Average (of DGAC and PCC)		0
0+000	648	Motorcycles	-	-			56	none	-	-	Average (of DGAC and PCC)		0
0+000	648	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+412	-							-	-	-	-	-	
Santa Ysabel Avenue - east of 11th Stree			Traffic direction:		In entry direction								
0+000	16680	Total	-		695	-		none	-	-	Average (of DGAC and PCC)		0
0+000	16680	Automobiles	-		657		56	none	-	-	Average (of DGAC and PCC)		0
0+000	16680	Medium trucks	-		21		56	none	-	-	Average (of DGAC and PCC)		0
0+000	16680	Heavy trucks	-		3		56	none	-	-	Average (of DGAC and PCC)		0
0+000	16680	Buses	-		7		56	none	-	-	Average (of DGAC and PCC)		0
0+000	16680	Motorcycles	-		7		56	none	-	-	Average (of DGAC and PCC)		0
0+000	16680	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+696	-							-	-	-	-	-	
Santa Ysabel Avenue - west of 11th Stree			Traffic direction:		In entry direction								
0+000	8904	Total	-		371	-		none	-	-	Average (of DGAC and PCC)		0
0+000	8904	Automobiles	-		350		56	none	-	-	Average (of DGAC and PCC)		0
0+000	8904	Medium trucks	-		11		56	none	-	-	Average (of DGAC and PCC)		0
0+000	8904	Heavy trucks	-		2		56	none	-	-	Average (of DGAC and PCC)		0
0+000	8904	Buses	-		4		56	none	-	-	Average (of DGAC and PCC)		0
0+000	8904	Motorcycles	-		4		56	none	-	-	Average (of DGAC and PCC)		0
0+000	8904	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+202	-							-	-	-	-	-	
Santa Ysabel Avenue - east of 7th Street			Traffic direction:		In entry direction								
0+000	9504	Total	-		396	-		none	-	-	Average (of DGAC and PCC)		0
0+000	9504	Automobiles	-		374		56	none	-	-	Average (of DGAC and PCC)		0
0+000	9504	Medium trucks	-		12		56	none	-	-	Average (of DGAC and PCC)		0
0+000	9504	Heavy trucks	-		2		56	none	-	-	Average (of DGAC and PCC)		0
0+000	9504	Buses	-		4		56	none	-	-	Average (of DGAC and PCC)		0
0+000	9504	Motorcycles	-		4		56	none	-	-	Average (of DGAC and PCC)		0
0+000	9504	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+200	-							-	-	-	-	-	

Santa Ysabel Avenue - west of 7th Street	Traffic direction:	In entry direction									
0+000	5760	Total	-		240	-	none	-	-	Average (of DGAC and PCC)	0
0+000	5760	Automobiles	-		228	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5760	Medium trucks	-		7	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5760	Heavy trucks	-		1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5760	Buses	-		2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5760	Motorcycles	-		2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5760	Auxiliary Vehicle	-	-	-		none	-	-	Average (of DGAC and PCC)	0
0+753	-						-	-	-	-	-
Pecho Road - north of Los Osos Valley Ro	Traffic direction:	In entry direction									
0+000	2832	Total	-		118	-	none	-	-	Average (of DGAC and PCC)	0
0+000	2832	Automobiles	-		111	32	none	-	-	Average (of DGAC and PCC)	0
0+000	2832	Medium trucks	-		4	32	none	-	-	Average (of DGAC and PCC)	0
0+000	2832	Heavy trucks	-		1	32	none	-	-	Average (of DGAC and PCC)	0
0+000	2832	Buses	-		1	32	none	-	-	Average (of DGAC and PCC)	0
0+000	2832	Motorcycles	-		1	32	none	-	-	Average (of DGAC and PCC)	0
0+000	2832	Auxiliary Vehicle	-	-	-		none	-	-	Average (of DGAC and PCC)	0
0+685	-						-	-	-	-	-
Doris Avenue - south of Los Osos Valley	Traffic direction:	In entry direction									
0+000	4656	Total	-		194	-	none	-	-	Average (of DGAC and PCC)	0
0+000	4656	Automobiles	-		183	40	none	-	-	Average (of DGAC and PCC)	0
0+000	4656	Medium trucks	-		6	40	none	-	-	Average (of DGAC and PCC)	0
0+000	4656	Heavy trucks	-		1	40	none	-	-	Average (of DGAC and PCC)	0
0+000	4656	Buses	-		2	40	none	-	-	Average (of DGAC and PCC)	0
0+000	4656	Motorcycles	-		2	40	none	-	-	Average (of DGAC and PCC)	0
0+000	4656	Auxiliary Vehicle	-	-	-		none	-	-	Average (of DGAC and PCC)	0
0+428	-						-	-	-	-	-
Doris Avenue - north of Los Osos Valley	Traffic direction:	In entry direction									
0+000	456	Total	-		19	-	none	-	-	Average (of DGAC and PCC)	0
0+000	456	Automobiles	-		18	40	none	-	-	Average (of DGAC and PCC)	0
0+000	456	Medium trucks	-		1	40	none	-	-	Average (of DGAC and PCC)	0
0+000	456	Heavy trucks	-	-		40	none	-	-	Average (of DGAC and PCC)	0
0+000	456	Buses	-	-		40	none	-	-	Average (of DGAC and PCC)	0
0+000	456	Motorcycles	-	-		40	none	-	-	Average (of DGAC and PCC)	0
0+000	456	Auxiliary Vehicle	-	-	-		none	-	-	Average (of DGAC and PCC)	0
0+958	-						-	-	-	-	-
Ravenna Avenue - south of Los Osos Valle	Traffic direction:	In entry direction									
0+000	1272	Total	-		53	-	none	-	-	Average (of DGAC and PCC)	0
0+000	1272	Automobiles	-		49	40	none	-	-	Average (of DGAC and PCC)	0
0+000	1272	Medium trucks	-		2	40	none	-	-	Average (of DGAC and PCC)	0
0+000	1272	Heavy trucks	-	-		40	none	-	-	Average (of DGAC and PCC)	0
0+000	1272	Buses	-		1	40	none	-	-	Average (of DGAC and PCC)	0
0+000	1272	Motorcycles	-		1	40	none	-	-	Average (of DGAC and PCC)	0
0+000	1272	Auxiliary Vehicle	-	-	-		none	-	-	Average (of DGAC and PCC)	0
0+405	-						-	-	-	-	-
7th Street - north of Ramona Avenue	Traffic direction:	In entry direction									
0+000	5544	Total	-		231	-	none	-	-	Average (of DGAC and PCC)	0
0+000	5544	Automobiles	-		219	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5544	Medium trucks	-		7	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5544	Heavy trucks	-		1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5544	Buses	-		2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5544	Motorcycles	-		2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	5544	Auxiliary Vehicle	-	-	-		none	-	-	Average (of DGAC and PCC)	0
1+093	-						-	-	-	-	-
Bay View Heights Drive - south of Los Os	Traffic direction:	In entry direction									
0+000	5448	Total	-		227	-	none	-	-	Average (of DGAC and PCC)	0
0+000	5448	Automobiles	-		215	48	none	-	-	Average (of DGAC and PCC)	0
0+000	5448	Medium trucks	-		7	48	none	-	-	Average (of DGAC and PCC)	0
0+000	5448	Heavy trucks	-		1	48	none	-	-	Average (of DGAC and PCC)	0
0+000	5448	Buses	-		2	48	none	-	-	Average (of DGAC and PCC)	0
0+000	5448	Motorcycles	-		2	48	none	-	-	Average (of DGAC and PCC)	0
0+000	5448	Auxiliary Vehicle	-	-	-		none	-	-	Average (of DGAC and PCC)	0
1+689	-						-	-	-	-	-
9th Street - north of Los Osos Valley Ro	Traffic direction:	In entry direction									
0+000	19416	Total	-		809	-	none	-	-	Average (of DGAC and PCC)	0
0+000	19416	Automobiles	-		765	56	none	-	-	Average (of DGAC and PCC)	0
0+000	19416	Medium trucks	-		24	56	none	-	-	Average (of DGAC and PCC)	0
0+000	19416	Heavy trucks	-		4	56	none	-	-	Average (of DGAC and PCC)	0
0+000	19416	Buses	-		8	56	none	-	-	Average (of DGAC and PCC)	0
0+000	19416	Motorcycles	-		8	56	none	-	-	Average (of DGAC and PCC)	0
0+000	19416	Auxiliary Vehicle	-	-	-		none	-	-	Average (of DGAC and PCC)	0
2+175	-						-	-	-	-	-
11th Street - south of Santa Ysabel Aven	Traffic direction:	In entry direction									

0+000		4584	Total	-		191	-		none	-	-	Average (of DGAC and PCC)		0
0+000		4584	Automobiles	-		180		56	none	-	-	Average (of DGAC and PCC)		0
0+000		4584	Medium trucks	-		6		56	none	-	-	Average (of DGAC and PCC)		0
0+000		4584	Heavy trucks	-		1		56	none	-	-	Average (of DGAC and PCC)		0
0+000		4584	Buses	-		2		56	none	-	-	Average (of DGAC and PCC)		0
0+000		4584	Motorcycles	-		2		56	none	-	-	Average (of DGAC and PCC)		0
0+000		4584	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
1+867	-								-	-	-	-	-	
Los Olivos Avenue - west of 10th Street				Traffic direction:		In entry direction								
0+000		4488	Total	-		187	-		none	-	-	Average (of DGAC and PCC)		0
0+000		4488	Automobiles	-		176		48	none	-	-	Average (of DGAC and PCC)		0
0+000		4488	Medium trucks	-		6		48	none	-	-	Average (of DGAC and PCC)		0
0+000		4488	Heavy trucks	-		1		48	none	-	-	Average (of DGAC and PCC)		0
0+000		4488	Buses	-		2		48	none	-	-	Average (of DGAC and PCC)		0
0+000		4488	Motorcycles	-		2		48	none	-	-	Average (of DGAC and PCC)		0
0+000		4488	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+200	-								-	-	-	-	-	

7773 Los Osos Community Plan
SoundPLAN - Existing

No.	eceiver nan	Building side	Floor	Limit L(Aeq1h) dB(A)	Level w/o NP L(Aeq1h) dB(A)	Level w. NP L(Aeq1h) dB(A)	Difference L(Aeq1h) dB(A)	Conflict L(Aeq1h) dB(A)
1	1		1.Fl	-	67.2	0	-67.2	-
2	2		1.Fl	-	64.8	0	-64.8	-
3	3		1.Fl	-	61.9	0	-61.9	-
4	4		1.Fl	-	61.8	0	-61.8	-
5	5		1.Fl	-	61.1	0	-61.1	-
6	6		1.Fl	-	59.9	0	-59.9	-
7	7		1.Fl	-	60.7	0	-60.7	-
8	8		1.Fl	-	60.5	0	-60.5	-
9	9		1.Fl	-	65.9	0	-65.9	-
10	10		1.Fl	-	65.1	0	-65.1	-
11	11		1.Fl	-	66.8	0	-66.8	-
12	12		1.Fl	-	55.5	0	-55.5	-
13	13		1.Fl	-	51.4	0	-51.4	-
14	14		1.Fl	-	53.5	0	-53.5	-
15	15		1.Fl	-	54.2	0	-54.2	-
16	16		1.Fl	-	52.3	0	-52.3	-
17	17		1.Fl	-	53.9	0	-53.9	-
18	18		1.Fl	-	51.4	0	-51.4	-
19	19		1.Fl	-	50.6	0	-50.6	-
20	20		1.Fl	-	51.8	0	-51.8	-
21	21		1.Fl	-	50.5	0	-50.5	-
22	22		1.Fl	-	49.0	0	-49.0	-
23	23		1.Fl	-	58.8	0	-58.8	-
24	24		1.Fl	-	56.6	0	-56.6	-
25	25		1.Fl	-	56.7	0	-56.7	-
26	26		1.Fl	-	54.0	0	-54.0	-
27	27		1.Fl	-	48.4	0	-48.4	-
28	28		1.Fl	-	51.1	0	-51.1	-
29	29		1.Fl	-	42.5	0	-42.5	-
30	30		1.Fl	-	47.0	0	-47.0	-
31	31		1.Fl	-	54.2	0	-54.2	-
32	32		1.Fl	-	52.5	0	-52.5	-
33	33		1.Fl	-	59.4	0	-59.4	-
34	34		1.Fl	-	53.7	0	-53.7	-

ATTACHMENT 3

SoundPLAN Data – Future Vehicle Traffic Noise

Stationing km	ADT Veh/24h	Traffic values Vehicles type	Vehicle nai	day Veh/h	Speed km/h	Control device	Constr. Speed km/h	Affect. veh. %	Road surface	Gradient Min / Max %
Los Osos Valley Road - east of Los Osos			Traffic direction:		In entry direction					
0+000	52128	Total	-	2172	-	none	-	-	Average (of DGAC and PCC)	0
0+000	52128	Automobiles	-	2052	89	none	-	-	Average (of DGAC and PCC)	0
0+000	52128	Medium trucks	-	65	89	none	-	-	Average (of DGAC and PCC)	0
0+000	52128	Heavy trucks	-	11	89	none	-	-	Average (of DGAC and PCC)	0
0+000	52128	Buses	-	22	89	none	-	-	Average (of DGAC and PCC)	0
0+000	52128	Motorcycles	-	22	89	none	-	-	Average (of DGAC and PCC)	0
0+000	52128	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
4+961	-					-	-	-	-	-
Los Osos Valley Road - east of South Bay			Traffic direction:		In entry direction					
0+000	51216	Total	-	2134	-	none	-	-	Average (of DGAC and PCC)	0
0+000	51216	Automobiles	-	2017	72	none	-	-	Average (of DGAC and PCC)	0
0+000	51216	Medium trucks	-	64	72	none	-	-	Average (of DGAC and PCC)	0
0+000	51216	Heavy trucks	-	11	72	none	-	-	Average (of DGAC and PCC)	0
0+000	51216	Buses	-	21	72	none	-	-	Average (of DGAC and PCC)	0
0+000	51216	Motorcycles	-	21	72	none	-	-	Average (of DGAC and PCC)	0
0+000	51216	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+452	-					-	-	-	-	-
Los Osos Valley Road - west of South Bay			Traffic direction:		In entry direction					
0+000	45432	Total	-	1893	-	none	-	-	Average (of DGAC and PCC)	0
0+000	45432	Automobiles	-	1789	56	none	-	-	Average (of DGAC and PCC)	0
0+000	45432	Medium trucks	-	57	56	none	-	-	Average (of DGAC and PCC)	0
0+000	45432	Heavy trucks	-	9	56	none	-	-	Average (of DGAC and PCC)	0
0+000	45432	Buses	-	19	56	none	-	-	Average (of DGAC and PCC)	0
0+000	45432	Motorcycles	-	19	56	none	-	-	Average (of DGAC and PCC)	0
0+000	45432	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+436	-					-	-	-	-	-
Los Osos Valley Road - east of 9th Stree			Traffic direction:		In entry direction					
0+000	39912	Total	-	1663	-	none	-	-	Average (of DGAC and PCC)	0
0+000	39912	Automobiles	-	1571	56	none	-	-	Average (of DGAC and PCC)	0
0+000	39912	Medium trucks	-	50	56	none	-	-	Average (of DGAC and PCC)	0
0+000	39912	Heavy trucks	-	8	56	none	-	-	Average (of DGAC and PCC)	0
0+000	39912	Buses	-	17	56	none	-	-	Average (of DGAC and PCC)	0
0+000	39912	Motorcycles	-	17	56	none	-	-	Average (of DGAC and PCC)	0
0+000	39912	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+280	-					-	-	-	-	-
Los Osos Valley Road - west of Bush Driv			Traffic direction:		In entry direction					
0+000	35280	Total	-	1470	-	none	-	-	Average (of DGAC and PCC)	0
0+000	35280	Automobiles	-	1389	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35280	Medium trucks	-	44	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35280	Heavy trucks	-	7	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35280	Buses	-	15	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35280	Motorcycles	-	15	56	none	-	-	Average (of DGAC and PCC)	0
0+000	35280	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+321	-					-	-	-	-	-
Los Osos Valley Road - west of Palisades			Traffic direction:		In entry direction					
0+000	24288	Total	-	1012	-	none	-	-	Average (of DGAC and PCC)	0
0+000	24288	Automobiles	-	957	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24288	Medium trucks	-	30	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24288	Heavy trucks	-	5	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24288	Buses	-	10	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24288	Motorcycles	-	10	64	none	-	-	Average (of DGAC and PCC)	0
0+000	24288	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+605	-					-	-	-	-	-
Los Osos Valley Road - east of Doris Ave			Traffic direction:		In entry direction					
0+000	23784	Total	-	991	-	none	-	-	Average (of DGAC and PCC)	0
0+000	23784	Automobiles	-	936	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23784	Medium trucks	-	30	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23784	Heavy trucks	-	5	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23784	Buses	-	10	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23784	Motorcycles	-	10	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23784	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+433	-					-	-	-	-	-
Los Osos Valley Road - east of Pecho Dri			Traffic direction:		In entry direction					
0+000	23352	Total	-	973	-	none	-	-	Average (of DGAC and PCC)	0
0+000	23352	Automobiles	-	919	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23352	Medium trucks	-	29	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23352	Heavy trucks	-	5	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23352	Buses	-	10	64	none	-	-	Average (of DGAC and PCC)	0
0+000	23352	Motorcycles	-	10	64	none	-	-	Average (of DGAC and PCC)	0

