DRAFT

Initial Study/

Mitigated Negative Declaration

for the

John Smith Road Landfill Expansion Project

CEQA Lead Agency
San Benito County
3220 Southside Road
Hollister, CA 95023

June 2012

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Acronym/Abbreviation	Definition
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ADT	Average daily traffic
AMBAG	Association of Monterey Bay Area Governments
APN	Assessor's Parcel Number
AQMP	Air Quality Management Plan
AR	Agricultural Rangelands
AST DEED	Aboveground Storage Tank Deed Restriction Listing
BLM	Bureau of Land Management
CA WDS	California Waste Discharge System
CAA	Clean Air