0+000	23352	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+495	-					-	-	-	-	-
South Bay Boulevard - north of Los Osos				Traffic direction:		In entry direction				
0+000	49752	Total	-	2073	-	none	-	-	Average (of DGAC and PCC)	0
0+000	49752	Automobiles	-	1959	89	none	-	-	Average (of DGAC and PCC)	0
0+000	49752	Medium trucks	-	62	89	none	-	-	Average (of DGAC and PCC)	0
0+000	49752	Heavy trucks	-	10	89	none	-	-	Average (of DGAC and PCC)	0
0+000	49752	Buses	-	21	89	none	-	-	Average (of DGAC and PCC)	0
0+000	49752	Motorcycles	-	21	89	none	-	-	Average (of DGAC and PCC)	0
0+000	49752	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+996	-					-	-	-	-	-
South Bay Boulevard - south of Santa Ysa				Traffic direction:		In entry direction				
0+000	41064	Total	-	1711	-	none	-	-	Average (of DGAC and PCC)	0
0+000	41064	Automobiles	-	1617	89	none	-	-	Average (of DGAC and PCC)	0
0+000	41064	Medium trucks	-	51	89	none	-	-	Average (of DGAC and PCC)	0
0+000	41064	Heavy trucks	-	9	89	none	-	-	Average (of DGAC and PCC)	0
0+000	41064	Buses	-	17	89	none	-	-	Average (of DGAC and PCC)	0
0+000	41064	Motorcycles	-	17	89	none	-	-	Average (of DGAC and PCC)	0
0+000	41064	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+343	-					-	-	-	-	-
South Bay Boulevard - north of Santa Ysa				Traffic direction:		In entry direction				
0+000	43440	Total	-	1810	-	none	-	-	Average (of DGAC and PCC)	0
0+000	43440	Automobiles	-	1711	89	none	-	-	Average (of DGAC and PCC)	0
0+000	43440	Medium trucks	-	54	89	none	-	-	Average (of DGAC and PCC)	0
0+000	43440	Heavy trucks	-	9	89	none	-	-	Average (of DGAC and PCC)	0
0+000	43440	Buses	-	18	89	none	-	-	Average (of DGAC and PCC)	0
0+000	43440	Motorcycles	-	18	89	none	-	-	Average (of DGAC and PCC)	0
0+000	43440	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+615	-					-	-	-	-	-
Pecho Valley Road - south of Monarch Lan				Traffic direction:		In entry direction				
0+000	12120	Total	-	505	-	none	-	-	Average (of DGAC and PCC)	0
0+000	12120	Automobiles	-	477	64	none	-	-	Average (of DGAC and PCC)	0
0+000	12120	Medium trucks	-	15	64	none	-	-	Average (of DGAC and PCC)	0
0+000	12120	Heavy trucks	-	3	64	none	-	-	Average (of DGAC and PCC)	0
0+000	12120	Buses	-	5	64	none	-	-	Average (of DGAC and PCC)	0
0+000	12120	Motorcycles	-	5	64	none	-	-	Average (of DGAC and PCC)	0
0+000	12120	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+556	-					-	-	-	-	-
Pecho Valley Road - south of Rodman Driv				Traffic direction:		In entry direction				
0+000	7776	Total	-	324	-	none	-	-	Average (of DGAC and PCC)	0
0+000	7776	Automobiles	-	312	64	none	-	-	Average (of DGAC and PCC)	0
0+000	7776	Medium trucks	-	7	64	none	-	-	Average (of DGAC and PCC)	0
0+000	7776	Heavy trucks	-	1	64	none	-	-	Average (of DGAC and PCC)	0
0+000	7776	Buses	-	2	64	none	-	-	Average (of DGAC and PCC)	0
0+000	7776	Motorcycles	-	2	64	none	-	-	Average (of DGAC and PCC)	0
0+000	7776	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+155	-					-	-	-	-	-
Santa Ynez Avenue - west of 11th Street				Traffic direction:		In entry direction				
0+000	9816	Total	-	409	-	none	-	-	Average (of DGAC and PCC)	0
0+000	9816	Automobiles	-	387	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9816	Medium trucks	-	12	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9816	Heavy trucks	-	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9816	Buses	-	4	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9816	Motorcycles	-	4	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9816	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+336	-					-	-	-	-	-
Nipomo Avenue - west of South Bay Boulev				Traffic direction:		In entry direction				
0+000	9960	Total	-	415	-	none	-	-	Average (of DGAC and PCC)	0
0+000	9960	Automobiles	-	393	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9960	Medium trucks	-	12	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9960	Heavy trucks	-	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9960	Buses	-	4	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9960	Motorcycles	-	4	56	none	-	-	Average (of DGAC and PCC)	0
0+000	9960	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+161	-					-	-	-	-	-
Ramona Avenue - west of 9th Street				Traffic direction:		In entry direction				
0+000	13152	Total	-	548	-	none	-	-	Average (of DGAC and PCC)	0
0+000	13152	Automobiles	-	519	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13152	Medium trucks	-	16	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13152	Heavy trucks	-	3	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13152	Buses	-	5	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13152	Motorcycles	-	5	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13152	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0

0+521	-						-	-	-	-	-	
Ramona Avenue - west of 4th Street			Traffic direction:		In entry direction							
0+000	6192	Total	-		258	-	none	-	-	Average (of DGAC and PCC)		0
0+000	6192	Automobiles	-		243	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6192	Medium trucks	-		8	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6192	Heavy trucks	-		1	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6192	Buses	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6192	Motorcycles	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6192	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+735	-						-	-	-	-	-	
El Moro Avenue - east of South Bay Boule			Traffic direction:		In entry direction							
0+000	2064	Total	-		86	-	none	-	-	Average (of DGAC and PCC)		0
0+000	2064	Automobiles	-		81	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2064	Medium trucks	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2064	Heavy trucks	-	-		56	none	-	-	Average (of DGAC and PCC)		0
0+000	2064	Buses	-		1	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2064	Motorcycles	-		1	56	none	-	-	Average (of DGAC and PCC)		0
0+000	2064	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+328	-						-	-	-	-	-	
El Moro Avenue - west of 11th Street			Traffic direction:		In entry direction							
0+000	6456	Total	-		269	-	none	-	-	Average (of DGAC and PCC)		0
0+000	6456	Automobiles	-		254	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6456	Medium trucks	-		8	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6456	Heavy trucks	-		1	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6456	Buses	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6456	Motorcycles	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	6456	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+401	-						-	-	-	-	-	
El Moro Avenue - west of 7th Street			Traffic direction:		In entry direction							
0+000	7824	Total	-		326	-	none	-	-	Average (of DGAC and PCC)		0
0+000	7824	Automobiles	-		308	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7824	Medium trucks	-		10	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7824	Heavy trucks	-		2	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7824	Buses	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7824	Motorcycles	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7824	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+523	-						-	-	-	-	-	
Santa Ysabel Avenue - east of South Bay			Traffic direction:		In entry direction							
0+000	912	Total	-		38	-	none	-	-	Average (of DGAC and PCC)		0
0+000	912	Automobiles	-		37	56	none	-	-	Average (of DGAC and PCC)		0
0+000	912	Medium trucks	-		1	56	none	-	-	Average (of DGAC and PCC)		0
0+000	912	Heavy trucks	-	-		56	none	-	-	Average (of DGAC and PCC)		0
0+000	912	Buses	-	-		56	none	-	-	Average (of DGAC and PCC)		0
0+000	912	Motorcycles	-	-		56	none	-	-	Average (of DGAC and PCC)		0
0+000	912	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+412	-						-	-	-	-	-	
Santa Ysabel Avenue - east of 11th Stree			Traffic direction:		In entry direction							
0+000	10704	Total	-		446	-	none	-	-	Average (of DGAC and PCC)		0
0+000	10704	Automobiles	-		423	56	none	-	-	Average (of DGAC and PCC)		0
0+000	10704	Medium trucks	-		13	56	none	-	-	Average (of DGAC and PCC)		0
0+000	10704	Heavy trucks	-		2	56	none	-	-	Average (of DGAC and PCC)		0
0+000	10704	Buses	-		4	56	none	-	-	Average (of DGAC and PCC)		0
0+000	10704	Motorcycles	-		4	56	none	-	-	Average (of DGAC and PCC)		0
0+000	10704	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+696	-						-	-	-	-	-	
Santa Ysabel Avenue - west of 11th Stree			Traffic direction:		In entry direction							
0+000	7752	Total	-		323	-	none	-	-	Average (of DGAC and PCC)		0
0+000	7752	Automobiles	-		305	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7752	Medium trucks	-		10	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7752	Heavy trucks	-		2	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7752	Buses	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7752	Motorcycles	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	7752	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+202	-						-	-	-	-	-	
Santa Ysabel Avenue - east of 7th Street			Traffic direction:		In entry direction							
0+000	8256	Total	-		344	-	none	-	-	Average (of DGAC and PCC)		0
0+000	8256	Automobiles	-		326	56	none	-	-	Average (of DGAC and PCC)		0
0+000	8256	Medium trucks	-		10	56	none	-	-	Average (of DGAC and PCC)		0
0+000	8256	Heavy trucks	-		2	56	none	-	-	Average (of DGAC and PCC)		0
0+000	8256	Buses	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	8256	Motorcycles	-		3	56	none	-	-	Average (of DGAC and PCC)		0
0+000	8256	Auxiliary Vehicle	-	-		-	none	-	-	Average (of DGAC and PCC)		0
0+200	-						-	-	-	-	-	

Santa Ysabel Avenue - west of 7th Street				Traffic direction:	In entry direction					
0+000	4176	Total	-	174	-	none	-	-	Average (of DGAC and PCC)	0
0+000	4176	Automobiles	-	164	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4176	Medium trucks	-	5	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4176	Heavy trucks	-	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4176	Buses	-	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4176	Motorcycles	-	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4176	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+753	-					-	-	-	-	-
Pecho Road - north of Los Osos Valley Ro				Traffic direction:	In entry direction					
0+000	2568	Total	-	107	-	none	-	-	Average (of DGAC and PCC)	0
0+000	2568	Automobiles	-	101	56	none	-	-	Average (of DGAC and PCC)	0
0+000	2568	Medium trucks	-	3	56	none	-	-	Average (of DGAC and PCC)	0
0+000	2568	Heavy trucks	-	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	2568	Buses	-	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	2568	Motorcycles	-	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	2568	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+685	-					-	-	-	-	-
Doris Avenue - south of Los Osos Valley				Traffic direction:	In entry direction					
0+000	4368	Total	-	182	-	none	-	-	Average (of DGAC and PCC)	0
0+000	4368	Automobiles	-	172	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4368	Medium trucks	-	5	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4368	Heavy trucks	-	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4368	Buses	-	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4368	Motorcycles	-	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	4368	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+428	-					-	-	-	-	-
Doris Avenue - north of Los Osos Valley				Traffic direction:	In entry direction					
0+000	552	Total	-	23	-	none	-	-	Average (of DGAC and PCC)	0
0+000	552	Automobiles	-	22	56	none	-	-	Average (of DGAC and PCC)	0
0+000	552	Medium trucks	-	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	552	Heavy trucks	-	-	56	none	-	-	Average (of DGAC and PCC)	0
0+000	552	Buses	-	-	56	none	-	-	Average (of DGAC and PCC)	0
0+000	552	Motorcycles	-	-	56	none	-	-	Average (of DGAC and PCC)	0
0+000	552	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+958	-					-	-	-	-	-
Ravenna Avenue - south of Los Osos Valle				Traffic direction:	In entry direction					
0+000	1488	Total	-	62	-	none	-	-	Average (of DGAC and PCC)	0
0+000	1488	Automobiles	-	58	56	none	-	-	Average (of DGAC and PCC)	0
0+000	1488	Medium trucks	-	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	1488	Heavy trucks	-	-	56	none	-	-	Average (of DGAC and PCC)	0
0+000	1488	Buses	-	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	1488	Motorcycles	-	1	56	none	-	-	Average (of DGAC and PCC)	0
0+000	1488	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
0+405	-					-	-	-	-	-
7th Street - north of Ramona Avenue				Traffic direction:	In entry direction					
0+000	8328	Total	-	347	-	none	-	-	Average (of DGAC and PCC)	0
0+000	8328	Automobiles	-	329	56	none	-	-	Average (of DGAC and PCC)	0
0+000	8328	Medium trucks	-	10	56	none	-	-	Average (of DGAC and PCC)	0
0+000	8328	Heavy trucks	-	2	56	none	-	-	Average (of DGAC and PCC)	0
0+000	8328	Buses	-	3	56	none	-	-	Average (of DGAC and PCC)	0
0+000	8328	Motorcycles	-	3	56	none	-	-	Average (of DGAC and PCC)	0
0+000	8328	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+093	-					-	-	-	-	-
Bay View Heights Drive - south of Los Os				Traffic direction:	In entry direction					
0+000	13848	Total	-	577	-	none	-	-	Average (of DGAC and PCC)	0
0+000	13848	Automobiles	-	545	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13848	Medium trucks	-	17	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13848	Heavy trucks	-	3	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13848	Buses	-	6	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13848	Motorcycles	-	6	56	none	-	-	Average (of DGAC and PCC)	0
0+000	13848	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
1+689	-					-	-	-	-	-
9th Street - north of Los Osos Valley Ro				Traffic direction:	In entry direction					
0+000	17448	Total	-	727	-	none	-	-	Average (of DGAC and PCC)	0
0+000	17448	Automobiles	-	687	56	none	-	-	Average (of DGAC and PCC)	0
0+000	17448	Medium trucks	-	22	56	none	-	-	Average (of DGAC and PCC)	0
0+000	17448	Heavy trucks	-	4	56	none	-	-	Average (of DGAC and PCC)	0
0+000	17448	Buses	-	7	56	none	-	-	Average (of DGAC and PCC)	0
0+000	17448	Motorcycles	-	7	56	none	-	-	Average (of DGAC and PCC)	0
0+000	17448	Auxiliary Vehicle	-	-	-	none	-	-	Average (of DGAC and PCC)	0
2+175	-					-	-	-	-	-
11th Street - south of Santa Ysabel Aven				Traffic direction:	In entry direction					

0+000	2976	Total	-		124	-		none	-	-	Average (of DGAC and PCC)		0
0+000	2976	Automobiles	-		117		56	none	-	-	Average (of DGAC and PCC)		0
0+000	2976	Medium trucks	-		4		56	none	-	-	Average (of DGAC and PCC)		0
0+000	2976	Heavy trucks	-		1		56	none	-	-	Average (of DGAC and PCC)		0
0+000	2976	Buses	-		1		56	none	-	-	Average (of DGAC and PCC)		0
0+000	2976	Motorcycles	-		1		56	none	-	-	Average (of DGAC and PCC)		0
0+000	2976	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
1+867	-							-	-	-	-	-	
Los Olivos Avenue - west of 10th Street			Traffic direction:		In entry direction								
0+000	7032	Total	-		293	-		none	-	-	Average (of DGAC and PCC)		0
0+000	7032	Automobiles	-		277		56	none	-	-	Average (of DGAC and PCC)		0
0+000	7032	Medium trucks	-		9		56	none	-	-	Average (of DGAC and PCC)		0
0+000	7032	Heavy trucks	-		1		56	none	-	-	Average (of DGAC and PCC)		0
0+000	7032	Buses	-		3		56	none	-	-	Average (of DGAC and PCC)		0
0+000	7032	Motorcycles	-		3		56	none	-	-	Average (of DGAC and PCC)		0
0+000	7032	Auxiliary Vehicle	-	-		-		none	-	-	Average (of DGAC and PCC)		0
0+200	-							-	-	-	-	-	

No.	eceiver nan	Building side	Floor	Limit L(Aeq1h) dB(A)	Level w/o NP L(Aeq1h) dB(A)	Level w. NP L(Aeq1h) dB(A)	Difference L(Aeq1h) dB(A)	Conflict L(Aeq1h) dB(A)
1	1		1.Fl	-	68.7	0	-68.7	-
2	2		1.Fl	-	66.1	0	-66.1	-
3	3		1.Fl	-	63.0	0	-63.0	-
4	4		1.Fl	-	62.5	0	-62.5	-
5	5		1.Fl	-	62.0	0	-62.0	-
6	6		1.Fl	-	61.6	0	-61.6	-
7	7		1.Fl	-	61.6	0	-61.6	-
8	8		1.Fl	-	61.5	0	-61.5	-
9	9		1.Fl	-	68.5	0	-68.5	-
10	10		1.Fl	-	67.5	0	-67.5	-
11	11		1.Fl	-	67.9	0	-67.9	-
12	12		1.Fl	-	58.7	0	-58.7	-
13	13		1.Fl	-	56.2	0	-56.2	-
14	14		1.Fl	-	55.8	0	-55.8	-
15	15		1.Fl	-	57.0	0	-57.0	-
16	16		1.Fl	-	56.7	0	-56.7	-
17	17		1.Fl	-	57.7	0	-57.7	-
18	18		1.Fl	-	54.5	0	-54.5	-
19	19		1.Fl	-	52.2	0	-52.2	-
20	20		1.Fl	-	55.4	0	-55.4	-
21	21		1.Fl	-	55.6	0	-55.6	-
22	22		1.Fl	-	50.4	0	-50.4	-
23	23		1.Fl	-	56.9	0	-56.9	-
24	24		1.Fl	-	56.0	0	-56.0	-
25	25		1.Fl	-	56.2	0	-56.2	-
26	26		1.Fl	-	53.0	0	-53.0	-
27	27		1.Fl	-	51.1	0	-51.1	-
28	28		1.Fl	-	53.3	0	-53.3	-
29	29		1.Fl	-	45.0	0	-45.0	-
30	30		1.Fl	-	49.5	0	-49.5	-
31	31		1.Fl	-	55.9	0	-55.9	-
32	32		1.Fl	-	58.0	0	-58.0	-
33	33		1.Fl	-	59.0	0	-59.0	-
34	34		1.Fl	-	52.3	0	-52.3	-

Appendix E

Transportation Impact Analysis – Technical Report

Los Osos Community Plan Update

Draft Transportation Impact Analysis Report

Prepared for:

John F. Rickenbach Planning and Environmental Consulting

Prepared by:

omni · means
ENGINEERING SOLUTIONS

Los Osos Community Plan Update

Draft Transportation Impact Analysis Report

Prepared for:

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Introduction

This report has been prepared by Omni-Means to provide a Transportation Impact Analysis Report (TIAR) for the proposed Los Osos Community Plan. The Community of Los Osos is undergoing a Community Plan Update led by John F. Rickenbach Planning and Environmental Consultants. As an integral part of this update, Los Osos has proposed a decrease in overall growth within the community, resulting in a Proposed Community Plan that would reduce the scale of the previously Adopted Estero Area Plan (2009). To adopt the Los Osos Community Plan, an accompanying environmental document consistent with CEQA guidelines needs to be certified. For this Community Plan Update, given the potential environmental considerations and impacts, including transportation, a full Environmental Impact Report (EIR) will be prepared. Omni-Means is commissioned to provide the Community Plan Update support for the Circulation and Transportation Element of the EIR, and provide a traffic impact analysis for the Proposed Community Plan. This Report presents the analyses associated with the Circulation and Transportation Element, which involves an update to the Los Osos Travel Demand Model (TDM). For the purposes of this report, the "project" is understood as the Proposed Community Plan, or Proposed Plan. The previously Adopted Estero Area Plan is understood as the Adopted Plan. Consistent with CEQA guidelines, the following traffic scenarios are evaluated as part of this TIAR:

- Existing Conditions
- Cumulative No Project Conditions (Adopted Estero Area Plan)
- Cumulative Plus Project Conditions (Proposed Community Plan)

Existing conditions establishes the baseline conditions and quantifies the current 2015 traffic operations at the study locations. Cumulative No Project conditions establishes the conditions that would exist due to the buildout of the Adopted Estero Area Plan, which is approximately twenty years out from the existing conditions (Year 2035). Cumulative Plus Project conditions establishes the conditions that would exist due to the buildout of the Proposed Community Plan. Cumulative Plus Project conditions is an analysis scenario in which project-related traffic impacts are examined in comparison to the Cumulative No Project conditions.

Background Information

Community Setting

The unincorporated Community of Los Osos is located in western San Luis Obispo County along the Pacific coastline, approximately 20 miles west of the City of San Luis Obispo and approximately 5 miles south of the City of Morro Bay. The community lies at the western edge of the Los Osos Valley, bounded by Baywood Park to the north, Morro Bay to the west and north-west, and Los Osos Creek to the east. The Montaña De Oro State Park forms a peninsula extending into Morro Bay, to the west of the community. Los Osos can be characterized as a semi-retirement, semi-vacation type community consisting mostly of residential neighborhoods with the main commercial area centered around Los Osos Valley Road, and the Baywood commercial area centered around 2nd Street. Employment, shopping, and service opportunities available from the other urban areas lying to the north and east have an influence on Los Osos travel patterns as reflected in the daily commuter patterns. Regional and local access to/within Los Osos is provided by State Route 1 (SR 1), Los Osos Valley Road, and South Bay Boulevard. The existing roadway network is generally rural in character with various local roads unpaved. Based on U.S. Census Bureau data, Los Osos's population has relatively stayed the same from 14,351 in 2000 to 14,276 in 2010; a 0.5% decrease. Figure 1 presents the Los Osos study area and vicinity map.

Los Osos Travel Demand Model

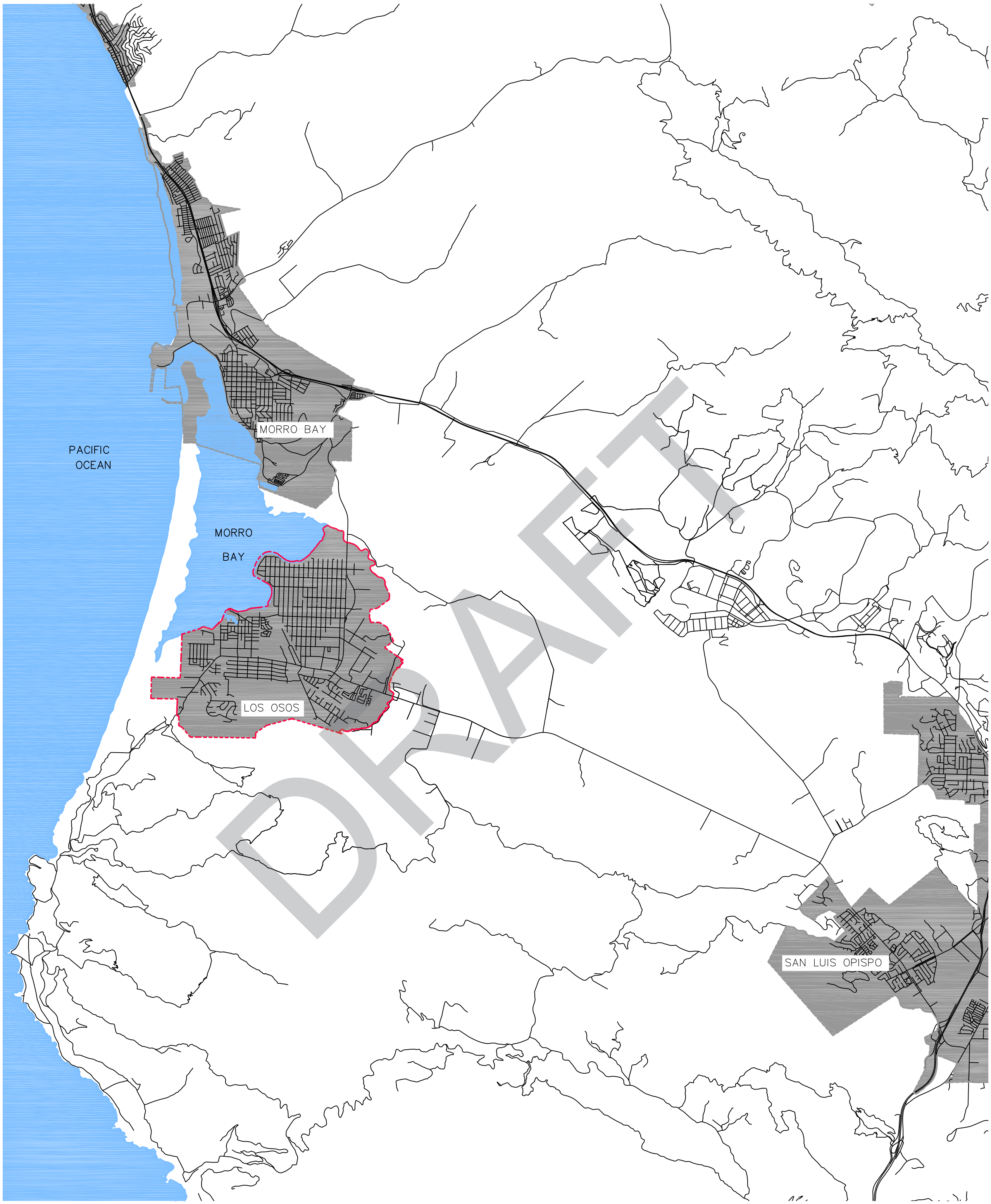
Los Osos is currently modeled within the Los Osos Travel Demand Model (TDM), which was updated by Omni-Means in 2010. The Los Osos TDM simulates current traffic flow patterns and forecasts future travel demands and traffic flow patterns on a community-level basis. The model is calibrated to and consistent with the San Luis Obispo Council of Governments (SLOCOG) TDM, which is used to estimate external traffic through the modeling area.

Modeling scenarios in the Los Osos TDM are based on two principal components: land use inputs and roadway network inputs. The proposed Los Osos Community Plan Update includes changes to both the buildout land uses and the buildout roadway network. Therefore, a new model scenario was developed for the Proposed Community Plan in order to forecast future travel demand throughout the community. The land uses provided by the County for the Proposed Community Plan were adapted for use in the travel demand model (which uses slightly different land use categories) to ensure that the model produces trip generation and distribution representative of proposed non-residential land uses. Proposed residential unit counts were directly applied to the model land use scenario.

The currently Adopted Estero Area Plan model scenario was also updated in the Los Osos TDM to reflect incremental changes in the adopted plan since preparation of the 2009 Circulation Plan. Both the Adopted and Proposed Community Plan buildout scenarios are forecasted to 2035 conditions, and are compared against each other in terms of their net increase against existing 2015 conditions. Table 1 presents a summary of the existing land use information within the Los Osos TDM.

TABLE 1:
TRAVEL DEMAND MODEL LAND USE SUMMARY

Land Use		Existing Los Osos TDM	Adopted Plan		Existing Los Osos TDM	Proposed Plan	
			Buildout	Net Increase		Buildout	Net Increase
Residential (DU)							
	Single-Family[1]	5,426	7,264	1,838	1,061	6,487	1,061
	Multi-Family	895	1,864	969	800	1,695	800
	TOTAL	**6,321**	**9,128**	**2,807**	**1,861**	**8,182**	**1,861**
Non-Residential (SF)							
	Retail	439,200	669,045	229,845	439,200	668,100	228,900
	Commercial/ Service	221,000	176,779	-44,221	221,000	284,600	63,600
	Office	10,100	214,261	204,161	10,100	61,600	51,500
	Recreation	0	24,975	24,975	0	10,000	10,000
	PF/Recreation	0	0	0	0	10,000	10,000
	TOTAL	**670,300**	**1,085,060**	**414,760**	**670,300**	**1,034,300**	**364,000**



Los Osos Community Plan Update EIR

Figure 1

Study Area Map

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Roadway Network

The existing physical conditions for the Los Osos area roadway network are described below. A hierarchy of street provides access to and from residential, commercial, educational, and industrial uses throughout the County and beyond. A route's design, including number of lanes, is determined by its functional classification and its projected traffic levels to achieve "safe and convenient movement at the development intensity anticipated in the Land Use Element".

State Freeways and Expressways

Expressways are facilities whose junctions may have partial control of access, but which may or may not be divided or have grade separations at intersections. Freeways are facilities whose junctions are controlled access with grade-separated intersections. Expressways and freeways usually have posted speed limits ranging from 55 to 70 mph. The following freeway and expressway services the Los Osos area.

State Route 1 (SR 1) is an east-west four-lane roadway located north of the Los Osos community. SR 1 forms a full-diamond interchange with South Bay Boulevard approximately 3 miles north of the Los Osos area (as designated by the Los Osos Community Services District boundary). SR 1 is designated as a freeway from the South Bay Boulevard interchange and to the west, and is designated as an expressway east of this interchange. The SR 1 corridor performs a functional role in the regional distribution of trips to and from the Los Osos area.

Arterials

Arterial facilities serve to connect areas of major activity within the urban area and function primarily to distribute cross-town traffic from freeways/highways to collector streets. Within the Los Osos area, arterial streets are mostly two lane facilities with maximum operating speeds ranging from 30 to 55 mph. In addition, arterial facilities generally have limited access to adjacent land uses. The following arterials service the Los Osos area.

Los Osos Valley Road is an east-west four-lane arterial between Los Osos Creek and 9th Street and a two-lane arterial west of Bush Drive and east of Los Osos Creek. Between Bush Drive and 9th Street, there is a three-lane section, with two eastbound travel lanes and one westbound travel lane. The four- and three-lane sections of Los Osos Valley Road have a two-way left-turn lane, except between Fairchild Way and South Bay Boulevard where there is a raised median and left-turn pockets. There are also two-way left-turn lanes from Montana Way to Monarch Lane, Palisades Avenue to Bush Drive, and Lariat Drive to Sombrero Drive. The intersections with South Bay Boulevard, 10th Street, 9th Street, and Doris Avenue are signalized. The posted speed limit is 25 to 35 mph west of South Bay Boulevard and 45 mph shortly east of South Bay Boulevard. East of the study area, Los Osos Valley Road is a two-lane rural highway connecting to the City of San Luis Obispo. Southwest of Monarch Lane, Los Osos Valley Road continues as Pecho Valley Road towards Montana De Oro State Park.

South Bay Boulevard is a north-south two-lane arterial that connects Los Osos Valley Road and SR 1. The intersections with Los Osos Valley Road, El Morro Avenue, and Santa Ysabel Avenue are both signalized, while the intersections with Nipomo Avenue and Pismo Avenue are unsignalized with stop-control on these and other minor streets. The speed limit through the study area is 50 to 55 mph, and 25 mph within the school zone near the Los Osos Middle School at the intersection with El Morro Avenue. North of the community of Los Osos, South Bay Boulevard is a two-lane rural roadway traveling through Morro Bay State Park to the City of Morro Bay and SR 1.

Collectors

Collectors function as connector routes between local and arterial streets providing access to residential, commercial, and industrial property. Additionally, the Circulation Element identifies collectors as serving to provide bicycle and equestrian travel away from arterials for safety purposes. Two lane collectors have a maximum capacity of approximately 12,000 and generally operate at 30 mph.

Bayview Heights Drive, Binscarth Road, Broderson Avenue, Doris Avenue, El Morro Avenue, Fairchild Way, Highland Drive, Nipomo Avenue, Palisades Avenue, Pecho Road, Pine Avenue, Ramona Avenue, Ravenna Avenue, Rodman Drive, Santa Maria Avenue, Santa Ynez Avenue, Santa Ysabel Avenue, Skyline Drive, 2nd Street, 3rd Street, 7th Street, 9th Street, 11th Street, and **14th Street** are other important two-lane minor arterial/major collector facilities that provide communitywide circulation and access to/from the major arterials, Los Osos Valley Road and South Bay Boulevard. These roadways, due to variations in dimensions between segments, have been assumed as collector roadways for level of service and calibration purposes.

Levels of Service (LOS) Methodology and Policy

The following section outlines the methodology and analysis parameters used to quantify existing conditions.

Level of Service Methodology

Traffic operations have been quantified through the determination of "Level of Service" (LOS). Level of Service is a qualitative measure of traffic operating conditions, whereby a letter grade "A" through "F" is assigned to an intersection or roadway segment representing progressively worsening traffic conditions. The following section outlines the methodology and analysis parameters used to quantify existing conditions.

Roadway Capacity

Roadway segment Levels of Service were estimated using Highway Capacity Manual 2000 (HCM 2000) methodologies. The Average Daily Traffic (ADT) based capacity thresholds used to calculate the LOS for the study roadway segments are presented in Table 2.

TABLE 2:
DAILY ROADWAY CAPACITIES BY FACILITY TYPE

Roadway Type	Average Daily Traffic (ADT) – Total of Both Directions				
	A	B	C	D	E
Four-Lane Major Arterial	22,000	25,000	29,000	32,500	36,000
Three-Lane Major Arterial	16,000	19,000	21,500	24,500	27,000
Two-Lane Major Arterial	11,000	12,500	14,500	16,000	18,000
Two-Lane Collector	6,000	7,500	9,000	10,500	12,000

Notes: 1. Based on Highway Capacity Manual, Fourth Edition, Transportation Research Board, 2000.

2. All volume thresholds are approximate and assume ideal roadway characteristics. Actual thresholds for each LOS listed above may vary depending on a variety of factors including (but not limited to) roadway curvature and grade, intersection or interchange

Intersection Level of Service

Intersection Level of Service (LOS) will be calculated for all control types using the methods documented in the Transportation Research Board publications *Highway Capacity Manual, Fifth Edition, 2010*. Traffic operations have been quantified through the determination of LOS. LOS determinations are presented on a letter grade scale from "A" to "F", whereby LOS "A" represents free-flow operating conditions and LOS "F" represents over-capacity conditions. For a signalized or all-way stop-controlled (AWSC) intersection, an LOS determination is based on the calculated averaged delay for all approaches and movements. For a two-way stop-controlled (TWSC) intersection, an LOS determination is based upon the calculated average delay for all movements of the worst-performing approach. The *Synchro 9 (Trafficware*) software program was used to implement the HCM 2010 analysis methodologies, except for isolated intersections where the geometry limits the software's capability, i.e. two-stage gap acceptance for two-way left turn lanes, and the HCM 2000 analysis methodology was used. Synchro 9 takes into account intersection signal phasing and queuing constraints when calculating delay, the corresponding delay, and queue lengths. Assessment of “design level” parameters (including queuing on intersection lane groups, stacking length requirements, coordinated signal operations analyses, etc.) have not been included in this study. LOS definitions for different types of intersection controls are presented in Table 3.

TABLE 3:
INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Type of Flow	Delay	Maneuverability	Stopped Delay/Vehicle		
				Signalized	Un signalized	All-Way Stop
A	Stable Flow	Very slight delay. Progression is very favorable, with most vehicles arriving during the green phase not stopping at all.	Turning movements are easily made, and nearly all drivers find freedom of operation.	< 10.0	< 10.0	< 10.0
B	Stable Flow	Good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	>10.0 and < 20.0	>10.0 and < 15.0	>10.0 and < 15.0
C	Stable Flow	Higher delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, although many still pass through the intersection without stopping.	Back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted	>20.0 and < 35.0	>15.0 and < 25.0	>15.0 and < 25.0
D	Approaching Unstable Flow	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	Maneuverability is severely limited during short periods due to temporary back-ups.	>35.0 and < 55.0	>25.0 and < 35.0	>25.0 and < 35.0
E	Unstable Flow	Generally considered to be the limit of acceptable delay. Indicative of poor progression, long cycle lengths, and high volume-to-capacity ratios. Individual cycle failures are frequent occurrences.	There are typically long queues of vehicles waiting upstream of the intersection.	>55.0 and < 80.0	>35.0 and < 50.0	>35.0 and < 50.0
F	Forced Flow	Generally considered to be unacceptable to most drivers. Often occurs with over saturation. May also occur at high volume-to-capacity ratios. There are many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors.	Jammed conditions. Back-ups from other locations restrict or prevent movement. Volumes may vary widely, depending principally on the downstream back-up conditions.	> 80.0	> 50.0	> 50.0

Level of Service Policy

Per the Circulation Element of the San Luis Obispo County General Plan Circulation Element:

> *"The current County policy calls for LOS "D" or better service on roadways in urban areas and LOS "C" on rural roads."*

Consistent with the County policies, this study will consider LOS "C" as the standard acceptable threshold for all study intersections and roadways outside the Urban Reserve Limit (URL) line, and LOS "D" as the standard acceptable threshold for all study intersections and roadways inside the Urban Reserve Limit line maintained by the County of San Luis Obispo.

Standards of Significance

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on transportation and circulation if it would result in:

- Conflict with an applicable plan, congestion management program, ordinance or policy establishing measures of effectiveness for the performance of the circulation system at the local or regional level, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
    - *On local roadways*: A significant impact would occur if level of service at buildout would fall below LOS D, measured on an average daily traffic (ADT) basis or peak hour intersection operation basis. The adopted County General Plan Circulation Element also identifies LOS D as the threshold for acceptable operations within the Los Osos Urban Reserve Limit line;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Existing Conditions

Los Osos roadway facilities were evaluated on a daily basis using Average Daily Traffic (ADT) counts collected by Omni-Means. Intersection facilities were evaluated on an AM and PM peak hour basis using peak hour turning movement counts collected by Omni-Means.

Existing Traffic Data Collection

In December 2015, Omni-Means collected daily roadway counts for 11 key roadway segments and AM and PM peak hour turning movement counts at 18 key intersections. These counts were collected across the Baywood-Los Osos area in support of the Los Osos Community Plan Update. Counts were collected during an average weekday, when schools were in session. These counts will provide the baseline conditions for roadway and intersections facilities throughout Los Osos. The following is a list of the counts collected.

Eleven (11) Daily Traffic Count Locations

1. Los Osos Valley Road west of Lariat Drive
2. Los Osos Valley Road east of South Bay Boulevard
3. Los Osos Valley Road west of South Bay Boulevard
4. Los Osos Valley Road east of 9th Street
5. Los Osos Valley Road west of Palisades Avenue
6. Pecho Road north of Los Osos Valley Road
7. Pecho Valley Road west of Roadman Drive
8. Santa Ysabel Avenue west of South Bay Boulevard
9. South Bay Boulevard north of Santa Ysabel Boulevard
10. South Bay Boulevard south of Santa Ysabel Boulevard
11. South Bay Boulevard north of Los Osos Valley Road

Eighteen AM and PM Intersection Peak Hour Traffic Count Locations

1. El Morro Avenue / 11th Street
2. Los Osos Valley Road / Doris Avenue
3. Los Osos Valley Road / Pine Avenue
4. Los Osos Valley Road / Ravenna Avenue
5. Los Osos Valley Road / Palisades Avenue
6. Los Osos Valley Road / 9th Street / Bayview Heights Drive
7. Los Osos Valley Road / 10th Street
8. Los Osos Valley Road / Sunset Drive
9. Los Osos Valley Road / Fairchild Way
10. Los Osos Valley Road / South Bay Boulevard
11. Ramona Avenue / 4th Street
12. Ramona Avenue / 7th Street
13. Santa Ysabel Avenue / 7th Street
14. Santa Ysabel Avenue / 11th Street
15. South Bay Boulevard / Nipomo Avenue
16. South Bay Boulevard / Pismo Avenue
17. South Bay Boulevard / El Morro Avenue
18. South Bay Boulevard / Santa Ysabel Avenue

Figure 2 presents the existing lane geometrics and control at the study intersections. Figure 3 presents the existing Average Daily Traffic on the study roadways. Figure 4 presents the existing AM and PM peak hour volumes at the study intersections.

Seasonal Variations in Traffic

Given that Los Osos is a coastal recreational community that attracts seasonal, vacation-oriented travel, noticeable levels of ground traffic count fluctuations are possible depending on the time of the year the traffic counts were taken. Typically, Los Osos traffic counts taken during summer months tend to be somewhat higher than those conducted during the rest of the year. Table 4 shows the comparison of available ground counts between the existing 2015 counts taken in December and the 2008 ADT counts taken during the end of the summer (July-September), with the majority of the counts collected during August. The 2008 ADT counts served as a basis for the calibration of the Los Osos Travel Demand Model, which was updated by Omni-Means in 2010.

TABLE 4:
HISTORICAL ROADWAY AVERAGE DAILY TRAFFIC

Roadway	Location	Facility Type	2015 Average Daily Traffic[1]	2008 Average Daily Traffic[2]	% Increase/ Decrease
Los Osos Valley Road	west of Lariat Drive	Four-Lane Major Arterial	15,558	18,360	-15%
Los Osos Valley Road	east of South Bay Boulavard	Four-Lane Major Arterial	15,719	17,110	-8%
Los Osos Valley Road	west of South Bay Boulavard	Four-Lane Major Arterial	14,743	16,270	-9%
Los Osos Valley Road	east of 9th Street	Four-Lane Major Arterial	14,357	16,110	-11%
Los Osos Valley Road	east of 9th Street	Four-Lane Major Arterial	14,357	16,110	-11%
Los Osos Valley Road	west of Palisades Avenue	Two-Lane Major Arterial	9,282	9,690	-4%
Pecho Road	north of Los Osos Valley Road	Two-Lane Collector	1,173	1,530	-23%
Pecho Valley Road	west of Rodman Drive	Two-Lane Major Arterial	1,206	1,790	-33%
Santa Ysabel Avenue[3]	west of South Bay Boulavard	Two-Lane Collector	6,954	5,280	32%
South Bay Boulevard	north of Santa Ysabel Avenue	Two-Lane Major Arterial	14,145	14,560	-3%
South Bay Boulevard	south of Santa Ysabel Avenue	Two-Lane Major Arterial	9,998	10,790	-7%
South Bay Boulevard	north of Los Osos Valley Road	Two-Lane Major Arterial	11,443	12,060	-5%

Notes:

1. 2015 Average Daily Counts collected in December 2015

2. 2008 Average Daily Traffic based on Counts taken in the late summer (July-September) of 2006, 2007, or 2008

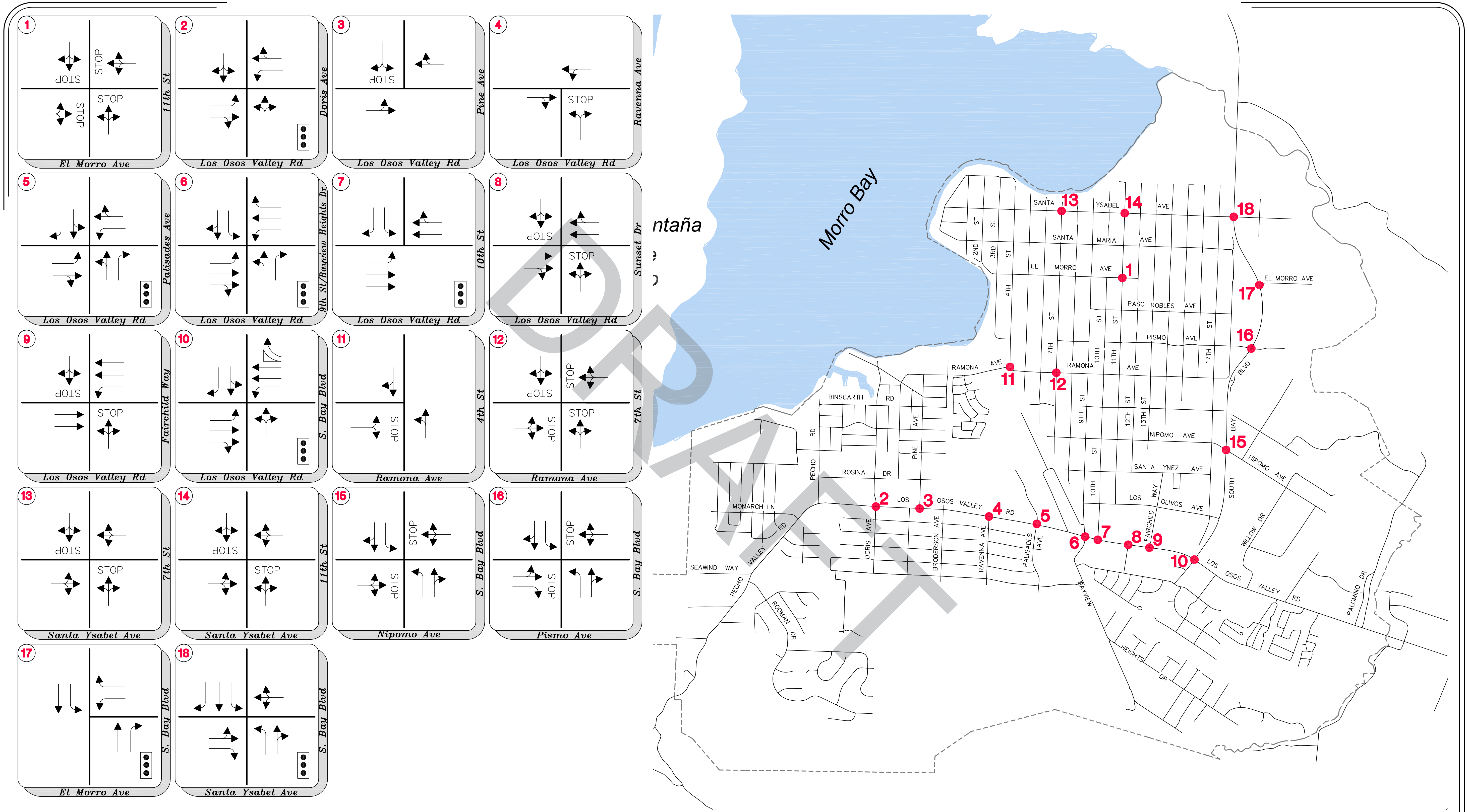
3. Stanta Ysabel Avenue west of South Bay Boulevard was compared to 2008 ADT collected east of 11th Street

As shown in Table 4, as evident, the December 2015 traffic counts were generally less than the August 2008 traffic counts, except for Santa Ysabel Avenue, because that count is compared to the count on Santa Ysabel Avenue east of 11th Street as the closest available comparison. There are two likely reasons for this general reduction. The first is the likely seasonal variation between August and December. The second is the persistent lack of recovery from the economic recession experienced in the last number of years. Nonetheless, the comparison does not evidence any likely increase in traffic in 2015. Therefore, the 2008 ADT counts at 23 other locations within the Los Osos Community will be used in conjunction with the 11 new 2015 ADT counts, totaling 34 roadway segment locations for analysis, which are regarded as reasonable estimates of the existing year ADT at the selected locations and were found acceptable for the purpose of this analysis.

Los Osos Community Plan Update EIR

Figure 2

Existing Lane Geometrics and Control



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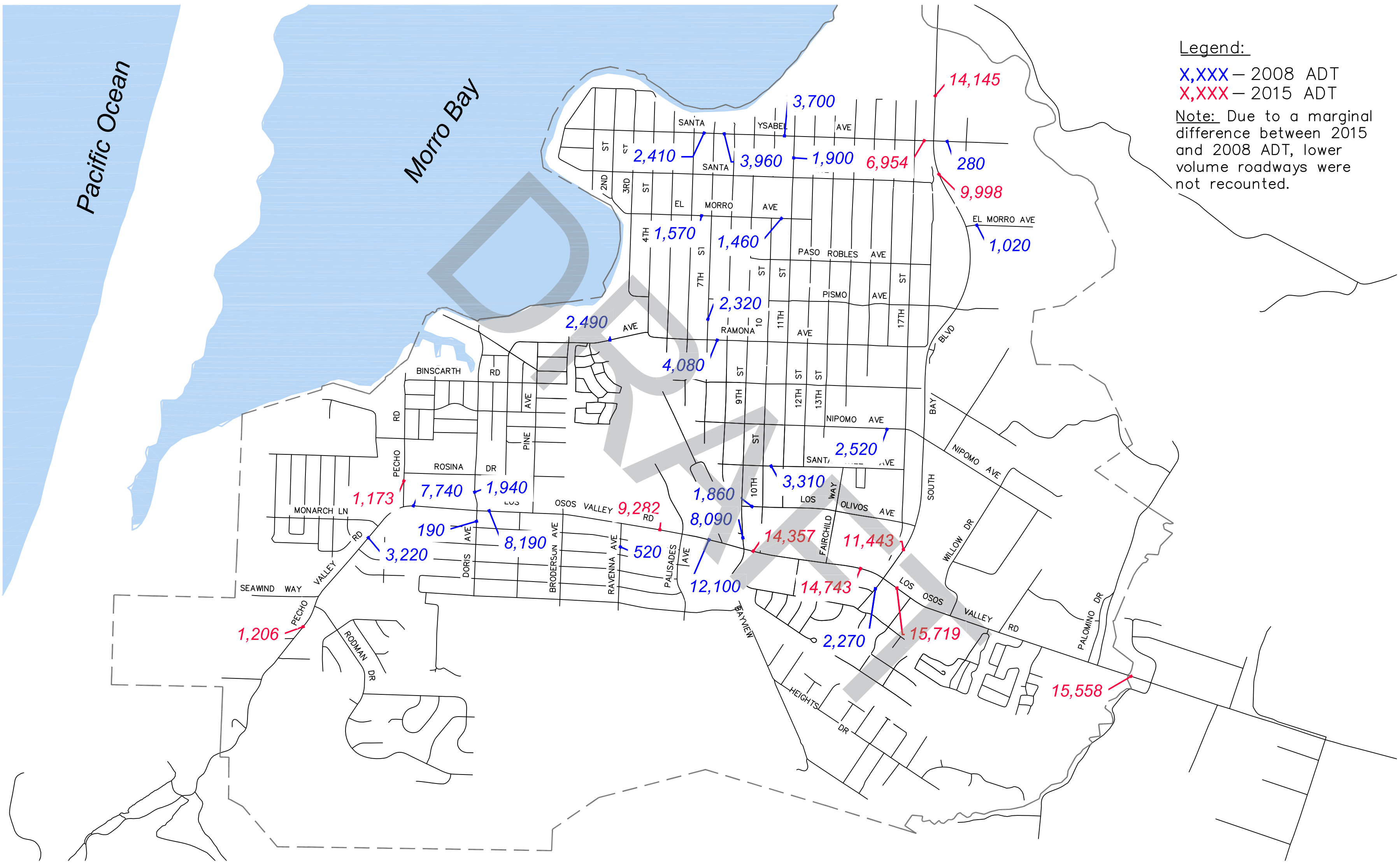

Los Osos Community Plan Update EIR

Figure 3

Existing Average Daily Traffc

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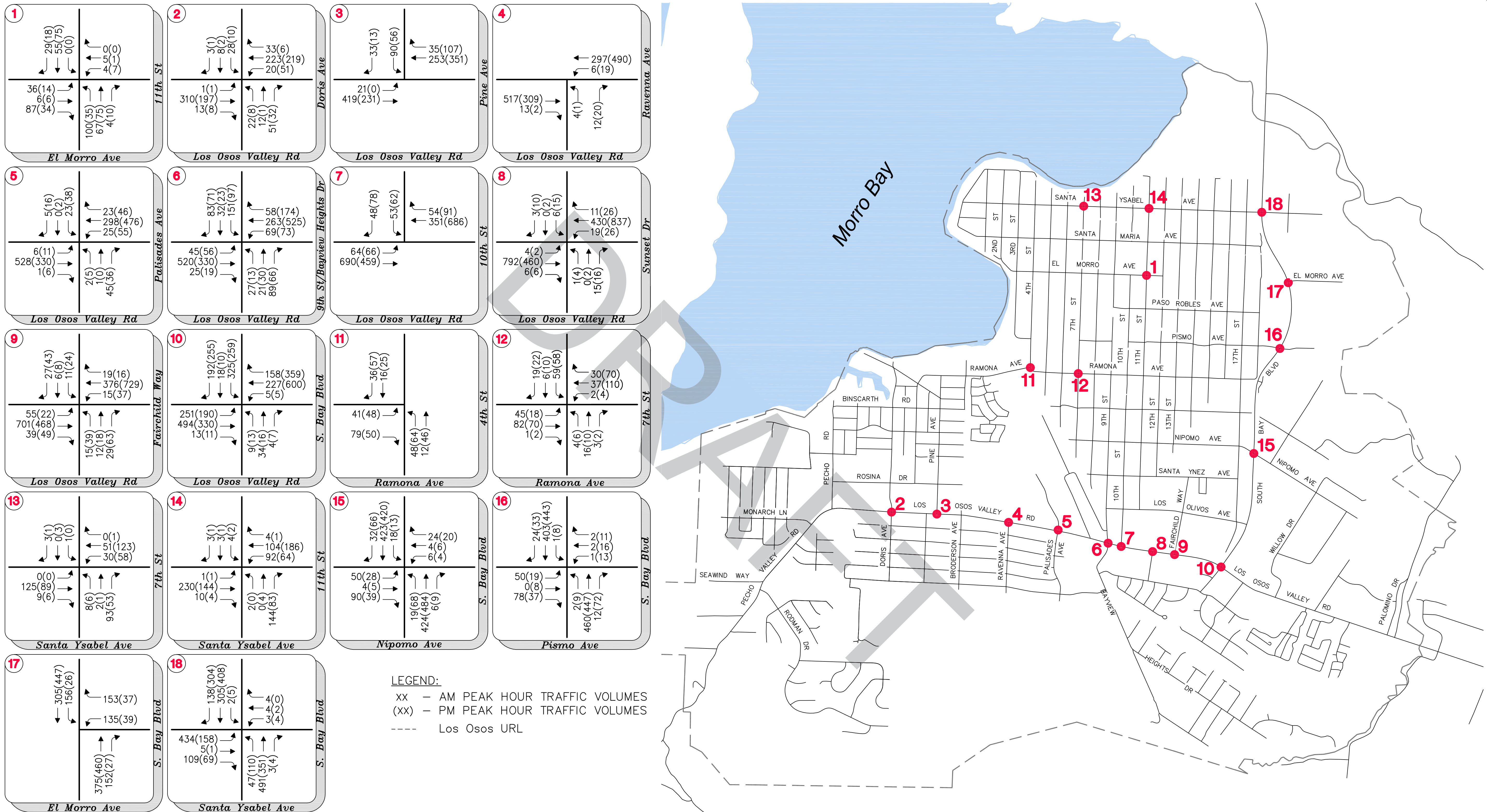

Los Osos Community Plan Update EIR

Figure 4

Existing Peak Hour Traffic Volumes

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Existing Traffic Operations

Existing Roadway Levels of Service

Existing roadway LOS was determined on a daily basis with counts collected by Omni-Means in December, 2015 and the 2008 ADT counts. The LOS for the 34 roadway segments throughout Los Osos were established using the capacities in Table 1. Conditions and deficiencies were identified by the Level of Service (LOS) threshold outlined in the San Luis Obispo County General Plan Circulation Element. Table 5 contains a summary of the existing roadway analysis and LOS conditions.

TABLE 5:
EXISTING CONDITIONS: ROADWAY LEVELS OF SERVICE

#	Roadway	Location	Facility Type	Year[1,2]	Target LOS	Average Daily Traffic	LOS
1	Los Osos Valley Road	e/o Los Osos Creek	Four-Lane Arterial	2015	D	15,558	A
2	Los Osos Valley Road	e/o South Bay Boulevard	Four-Lane Arterial	2015	D	15,719	A
3	Los Osos Valley Road	w/o South Bay Boulevard	Four-Lane Arterial	2015	D	14,743	A
4	Los Osos Valley Road	e/o 9th Street	Four-Lane Arterial	2015	D	14,357	A
5	Los Osos Valley Road	w/o Bush Drive	Three-Lane Arterial	2007	D	12,100	A
6	Los Osos Valley Road	w/o Palisades Avenue	Two-Lane Arterial	2015	D	9,282	A
7	Los Osos Valley Road	e/o Doris Avenue	Two-Lane Arterial	2006	D	8,190	A
8	Los Osos Valley Road	e/o Pecho Drive	Two-Lane Arterial	2006	D	7,740	A
9	South Bay Boulevard	n/o Los Osos Valley Road	Two-Lane Arterial	2015	D	11,443	B
10	South Bay Boulevard	s/o Santa Ysabel Avenue	Two-Lane Arterial	2015	D	9,998	A
11	South Bay Boulevard	n/o Santa Ysabel Avenue	Two-Lane Arterial	2015	D	14,145	C
12	Pecho Valley Road	s/o Monarch Lane	Two-Lane Arterial	2008	D	3,220	A
13	Pecho Valley Road	s/o Rodman Drive	Two-Lane Arterial	2015	D	1,206	A
14	Los Olivos Avenue	w/o 10th Street	Two-Lane Collector	2003	D	1,860	A
15	Santa Ynez Avenue	w/o 11th Street	Two-Lane Collector	2008	D	3,310	A
16	Nipomo Avenue	w/o South Bay Boulevard	Two-Lane Collector	2008	D	2,520	A
17	Ramona Avenue	w/o 9th Street	Two-Lane Collector	2008	D	4,080	A
18	Ramona Avenue	w/o 4th Street	Two-Lane Collector	2008	D	2,490	A
19	El Morro Avenue	e/o South Bay Boulevard	Two-Lane Collector	2008	D	1,020	A
20	El Morro Avenue	w/o 11th Street	Two-Lane Collector	2008	D	1,460	A
21	El Morro Avenue	w/o 7th Street	Two-Lane Collector	2008	D	1,570	A
22	Santa Ysabel Avenue	e/o South Bay Boulevard	Two-Lane Collector	2008	D	280	A
23	Santa Ysabel Avenue	e/o 11th Street	Two-Lane Collector	2015	D	6,954	B
24	Santa Ysabel Avenue	w/o 11th Street	Two-Lane Collector	2008	D	3,700	A
25	Santa Ysabel Avenue	e/o 7th Street	Two-Lane Collector	2007	D	3,960	A
26	Santa Ysabel Avenue	w/o 7th Street	Two-Lane Collector	2008	D	2,410	A
27	Pecho Road	n/o Los Osos Valley Road	Two-Lane Collector	2015	D	1,173	A
28	Doris Avenue	s/o Los Osos Valley Road	Two-Lane Collector	2008	D	1,940	A
29	Doris Avenue	n/o Los Osos Valley Road	Two-Lane Collector	2008	D	190	A
30	Ravenna Avenue	s/o Los Osos Valley Road	Two-Lane Collector	2008	D	520	A
31	7th Street	n/o Ramona Avenue	Two-Lane Collector	2008	D	2,320	A
32	Bayview Heights Drive	s/o Los Osos Valley Road	Two-Lane Collector	2003	D	2,270	A
33	9th Street	n/o Los Osos Valley Road	Two-Lane Collector	2006	D	8,090	C
34	11th Street	s/o Santa Ysabel Avenue	Two-Lane Collector	2006	D	1,900	A

Notes:
1. 2015 Average Daily Counts collected in December 2015.
2. 2008 Average Daily Traffic based on Counts taken in the late summer (July-September) of 2006, 2007, or 2008.

As presented in Table 4, all roadways currently operate at acceptable LOS.

Existing Intersection Levels of Service

Existing intersection counts were collected at 18 locations throughout the Los Osos area and analyzed using Synchro 9 (Trafficware) software. Existing AM and PM peak hour intersection traffic operations were quantified using the existing lane geometrics and controls (Figure 2) and the existing peak hour traffic volumes (Figure 3). Conditions and deficiencies were identified by the Level of Service (LOS) threshold outlined in the San Luis Obispo County General Plan. Table 6 contains a summary of the existing intersection analysis and LOS conditions.

TABLE 6:
EXISTING CONDITIONS: INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	El Morro Avenue at 11th Street	AWSC	D	9.4	A	7.8	A
2	Los Osos Valley Road at Doris Avenue	Signal	D	8.2	A	4.2	A
3	Los Osos Valley Road at Pine Avenue	TWSC	D	21.7	C	14.9	B
4	Los Osos Valley Road at Ravenna Avenue	TWSC	D	14.0	B	10.6	B
5	Los Osos Valley Road at Palisades Avenue	Signal	D	20.0	B	17.8	B
6	Los Osos Valley Road at 9th Street/Bayview	Signal	D	11.6	B	9.1	A
7	Los Osos Valley Road at 10th Street	Signal	D	14.6	B	17.7	B
8	Los Osos Valley Road at Sunset Drive[3]	TWSC	D	21.6	C	34.3	D
9	Los Osos Valley Road at Fairchild Way[3]	TWSC	D	26.3	D	34.1	D
10	**Los Osos Valley Road at S. Bay Boulevard**	**Signal**	**D**	**93.4**	**F**	**57.4**	**E**
11	Ramona Avenue at 4th Street	TWSC	D	9.4	A	10.2	B
12	Ramona Avenue at 7th Street	AWSC	D	8.0	A	8.2	A
13	Santa Ysabel Avenue at 7th Street	TWSC	D	10.0	A	11.3	B
14	Santa Ysabel Avenue at 11th Street	TWSC	D	15.4	C	13.3	B
15	S. Bay Boulevard at Nipomo Avenue	TWSC	D	30.6	D	25.6	D
16	S. Bay Boulevard at Pismo Avenue	TWSC	D	18.8	C	23.9	C
17	S. Bay Boulevard at El Morro Avenue	Signal	D	18.0	B	6.5	A
18	S. Bay Boulevard at Santa Ysabel Avenue	Signal	D	33.4	C	17.8	B

Notes:
1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for
3. LOS based on HCM 2000 TWSC Analysis

As shown in Table 6, the intersection of Los Osos Valley Road at South Bay Boulevard currently operates at unacceptable LOS with severe delays for the major left turning movements and excessive queuing on the southbound and eastbound approaches during both AM and PM peak hours.

Cumulative No Project Conditions

Cumulative No Project conditions refer to the buildout of the Adopted Los Osos Community Plan, which is approximately twenty years out from the existing conditions (Year 2035). The Adopted Estero Area Plan scenario of the Los Osos TDM was utilized to develop traffic forecasts for the roadway segments and intersections at the study locations. Buildout of the Adopted Estero Area Plan scenario is based on the buildout land uses and the roadway network. Interregional growth is a third model component that affects buildout forecasts. Interregional traffic patterns originating or terminating outside the Community model area were derived from the SLOCOG TDM.

Adopted Circulation System

The Adopted Estero Area Plan circulation improvements are based on the Adopted Circulation Map (Estero) and the Los Osos Circulation Study. It is assumed that roadways within the Community will be built out to standard. The roadway network improvements for the Cumulative No Project analysis scenario are listed below.

Roadway Improvements

- Widen S. Bay Boulevard to four lanes between Los Osos Valley Road and the northern Urban Reserve Line
- Widen Los Osos Valley Road to provide a two-way left turn lane between Palisades Avenue and Doris Avenue
- Install median with left turn pockets on Los Osos Valley Road between Bush Drive and South Bay Boulevard
- El Morro Avenue extension to South Bay Boulevard
- Ramona Avenue extension to South Bay Boulevard
- Highland Drive extension west to Los Osos Valley Road
- S. Bay Boulevard extension between Bay Oaks Drive and Pecho Valley Road
- Ravenna Avenue extension to Ramona Avenue
- Nipomo Avenue extension to Palomino Drive

Intersection Improvements

- Los Osos Valley Road / Pine Avenue - signalization
- Los Osos Valley Road / Ravenna Avenue - signalization
- Los Osos Valley Road / Sunset Drive – left turn pockets
- Los Osos Valley Road / Fairchild Way - signalization
- Los Osos Valley Road / South Bay Boulevard – southbound dual left turns
- Ravenna Avenue/Ramona Avenue/4rd Street – realignment
- South Bay Boulevard / Ramona Avenue – signalization
- South Bay Boulevard / Nipomo Avenue – signalization

Adopted Land Uses

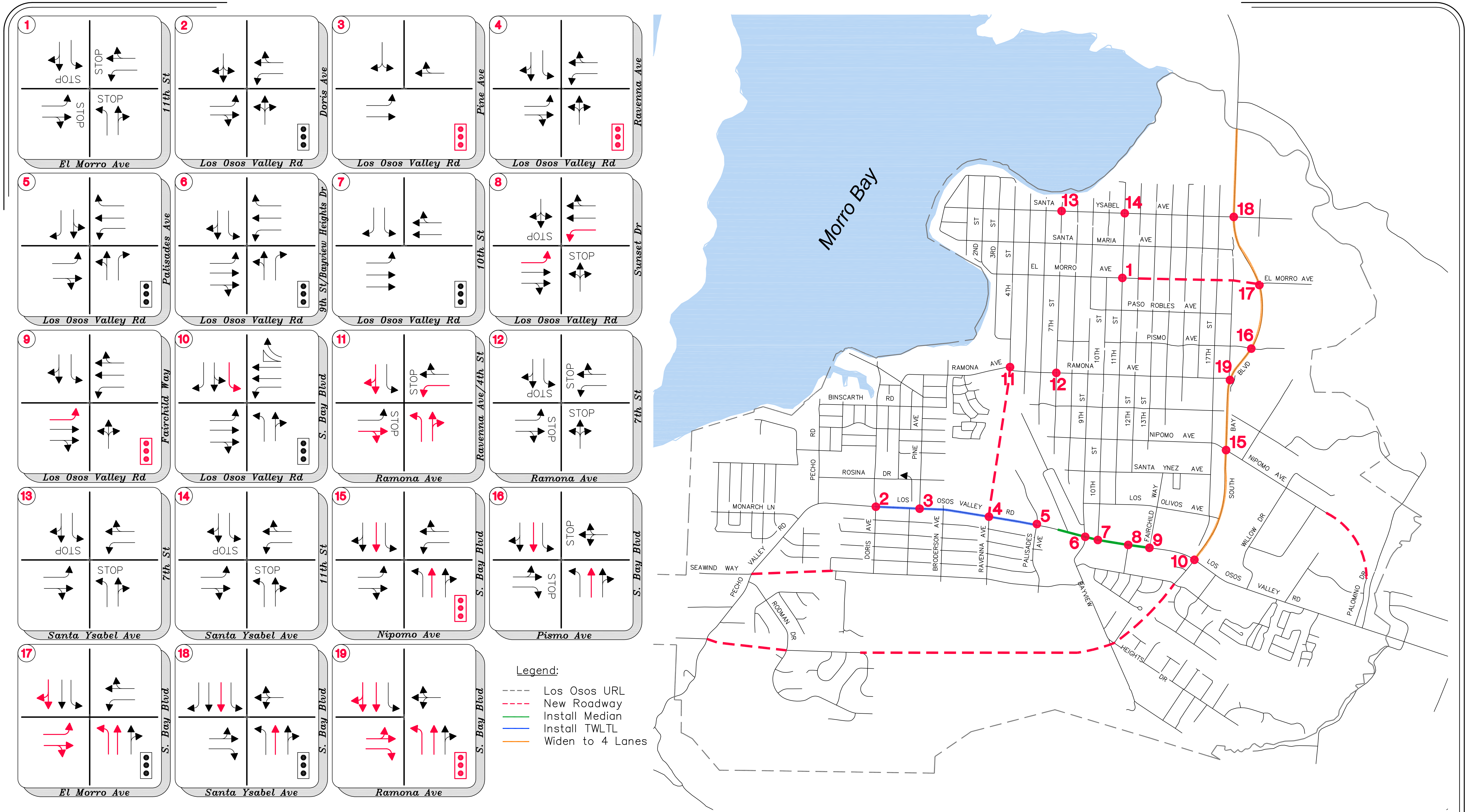
The currently Adopted Estero Area Plan model scenario was updated in the Los Osos TDM to reflect incremental changes in the adopted plan since preparation of the 2009 Circulation Plan. Table 7 summarizes the dwelling unit and non-residential square footage of the Adopted Estero Area Plan scenario compared to the existing land use. The land use quantities are used as inputs into the Adopted Estero Area Plan model scenario within the Los Osos TDM, which is utilized to forecast travel demand based on the Adopted Estero Area Plan.

TABLE 7:
ADOPTED LAND USES

Land Use		Existing Los Osos TDM	Adopted Plan	
			Buildout	Net Increase
Residential (DU)				
	Single-Family[1]	5,426	7,264	1,838
	Multi-Family	895	1,864	969
	TOTAL	**6,321**	**9,128**	**2,807**
Non-Residential (SF)				
	Retail	439,200	669,045	229,845
	Commercial/ Service	221,000	176,779	-44,221
	Office	10,100	214,261	204,161
	Recreation	0	24,975	24,975
	PF/Recreation	0	0	0
	TOTAL	**670,300**	**1,085,060**	**414,760**

Figure 5 presents the Adopted Estero Area Plan lane geometrics and control at the study intersections, including major roadway and intersection improvements. Figure 6 presents the Adopted Estero Area Plan Average Daily Traffic (ADT) on the study roadways. Figure 7 presents the Adopted Estero Area Plan AM and PM peak hour volumes at the study intersections.

Cumulative No Project conditions analyze the study roadways and intersections with the buildout of the Adopted Estero Area Plan. The Adopted Estero Area Plan scenario of the Los Osos TDM was utilized to project traffic forecasts for the roadway segments and intersections at the study locations. The roadway and intersection improvements were implemented within the Los Osos TDM and the Synchro networks for analysis.



Los Osos Community Plan Update EIR

Figure 5

Adopted Estero Area Plan Lane Geometrics and Control

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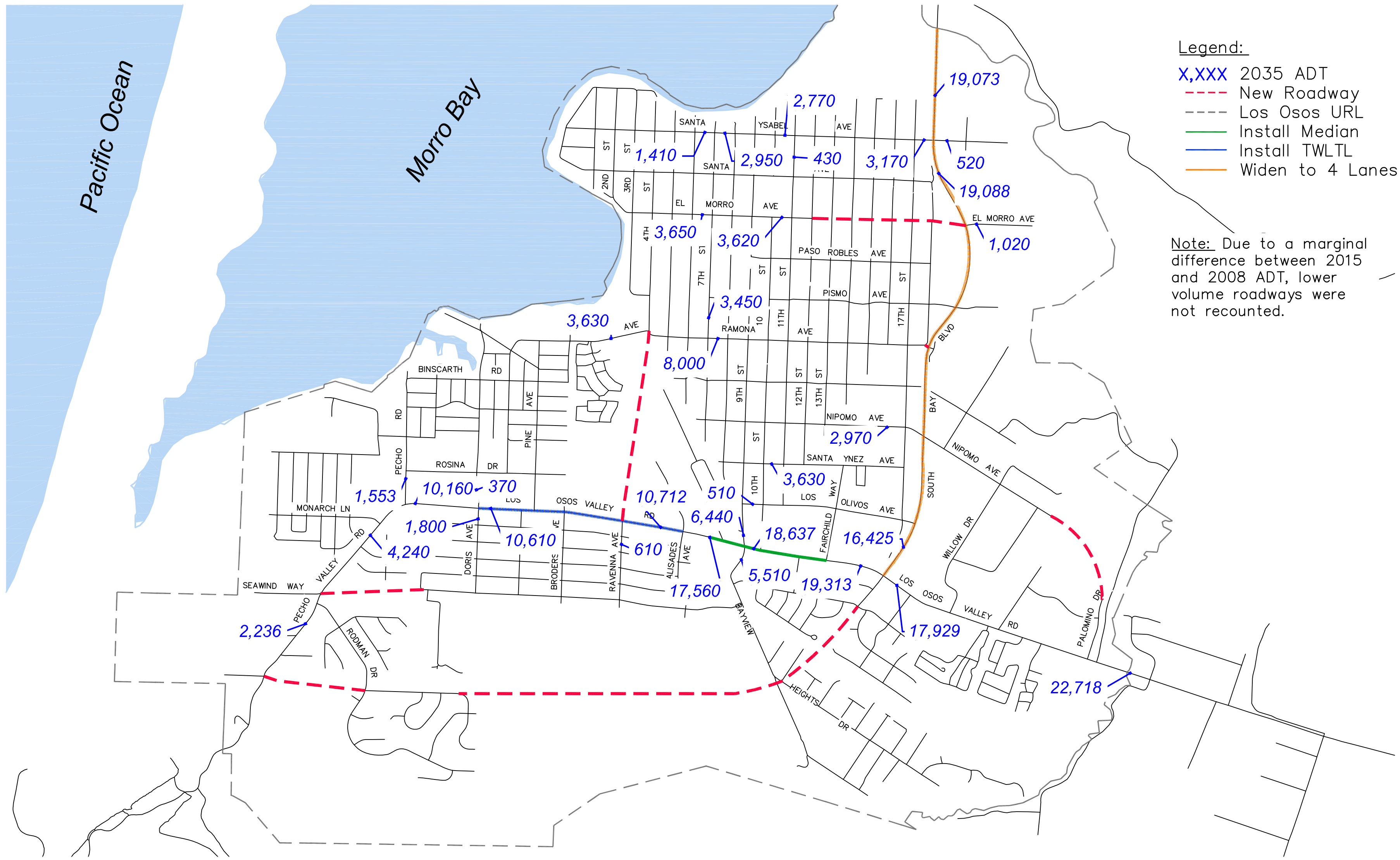
Figure 6

Adopted Estero Area Plan Buildout ADT



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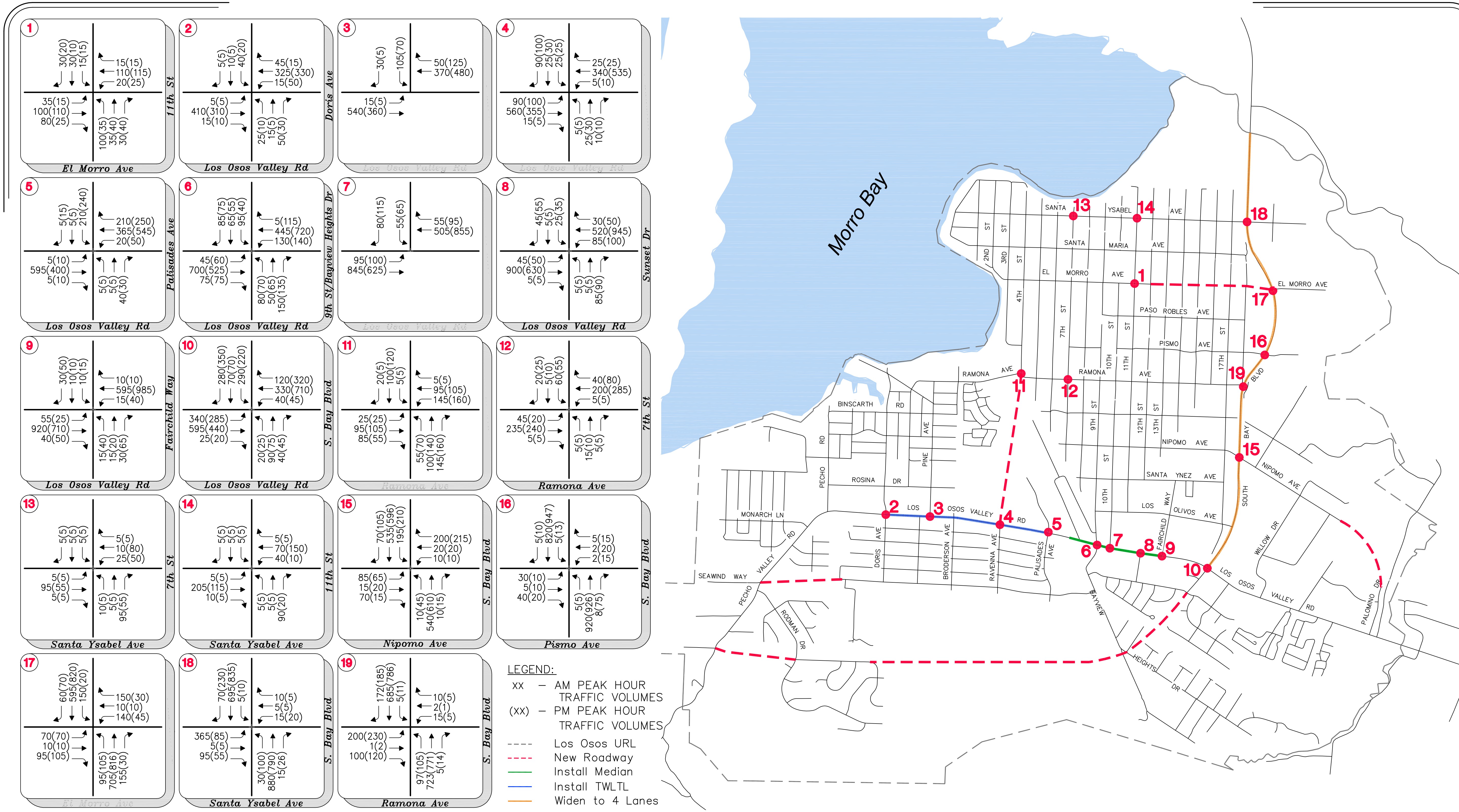

Los Osos Community Plan Update EIR

Figure 7

Adopted Estero Area Plan Buildout Peak Hour Traffic Volumes

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Cumulative No Project Traffic Operations

Cumulative No Project Roadway Levels of Service

Cumulative No Project daily roadway operations were quantified using the Cumulative No Project ADT volumes (Figure 6) and the roadway capacity thresholds presented in Table 2. Table 8 presents a summary of the Cumulative No Project roadway analysis and LOS conditions.

TABLE 8:
CUMULATIVE NO PROJECT CONDITIONS: ROADWAY LEVELS OF SERVICE

#	Roadway	Location	Facility Type	Target LOS	Projected Average Daily Traffic	LOS
1	Los Osos Valley Road	e/o Los Osos Creek	Four-Lane Arterial	D	22,718	B
2	Los Osos Valley Road	e/o South Bay Boulevard	Four-Lane Arterial	D	17,929	A
3	Los Osos Valley Road	w/o South Bay Boulevard	Four-Lane Arterial	D	19,313	A
4	Los Osos Valley Road	e/o 9th Street	Four-Lane Arterial	D	18,637	A
5	Los Osos Valley Road	w/o Bush Drive	Three-Lane Arterial	D	17,560	B
6	Los Osos Valley Road	w/o Palisades Avenue	Three-Lane Arterial	D	10,712	A
7	Los Osos Valley Road	e/o Doris Avenue	Three-Lane Arterial	D	10,610	A
8	Los Osos Valley Road	e/o Pecho Drive	Two-Lane Arterial	D	10,160	A
9	South Bay Boulevard	n/o Los Osos Valley Road	Four-Lane Arterial	D	16,425	A
10	South Bay Boulevard	s/o Santa Ysabel Avenue	Four-Lane Arterial	D	19,088	A
11	South Bay Boulevard	n/o Santa Ysabel Avenue	Four-Lane Arterial	D	19,073	A
12	Pecho Valley Road	s/o Monarch Lane	Two-Lane Arterial	D	4,240	A
13	Pecho Valley Road	s/o Rodman Drive	Two-Lane Arterial	D	2,236	A
14	Los Olivos Avenue	w/o 10th Street	Two-Lane Collector	D	510	A
15	Santa Ynez Avenue	w/o 11th Street	Two-Lane Collector	D	3,630	A
16	Nipomo Avenue	w/o South Bay Boulevard	Two-Lane Collector	D	2,970	A
17	Ramona Avenue	w/o 9th Street	Two-Lane Collector	D	8,000	C
18	Ramona Avenue	w/o 4th Street	Two-Lane Collector	D	3,630	A
19	El Morro Avenue	e/o South Bay Boulevard	Two-Lane Collector	D	1,020	A
20	El Morro Avenue	w/o 11th Street	Two-Lane Collector	D	3,620	A
21	El Morro Avenue	w/o 7th Street	Two-Lane Collector	D	3,650	A
22	Santa Ysabel Avenue	e/o South Bay Boulevard	Two-Lane Collector	D	520	A
23	Santa Ysabel Avenue	e/o 11th Street	Two-Lane Collector	D	3,170	A
24	Santa Ysabel Avenue	w/o 11th Street	Two-Lane Collector	D	2,770	A
25	Santa Ysabel Avenue	e/o 7th Street	Two-Lane Collector	D	2,950	A
26	Santa Ysabel Avenue	w/o 7th Street	Two-Lane Collector	D	1,410	A
27	Pecho Road	n/o Los Osos Valley Road	Two-Lane Collector	D	1,553	A
28	Doris Avenue	s/o Los Osos Valley Road	Two-Lane Collector	D	1,800	A
29	Doris Avenue	n/o Los Osos Valley Road	Two-Lane Collector	D	370	A
30	Ravenna Avenue	s/o Los Osos Valley Road	Two-Lane Collector	D	610	A
31	7th Street	n/o Ramona Avenue	Two-Lane Collector	D	3,450	A
32	Bayview Heights Drive	s/o Los Osos Valley Road	Two-Lane Collector	D	5,510	A
33	9th Street	n/o Los Osos Valley Road	Two-Lane Collector	D	6,440	B
34	11th Street	s/o Santa Ysabel Avenue	Two-Lane Collector	D	430	A

As presented in Table 8, all roadways are projected to operate at acceptable LOS.

Cumulative No Project Intersection Levels of Service

Cumulative No Project AM and PM peak hour intersection traffic operations were quantified using the Cumulative No Project lane geometrics and controls (Figure 5) and the Cumulative No Project peak hour traffic volumes (Figure 7), and analyzed using Synchro 9 (Trafficware) software. Conditions and deficiencies were identified by the Level of Service (LOS) threshold outlined in the San Luis Obispo County General Plan Circulation Element. Table 9 contains a summary of the Cumulative No Project intersection analysis and LOS conditions.

TABLE 9:
CUMULATIVE NO PROJECT CONDITIONS: INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	El Morro Avenue at 11th Street	AWSC	D	11.5	B	10.0	A
2	Los Osos Valley Road at Doris Avenue	Signal	D	11.5	B	11.5	B
3	Los Osos Valley Road at Pine Avenue	Signal	D	7.4	A	7.4	A
4	Los Osos Valley Road at Ravenna Avenue	Signal	D	13.5	B	15.4	B
5	Los Osos Valley Road at Palisades Avenue	Signal	D	10.5	B	11.2	B
6	Los Osos Valley Road at 9th Street/Bayview Heights Drive	Signal	D	13.7	B	10.0	A
7	Los Osos Valley Road at 10th Street	Signal	D	3.4	A	4.6	A
8	**Los Osos Valley Road at Sunset Drive**	**TWSC**	**D**	**108.2**	**F**	**OVR**	**F**
9	Los Osos Valley Road at Fairchild Way	Signal	D	16.8	B	13.6	B
10	Los Osos Valley Road at S. Bay Boulevard	Signal	D	30.4	C	43.5	D
11	Ramona Avenue at 4th Street/ Ravenna Ave	TWSC	D	21.4	C	29.6	D
12	Ramona Avenue at 7th Street	AWSC	D	10.7	B	12.8	B
13	Santa Ysabel Avenue at 7th Street	TWSC	D	10.1	B	10.6	B
14	Santa Ysabel Avenue at 11th Street	TWSC	D	11.9	B	10.8	B
15	S. Bay Boulevard at Nipomo Avenue	Signal	D	21.3	C	23.7	C
16	**S. Bay Boulevard at Pismo Avenue**	**TWSC**	**D**	**71.8**	**F**	**269.5**	**F**
17	S. Bay Boulevard at El Morro Avenue	Signal	D	34.4	C	22.5	C
18	S. Bay Boulevard at Santa Ysabel Avenue	Signal	D	8.1	A	8.6	A
19	S. Bay Boulevard at Ramona Avenue	Signal	D	16.0	B	17.4	B

lotes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; Signal = Signalized Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for AWSC and Signal

As presented in Table 9, the intersections of Los Osos Valley Road/Sunset Drive and South Bay Boulevard/Pismo Avenue are projected to operate at unacceptable conditions under the Cumulative No Project scenario.

In particular, the two-way stop-controlled intersection of Los Osos Valley Road at Sunset Drive is experiences a sharp drop in performance during the PM peak hour. The left turns from minor streets operate at unacceptable conditions with severe delays.

Cumulative Plus Project Conditions

Cumulative Plus Project conditions refer to the buildout of the Proposed Los Osos Community Plan, which is approximately twenty years out from the existing conditions (Year 2035). The Proposed Community Plan scenario of the Los Osos TDM was utilized to develop traffic forecasts for the roadway segments and intersections at the study locations. Buildout of the Proposed Community Plan scenario is based on the proposed buildout land uses and the roadway network. Interregional growth is a third model component that affects buildout forecasts. Interregional traffic patterns originating or terminating outside the Community model area were derived from the SLOCOG TDM.

Proposed Circulation System

The Proposed Community Plan circulation improvements are based on the Proposed Circulation Plan and the Los Osos Community Plan Public Review Draft (January 30, 2015). It is assumed that roadways within the Community will be built out to standard. The roadway network improvements for the Cumulative Plus Project analysis scenario are listed below.

Roadway Improvements

- Widen S. Bay Boulevard to four lanes between Los Osos Valley Road and the northern Urban Reserve Line
- Widen Los Osos Valley Road to provide a two-way left turn lane between Palisades Avenue and Doris Avenue
- Install median with left turn pockets on Los Osos Valley Road between Bush Drive and South Bay Boulevard
- Ramona Avenue extension to South Bay Boulevard
- Ravenna Avenue extension to Ramona Avenue
- Skyline Drive extension west to Pecho Road and east to Nipomo Avenue/7th Street
- Palisades Avenue extension north to the Skyline Drive extension
- Complete Doris Avenue between Rosina Avenue and South Court
- Extend Fairchild Way to Nipomo Avenue

Intersection Improvements

- Los Osos Valley Road / Pine Avenue - signalization
- Los Osos Valley Road / Ravenna Avenue - signalization
- Los Osos Valley Road / Sunset Avenue – left turn pockets
- Los Osos Valley Road / Fairchild Way – signalization
- Los Osos Valley Road / South Bay Boulevard – southbound dual left turns
- Ravenna Avenue/Ramona Avenue/4rd Street – realignment
- South Bay Boulevard / Ramona Avenue – signalization
- South Bay Boulevard / Nipomo Avenue – signalization

Proposed Land Uses

The currently Proposed Community Plan model scenario was created in the Los Osos TDM to reflect the land use and roadway improvement changes in the Proposed Community Plan. Table 10 summarizes the dwelling unit and non-residential square footage of the Proposed Community Plan scenario compared to the existing land use. The land use quantities are used as inputs into the Proposed Community Plan model scenario within the Los Osos TDM, which is utilized to forecast travel demand based on the Proposed Community Plan.

TABLE 10:
PROPOSED LAND USES

Land Use		Existing Los Osos TDM	Proposed Plan	
			Buildout	Net Increase
Residential (DU)				
	Single-Family	1,061	6,487	1,061
	Multi-Family	800	1,695	800
	TOTAL	**1,861**	**8,182**	**1,861**
Non-Residential (SF)				
	Retail	439,200	668,100	228,900
	Commercial/ S	221,000	284,600	63,600
	Office	10,100	61,600	51,500
	Recreation	0	10,000	10,000
	PF/Recreation	0	10,000	10,000
	TOTAL	**670,300**	**1,034,300**	**364,000**

Figure 8 presents the Proposed Community Plan land use changes as identified in the Los Osos Community Plan Public Review Draft. Figure 9 presents the Proposed Community Plan lane geometrics and control at the study intersections, including major roadway and intersection improvements. Figure 10 presents the Proposed Community Plan Average Daily Traffic (ADT) on the study roadways. Figure 11 presents the Proposed Community Plan AM and PM peak hour volumes at the study intersections.

Cumulative Plus Project conditions analyze the study roadways and intersections with the buildout of the Proposed Community Plan. The Proposed Community Plan scenario of the Los Osos TDM was utilized to project traffic forecasts for the roadway segments and intersections at the study locations. The roadway and intersection improvements were implemented within the Los Osos TDM and the Synchro networks for analysis.

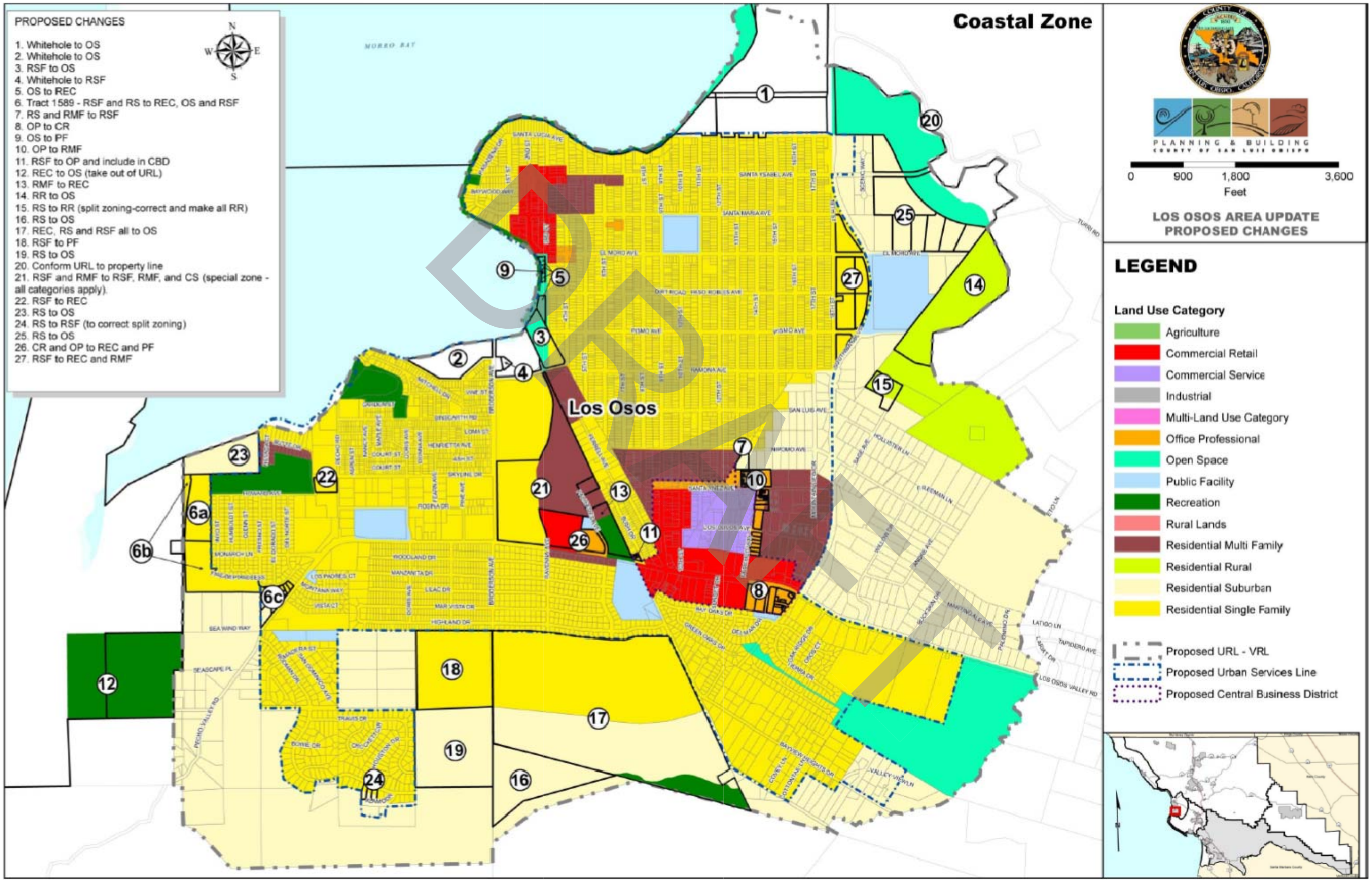

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Figure 8

Proposed Community Plan Land Use Changes

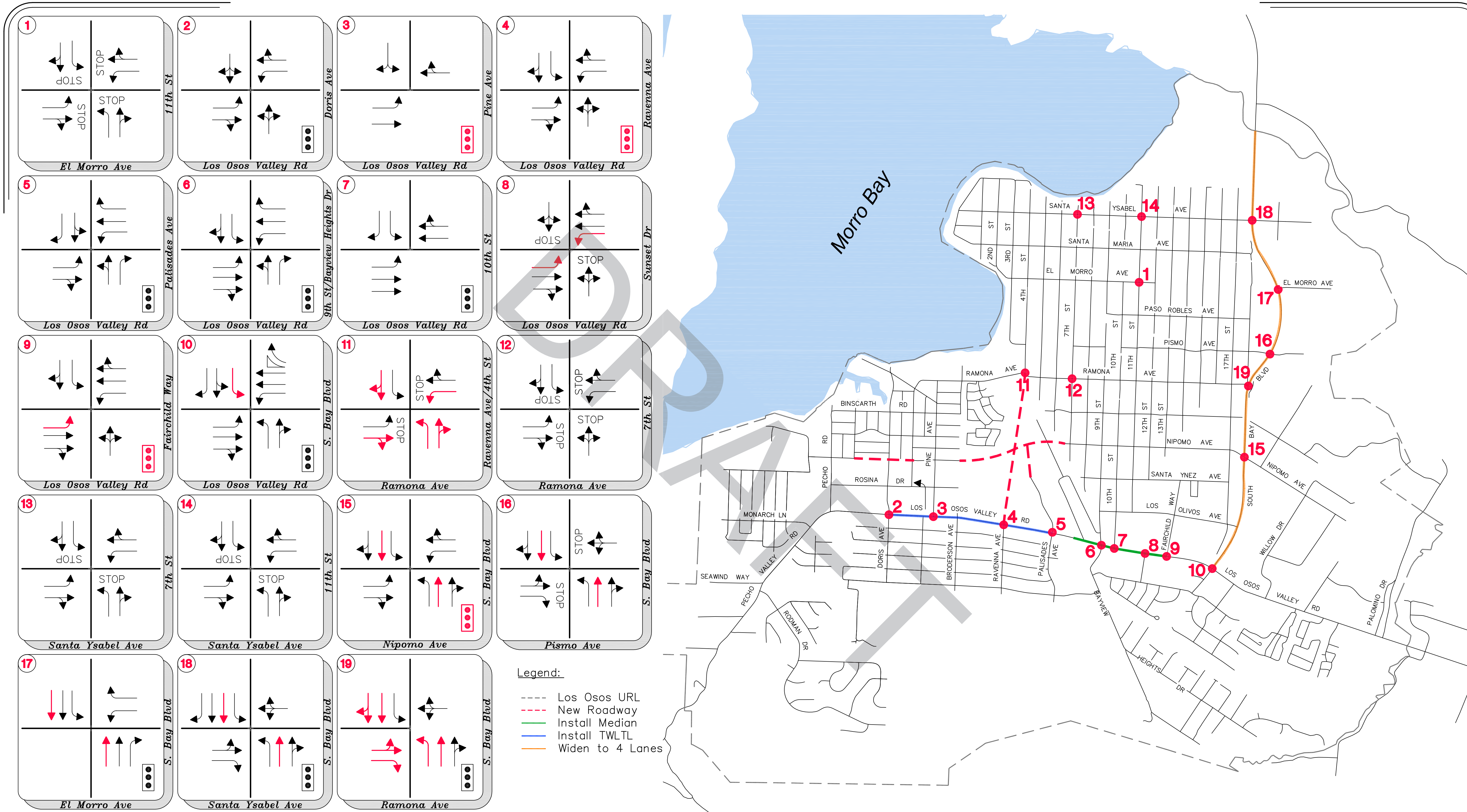

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Figure 9

Proposed Community Plan Lane Geometrics and Control

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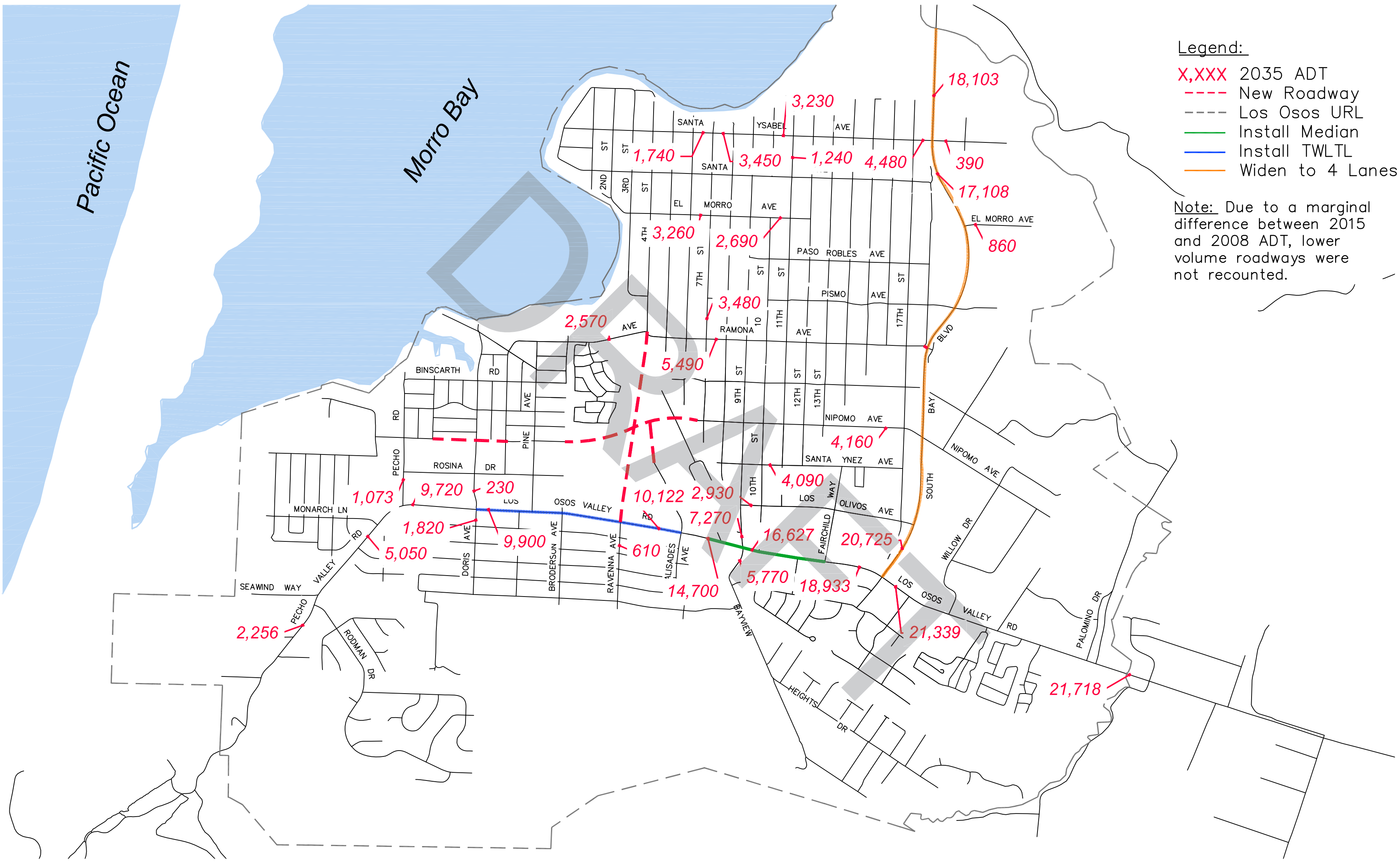

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Figure 10

Proposed Community Plan Buildout ADT

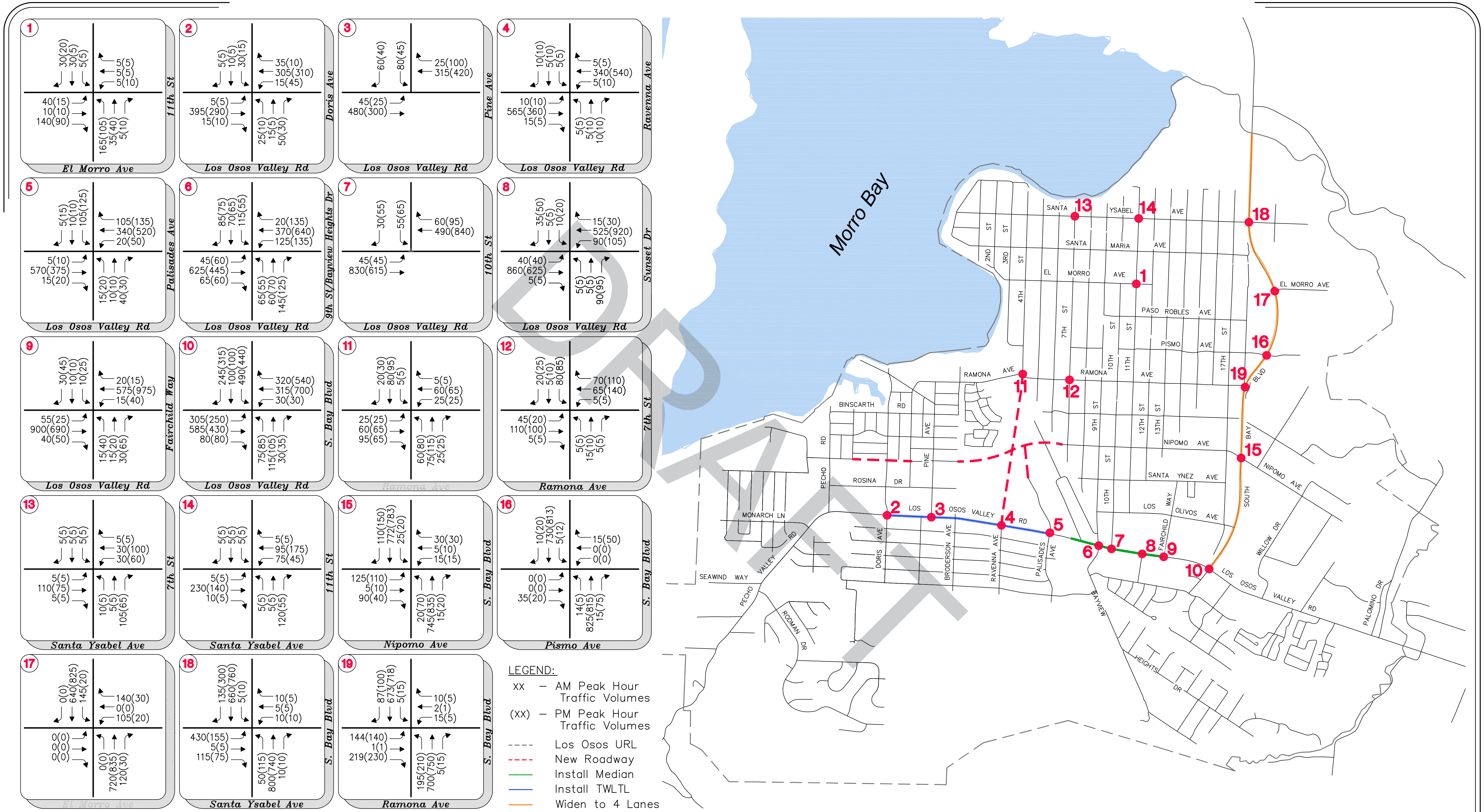

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Figure 11

Proposed Community Plan Buildout Peak Hour Traffic Volumes

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Cumulative Plus Project Traffic Conditions

Cumulative Plus Project Roadway Levels of Service

Cumulative Plus Project daily roadway operations were quantified using the Cumulative Plus Project ADT volumes (Figure 10) and the roadway capacity thresholds presented in Table 2. Table 11 presents a summary of the Cumulative Plus Project roadway analysis and LOS conditions.

TABLE 11:
CUMULATIVE PLUS PROJECT CONDITIONS: ROADWAY LEVELS OF SERVICE

#	Roadway	Location	Facility Type	Target LOS	Projected Average Daily Traffic	LOS
1	Los Osos Valley Road	e/o Los Osos Creek	Four-Lane Arterial	D	21,718	A
2	Los Osos Valley Road	e/o South Bay Boulevard	Four-Lane Arterial	D	21,339	A
3	Los Osos Valley Road	w/o South Bay Boulevard	Four-Lane Arterial	D	18,933	A
4	Los Osos Valley Road	e/o 9th Street	Four-Lane Arterial	D	16,627	A
5	Los Osos Valley Road	w/o Bush Drive	Three-Lane Arterial	D	14,700	A
6	Los Osos Valley Road	w/o Palisades Avenue	Three-Lane Arterial	D	10,122	A
7	Los Osos Valley Road	e/o Doris Avenue	Three-Lane Arterial	D	9,900	A
8	Los Osos Valley Road	e/o Pecho Drive	Two-Lane Arterial	D	9,720	A
9	South Bay Boulevard	n/o Los Osos Valley Road	Four-Lane Arterial	D	20,725	A
10	South Bay Boulevard	s/o Santa Ysabel Avenue	Four-Lane Arterial	D	17,108	A
11	South Bay Boulevard	n/o Santa Ysabel Avenue	Four-Lane Arterial	D	18,103	A
12	Pecho Valley Road	s/o Monarch Lane	Two-Lane Arterial	D	5,050	A
13	Pecho Valley Road	s/o Rodman Drive	Two-Lane Arterial	D	2,256	A
14	Los Olivos Avenue	w/o 10th Street	Two-Lane Collector	D	2,930	A
15	Santa Ynez Avenue	w/o 11th Street	Two-Lane Collector	D	4,090	A
16	Nipomo Avenue	w/o South Bay Boulevard	Two-Lane Collector	D	4,160	A
17	Ramona Avenue	w/o 9th Street	Two-Lane Collector	D	5,490	A
18	Ramona Avenue	w/o 4th Street	Two-Lane Collector	D	2,570	A
19	El Morro Avenue	e/o South Bay Boulevard	Two-Lane Collector	D	860	A
20	El Morro Avenue	w/o 11th Street	Two-Lane Collector	D	2,690	A
21	El Morro Avenue	w/o 7th Street	Two-Lane Collector	D	3,260	A
22	Santa Ysabel Avenue	e/o South Bay Boulevard	Two-Lane Collector	D	390	A
23	Santa Ysabel Avenue	e/o 11th Street	Two-Lane Collector	D	4,480	A
24	Santa Ysabel Avenue	w/o 11th Street	Two-Lane Collector	D	3,230	A
25	Santa Ysabel Avenue	e/o 7th Street	Two-Lane Collector	D	3,450	A
26	Santa Ysabel Avenue	w/o 7th Street	Two-Lane Collector	D	1,740	A
27	Pecho Road	n/o Los Osos Valley Road	Two-Lane Collector	D	1,073	A
28	Doris Avenue	s/o Los Osos Valley Road	Two-Lane Collector	D	1,820	A
29	Doris Avenue	n/o Los Osos Valley Road	Two-Lane Collector	D	230	A
30	Ravenna Avenue	s/o Los Osos Valley Road	Two-Lane Collector	D	610	A
31	7th Street	n/o Ramona Avenue	Two-Lane Collector	D	3,480	A
32	Bayview Heights Drive	s/o Los Osos Valley Road	Two-Lane Collector	D	5,770	A
33	9th Street	n/o Los Osos Valley Road	Two-Lane Collector	D	7,270	B
34	11th Street	s/o Santa Ysabel Avenue	Two-Lane Collector	D	1,240	A

As presented in Table 11, all roadways are projected to operate at acceptable LOS.

Cumulative Plus Project Intersection Levels of Service

Cumulative Plus Project AM and PM peak hour intersection traffic operations were quantified using the Cumulative Plus Project lane geometrics and controls (Figure 9) and the Cumulative Plus Project peak hour traffic volumes (Figure 11), and analyzed using Synchro 9 (Trafficware) software. Conditions and deficiencies were identified by the Level of Service (LOS) threshold outlined in the San Luis Obispo County General Plan Circulation Element. Table 12 contains a summary of the Cumulative Plus Project intersection analysis and LOS conditions.

TABLE 12:
CUMULATIVE PLUS PROJECT CONDITIONS: INTERSECTION LEVELS OF SERVICE

#	Intersection	Control Type[1,2]	Target LOS	AM Peak Hour		PM Peak Hour	
				Delay	LOS	Delay	LOS
1	El Morro Avenue at 11th Street	AWSC	D	10.7	B	9.0	A
2	Los Osos Valley Road at Doris Avenue	Signal	D	11.4	B	11.2	B
3	Los Osos Valley Road at Pine Avenue	Signal	D	7.8	A	8.0	A
4	Los Osos Valley Road at Ravenna Avenue	Signal	D	9.4	A	9.5	A
5	Los Osos Valley Road at Palisades Avenue	Signal	D	11.1	B	12.0	B
6	Los Osos Valley Road at 9th Street/Bayview Heights Drive	Signal	D	14.0	B	14.0	B
7	Los Osos Valley Road at 10th Street	Signal	D	2.4	A	3.9	A
8	**Los Osos Valley Road at Sunset Drive**	**TWSC**	**D**	**45.7**	**E**	**247.9**	**F**
9	Los Osos Valley Road at Fairchild Way	Signal	D	17.2	B	14.9	B
10	Los Osos Valley Road at S. Bay Boulevard	Signal	D	28.6	C	46.3	D
11	Ramona Avenue at 4th Street/ Ravenna Ave	TWSC	D	12.7	B	14.4	B
12	Ramona Avenue at 7th Street	AWSC	D	8.9	A	9.9	A
13	Santa Ysabel Avenue at 7th Street	TWSC	D	10.5	B	11.3	B
14	Santa Ysabel Avenue at 11th Street	TWSC	D	13.9	B	12.2	B
15	S. Bay Boulevard at Nipomo Avenue	Signal	D	14.7	B	15.5	B
16	**S. Bay Boulevard at Pismo Avenue**	**TWSC**	**D**	**57.2**	**F**	**130.8**	**F**
17	S. Bay Boulevard at El Morro Avenue	Signal	D	12.0	B	4.7	A
18	S. Bay Boulevard at Santa Ysabel Avenue	Signal	D	9.0	A	9.4	A
19	S. Bay Boulevard at Ramona Avenue	Signal	D	19.5	B	20.6	C

Notes:

1. AWSC = All Way Stop Control; TWSC = Two Way Stop Control; Signal = Signalized Stop Control

2. LOS = Delay based on worst minor street approach for TWSC intersections, average of all approaches for

3. LOS based on HCM 2000 TWSC Analysis

As presented in Table 12, the intersections of Los Osos Valley Road/Sunset Drive and South Bay Boulevard/Pismo Avenue are projected to operate at unacceptable conditions under the Cumulative Plus Project conditions.

Impacts and Mitigation Measures

This section presents impacts and mitigations at the study intersections. Mitigation measures have been developed to achieve acceptable LOS. However, in Cumulative No Project conditions, the majority of the required improvements to achieve acceptable LOS will be required with or without the project. In the case where a mitigation is not feasible due to right of way and/or cost constraints, and much of the adjacent land is fully developed, significant and unavoidable impacts are identified.

Significance Criteria

Consistent with Appendix G of the CEQA Guidelines, the proposed project will have a significant impact on transportation and circulation if it would result in:

- Conflict with an applicable plan, congestion management program, ordinance or policy establishing measures of effectiveness for the performance of the circulation system at the local or regional level, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
    - *On local roadways*: A significant impact would occur if level of service at buildout would fall below LOS D, measured on an average daily traffic (ADT) basis or peak hour intersection operation basis. The adopted County General Plan Circulation Element also identifies LOS D as the threshold for acceptable operations within the Los Osos Urban Reserve Limit line;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

New roadways and transportation improvements will be constructed to design standards, in compliance with adopted transportation policies, plans, and programs. The Proposed Community Plan also provides emergency access options as local roadways are constructed to standard throughout the community.

A significant impact would occur if level of service at buildout would fall below LOS D, measured on an average daily traffic (ADT) basis or peak hour intersection operation basis. The adopted County General Plan Circulation Element also identifies LOS D as the threshold for acceptable operations within the Los Osos Urban Reserve Limit line. Significant project impacts are identified where the addition of the project traffic creates unacceptable LOS.

Deficiencies & Mitigations

The intersections of Los Osos Valley Road/Sunset Drive and South Bay Boulevard/Pismo Avenue are projected to operate at unacceptable conditions under the Cumulative No Project and Cumulative Plus Project conditions. These two intersections are two-way stop-controlled and located to nearby traffic signals. Sunset Drive provides access to the Los Osos Shopping Center, which is accessed via Los Osos Valley Road and 10th Street, and a neighborhood to the south. With the installation of a center median, left turn bays and traffic signals along the Los Osos Valley Road downtown corridor, there is no longer the two-stage entrance process that a two-way left-turn lane provides for vehicles going onto Los Osos Valley Road from the side streets. This results in longer and unacceptable delays for the Sunset Drive and shopping center approaches. Pismo Avenue is located north of the future signalized intersection of South Bay Boulevard at Ramona Avenue, and the side street approaches are projected to experience unacceptable delays due to left turning or through vehicles waiting for a gap to turn or cross. The following improvements are proposed to provide acceptable operations at these intersections.

Intersection 8 - Los Osos Valley Road at Sunset Drive

This intersection is projected to operate at LOS F during AM and PM peak hours under Cumulative No Project conditions, and at LOS E and LOS F during AM and PM peak hours under Cumulative Plus Project conditions, respectively. The following proposed improvement will yield acceptable operations:

- Restrict left turns out from the side streets

Intersection 16 – South Bay Boulevard at Pismo Avenue

This intersection is projected to operate at LOS F during AM and PM peak hours under Cumulative No Project conditions and Cumulative Plus Project conditions. The following proposed improvement will yield acceptable operations:

- Restrict left turns out from the side streets

Appendix F

Proposed Los Osos Community Plan Archaeological Standards

Proposed Archaeological Standards for the Los Osos Community Plan

Archeological Sensitive Area

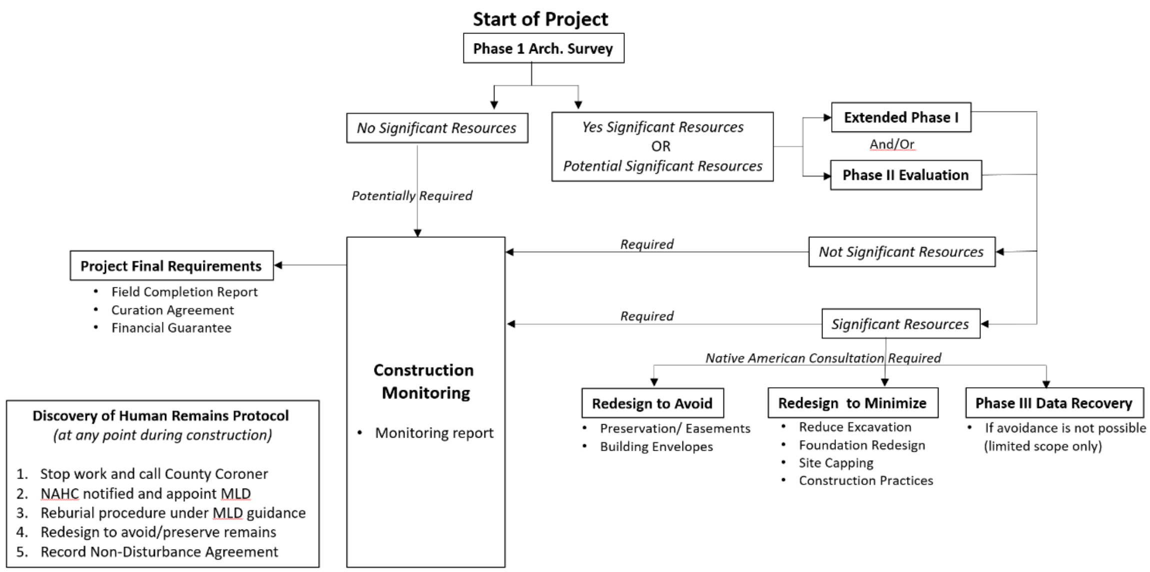
The Archaeological Sensitive Area (ASA) map in Los Osos has been revised to identify areas updated with highly sensitive cultural resources. The purpose of this updated map (Figure 4.5-4) and the application of the following procedures and requirements set forth in this section below is to streamline permit requirements for future developments and ensure the maintenance and protection of the County's archeological and tribal cultural resources in Los Osos.

A. Applicability of Standards

The standards set forth in this section apply to all uses requiring a land use permit or construction permit located within the mapped ASA areas inside the urban reserve line as shown in Figure 4.5-4.

B. Permit & Processing Requirements

The land use permit requirements established by Chapters 23.03 (Permit Requirements), and 23.08 (Special Uses) are modified to include additional requirements for the ASA combining designation as follows:



1. **Initial Submittal:** The type of land use permit application to be submitted is to be as required by Chapter 23.03 (Permit Requirements), Chapter 23.08 (Special Uses), or by Planning Area standards.
   a. Development proposed within the boundaries of a known archeological site shall require a Minor Use Permit/ Coastal Development Permit (MUP/CDP).
   b. If no land use permit is required, the following standards in this section are still applicable for a construction permit application.

2. **Application Content:** Land use and construction permit applications for projects within the ASA shall include the following Archeological Resource Assessment report(s) as applicable, and evidence of measures proposed to protect the sensitive resources as outlined in Subsection C in this section.

   a. **Archeological Resource Report(s).** Written reports shall be prepared consistent with the report format requirements contained in the State Office of Historic Preservation Archaeological Resource Management Reports (ARMR): Recommended Contents and Format guidelines. A single report may incorporate more than one Phase where appropriate to minimize redundancy and expense. All reports shall be filed with appropriate State information center.

      The report(s) shall be prepared, at the applicant's expense, by a qualified archaeologist, either from the County's list of archaeological consultants or by a member of the Register of Professional Archaeologists, meeting the Secretary of the Interior's Professional Qualification Standards, who is familiar with California Central Coast archaeology. The applicant shall also be responsible for paying for the costs of data recovery and curation of recovered materials, if applicable.

      If the assessment determines that a proposed development may have significant effects on existing, known, or suspected archeological resources, a mitigation plan shall be prepared by a qualified archeologist. The purpose of the plan is to protect the resource and highest priority shall be given to avoiding disturbance of sensitive resources. The mitigation plan shall be submitted to and approved by the Environmental Coordinator and considered in the evaluation of the development.

      Submittal of the listed report(s) below, to the Environmental Coordinator, is required prior to a land use permit application being deemed completed. These report(s) are also required at the time of construction permit application in order to determine the applicability and/or requirement for a MUP/CDP before continued processing of the construction permit.

      i. ***Phase I Archeological Resource Assessment (Required).*** All project applications shall include at minimum, a Phase 1 Archeological Resource Assessment which is a preliminary site survey and record search with Central Coast information Center (CCIC). The survey shall be conducted by a County-qualified archaeologist knowledgeable in local Native American culture. The County will provide pertinent project information to the Native American tribal groups.

         (a) *If the site survey findings are negative,* no further review is necessary. However, monitoring maybe required at the discretion of the County to ensure no impacts to potential resources during construction.

(b) *If the site survey reveals information indicating the presence or proximity to archeological resources or it is determined by the County there is a likelihood for the site to contain archeological resources,* an Extended Phase I or Phase II Evaluation shall be required unless either of the following apply:

(i) There is substantial evidence (such as existing evaluations that adequately characterize the resource), absent the Phase II, that the project will have a significant impact on archaeological resources and those impacts cannot be avoided pursuant to Section C of this section, in which case a Phase III Data Recovery Plan may be prepared without a Phase II Evaluation; or

(ii) The Phase I survey provided reasonable determination of the resource location(s) and all development is located to avoid impacts to those identified resources, in which case no further archaeological evaluation is necessary. Monitoring may still be required at the discretion of the County to ensure no impacts to potential resources during construction.

ii. ***Phase II Evaluation of Archaeological Resources.*** A Phase II Evaluation shall be prepared with the goal of determining site extent and spatial variability (both vertical and horizontal), evaluating the site's significance pursuant to California Code of Regulations, Title 14, State CEQA Guidelines, 15064.5, and evaluating resource protection measures pursuant to Subsection C of this section, as applicable. A Phase II Evaluation may include test excavations when adequate data from previous reports are not available to assess a site's significance; however, prior to recovering any archaeological materials for testing and/or carbon dating, the archaeologist shall consider the appropriate disposition of materials in consultation with the Planning Director and the property owner.

(a) *If no significant archeological resources found*, no further reports are necessary unless the Planning Director determines that there is substantial evidence in the record that significant resources may be affected by the project. Conditions recommended by the archaeologist and the Native American tribal groups through the consultation process shall be applied to the project as appropriate.

(b) *If significant archeological resources are found,* the Phase II Evaluation plan shall include consideration of the avoidance measures required in Subsection C.1. If significant resources cannot be avoided, a Phase III Data Recovery Plan will be required.

(c) *The Planning Director reserves the right to decide,* based on substantial evidence, that non-significant archaeological resources can be significant tribal cultural resources pursuant to PRC Section 21074. In making such a determination, the Planning Director shall consider input from, and the importance of the resource to, the Native American tribal groups.

iii. ***Phase III Data Recovery Plan.*** A Phase III Data Recovery Plan shall be prepared to evaluate a project's unavoidable impacts on significant archaeological resources and shall set forth the reasons, based on substantial evidence, why avoidance and impact minimization measures required in Subsection C are not feasible. Data recovery excavation shall not incur additional impacts to the archeological resources and if applicable, previous data collected for Phase II may be credited towards the overall sampling required. Impacts to an archeological site and significant resources shall not exceed 10% of the cultural site area on a project site in order to qualify for a typical proportional sampling mitigation in Phase III.

(a) *Report Guidelines.* The plan shall incorporate results of Phase II study with detailed information considering proportional sample size related to the extent of impact, existing body of documentation and significance of the resource. The Phase III Plan shall include treatment of resources with cultural appropriate dignity taking into account the tribal cultural values and meanings, including but not limited to protection of the cultural character, integrity, traditional use and confidentiality of the resource.

(b) *Content:* A Data Recovery Plan shall include at minimum: dates of fieldwork and personnel qualifications, level and location(s) of excavation needed, laboratory processing and analysis protocol, detailed notes, photographs and drawings of all excavation and soil samples, curation and cost estimates.

(c) *Timing:* The Data Recovery Plan shall be submitted and approved by Environmental Coordinator before fieldwork can begin. All excavation and recovery activities shall require Native American monitoring. Curation or a financial guarantee for data analysis filing and curation must be demonstrated to the County before land use permit approval, or prior to final building inspection, to allow the project to move forward.

b. Monitoring Plan. A monitoring plan shall be submitted to the County prior to issuance of construction permit, prepared by a County-approved archaeologist, for review and approval by the Environmental Coordinator. The intent of this Plan is to outline monitoring guidelines and protocol for all earth-disturbing activities in areas identified as potentially sensitive for cultural resources. The monitoring plan shall include at a minimum:

i. List of personnel involved in the monitoring activities;
ii. Inclusion of involvement of the Native American community, as appropriate;
iii. Description of how the monitoring shall occur;
iv. Description of frequency of monitoring (e.g., full-time, part time, spot checking);
v. Description of what resources are expected to be encountered;
vi. Description of circumstances that would result in the halting of work at the project site (e.g., What is considered "significant" archaeological resources?);
vii. Description of procedures for halting work on the site and notification procedures; and
viii. Description of monitoring reporting procedures.
ix. Description of provisions defining education of the construction crew and establishing protocol for treating unanticipated findings. This training will include a description of the types of resources that may be found in the project area, the protocols to be used in the event of an unanticipated discovery, the importance of cultural resources to the Native American community, and the laws protecting significant archaeological and historical sites.

3. **Environmental Determination:** Pursuant to CEQA Section 15183, projects complying with all standards set forth in this section will be consistent with the community plan certified EIR. Failure to meet all the standards will require additional environmental review necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site.

4. **Required Findings:** Any land use permit application within the ASA shall be approved only where the Review Authority can make one of the following required findings:

   a. *The site design and development incorporated adequate measures to fully avoid impacting archeological resources and ensure that archeological resources will be acceptably and adequately protected,* or

   b. The site design and development cannot be feasibly changed to avoid intrusion into or disturbance of archaeological resources. The project design and construction incorporated adequate site measures and methodology to minimize and mitigate impacts to identified archeological resources.

C. Development Standards

All new development shall be considered compliant with the community plan when they incorporate all site planning and design features necessary to demonstrate (in order of priority); *avoidance of impacts to sensitive resources, minimization of impacts through careful siting, considerate design and construction practices if avoidance is not possible*, and as a last resort, *excavation and recovery of those resources as mitigation for unavoidable impacts*.

All development within ASA shall include the following minimum standards:

1. Resource Protection: Impacts to significant archaeological resources and tribal cultural resources shall be avoided to the extent feasible. In all cases where significant archaeological resources or tribal cultural resources are identified, the following avoidance measures shall be considered:

a. **Avoidance/ Preservation in Place.** These protection measures include but not limited to, revising the project design or location to avoid the resources entirely. Avoidance means relocation of all development, including grading, utilities, foundations, drainage facilities, and major landscaping. Pools, basements, or any project feature requiring extensive excavation that would impact significant cultural resources is not allowed. No land division of a parcel containing archaeological resources shall be permitted unless all proposed building sites are located entirely outside of the archaeological site.

b. **Protection of Resources.** If full avoidance is not feasible, sensitive areas shall be placed under culturally appropriate protection and management criteria such as permanent conservation easements or other interests in real property. Public access and site disturbance work including habitat or site restoration and revegetation work shall be kept to a minimum. Other feasible methods of avoidance and protection of the resource shall be considered and approved by the Environmental Coordinator.

c. **Minimize Impacts to Significant Resources.** If full avoidance, preservation or protection in place is not feasible, project redesign may be required to reduce impacts to less than significant level. Project redesigns shall include and not limited to, any of the following:

i. ***Reduce Excavation***. Moving foundation elements, designing spanning foundations, reducing proposed excavation volumes, and altering proposed utility lines and connection alignments.

ii. ***Foundation Redesign.*** Foundation design may need to be altered to minimize site disturbance. "Side-by-side" comparisons of disturbance and calculations of volume of cultural materials affected will be submitted to show the revised foundation design will result in the least disturbance. The approved redesign(s) shall be verified by the County prior to construction work.

iii. ***Site Capping.*** Where project must encroach within the identified cultural resource(s), incorporation of fill shall be considered. Only sufficient fill shall be placed over the site so as to allow native soils to remain undisturbed (e.g. 18 inches for residential footings, 6-8 inches for driveway construction). Clean, sterile fill, consisting of a layer of other conspicuous material (e.g. fill of a noticeable different color and texture than native soil) shall be placed over the native soil prior to placement of any other clean fill material. Native soils shall not be disturbed or compacted (or compacted to the most limited extent necessary) within the cultural resource areas. The use of fill shall be the minimum necessary to protect the resource. Additional height (up to 24”) shall be allowed as follows:

Fill	**Additional Height Allowed**
12”	6”
18”	12”
24”	18”

d. **Phase III Data Recovery Plan.** Where development is likely to adversely impact any important or unique archeological resources and it is not feasible to avoid or preserve resources, total and partial recovery through excavation may be considered the only feasible mitigation measure. A Data Recovery Plan shall be prepared per the guidelines set in Section 2b(iii) and submitted to the Environmental Coordinator for review and approval before work can continue.

2. Construction Practices. Projects with potential impacts to identified archeological resources shall include the following into the construction documentation submittal.

a. **Project Limit Area.** Plans submitted shall clearly show a ‘*project limit area’* established in a manner that avoids impacts to resources to the maximum extent possible, located on the least sensitive portion of the site, and safeguards the resources on site. The project limit area shall include all areas on and off site where ground disturbance will occur including access road grading, utility trenching or similar works related to the project.

b. **Construction Methodology.** Specific construction methods may need to be employed that provide for maximum protection of resources. This may include and not limited to:

i. Grubbing shall be limited to the first six inches of top soil and compaction can be done with a heavy rubber tire machinery. Compaction should be done with care as not to rip into the soil with aggressive wheel turns.

ii. Trenching for utilities shall be limited so undergrounded services are grouped as closely as possible, to minimize native ground excavations. Trenching work must be monitored.

iii. Smaller excavating equipment is preferred to allow for controlled monitored excavation. Excavations in identified sensitive areas shall be done in shallow increments as recommended by the archeologist. If significant cultural resources, such as human remains are present at a site, hand excavation may be warranted.

iv. Machineries should have rubberized, non-tracked wheels that will minimize disturbance of the native soils or a protective barrier such as metal sheets shall be used as a protective layer between the construction machinery and the native ground.

v. Clean, sterile fill of a noticeable distinct color than native soil can be placed over project. Depth of fill should be sufficient to prevent foundation elements from extending into native soil. Fill shall be placed from the outwardly portion of the site so machine tires will roll on placed fill instead of native ground.

vi. Alternative foundation design such as floating mat slab that will minimize excavations and compaction. Capping of significant resources is encouraged with placing of concrete slabs or flatwork.

vii. Graded native soils shall be monitored, screened as applicable and balanced on site, as much as possible. Exporting of dirt is discouraged and off-site location for hauled materials shall be disclosed in a County-approved monitoring plan.

If applicable, stockpiled materials waiting to be screened shall be covered in a secure manner.

viii. If inadvertent discovery is found on site, a 25-foot buffer around the find shall be installed. Work in other areas may proceed after getting approval from the County.

c. **Construction Monitoring.** During all ground disturbing construction activities, the applicant shall retain a qualified archaeologist (approved by the Environmental Coordinator) and Native American Representative to monitor all earth disturbing activities including offsite grading /trenching work for access and utilities per the approved monitoring plan. If any significant archaeological resources or human remains are found during monitoring, work shall stop within the immediate vicinity of the resource (precise area to be determined by the archaeologist in the field) until such time as the resource can be evaluated by an archaeologist and any other appropriate individuals. The applicant shall implement the mitigation as required by the Environmental Coordinator.

The archaeologist shall verify implementation of the Monitoring Plan during any ground disturbing activities. A final report on compliance shall be submitted by the archaeologist prior to final inspection.

d. **Changes to Design**. If significant archaeological resources are identified on site, the applicant's construction drawings shall demonstrate incorporation of all revised design and/or mitigation measures approved by the Environmental Coordinator to avoid significant impacts or reduce to a less than significant level. If construction is underway, all work shall stop until a redesign is reviewed and approved via After-Issuance Change' permit from the County.

3. **Project Final Requirements.** After the completion of construction monitoring and any Phase III data recovery excavations, the applicant shall submit the following to the Environmental Coordinator prior to final inspection or occupancy (whichever comes first):

    a. **Field Completion Report.** Archeologist-prepared report summarizing all monitoring and/or mitigation measures conducted, field findings, and construction compliance. The report shall be provided in ARMR format describing field tasks by date, location, and results. The report shall include field methods, results and photographs, artifact analysis and interpretation, updated site maps and/or appropriate State site record forms. The final report shall be submitted electronically to the County, the property owner, and the State site record/information center.
    b. **Financial Guarantee**. If the analysis included in the Phase III Data Recovery Plan or inadvertent findings is not complete at this milestone, the applicant shall provide to the County proof of obligation to complete the required analysis and file final reports.

D. Consultation with Native American Tribal Groups

Consistent with Section 15183, the incorporation of standards set forth in this section are intended to streamline the review of projects within the ASA combining designation in Los Osos. Pursuant to PRC Section 21080.3.1, AB52 consultation with Native American tribal groups are considered fulfilled when a project complies with all standards set forth herein. In addition to the archeological report(s) and development standards set in this section, the Director of Planning can provide notifications to the California Native American tribe(s) that may be traditionally and culturally affiliated with the project area(s) to initiate additional consultation when any of the following below occurs:

1. The project's Phase I Archeological Assessment reports a positive finding and additional Phase II and/or Phase III is warranted
2. There is inadvertent finding during project development i.e. human remains, significant cultural resource or similar
3. The project has to incorporate *additional* mitigation measures to avoid and/or minimize impacts to identified significant archeological resources
4. The Planning Director decides, based on substantial evidence, that a non-significant archeological resource can be significant tribal cultural resources pursuant to PRC Section 21074

E. Discovery of Human Remains

If human remains are encountered during construction, the procedures outlined by the Native American Heritage Commission (NAHC), in accordance with Section 7050.5 of the California

Health and Safety Code (HSC) and Section 5097.98 of the Public Resources Code (PRC), would be followed, as well as the provisions of the CZLUO 23.05.150. A general summary of these provisions and best practices are as follows:

If it is determined or suspected that a discovery includes human remains:

1. Work in the immediate vicinity of the find would cease.
2. The San Luis Obispo County Coroner shall be contacted immediately.
3. In addition, the County Environmental Coordinator shall be notified as soon as possible. The County will also issue a "Stop Work" for any construction activities that have the potential to disturb the resource or for all activities on a site if additional resources are suspected to be present and to insure compliance with CZLUO 23.05.150.
4. As a courtesy, the archaeologist should also notify the NAHC.
5. The remains should be secured immediately with steel plating cover, or similar. No work is to proceed in the discovery area until consultation procedures are complete, procedures to avoid or recover the remains have been implemented, and the "Stop Work" has been lifted and the owner/developer has been notified that all County and State required provisions have been satisfied.
6. The Coroner has 2 working days to examine the remains after being notified in accordance with HSC Section 7050.5. If the coroner determines that the remains are Native American and are not subject to the to the coroner's authority, the coroner has 24 hours to notify the NAHC of the discovery.
7. The NAHC should immediately designate and notify the Native American Most Likely Descendent (MLD), who has 48 hours after being granted access to the location of the remains to inspect and make recommendations for proper treatment of the remains.
8. The archeologist and Native American MLD should meet with the owner /developer, other design professionals, as well as with County staff, to plan for and implement the recommended treatment, which may include design and construction modifications to avoid further impacts.
9. A Covenant of Non-Disturbance of Native American Heritage Site may be required by the County to prevent future disturbance of the remains identified.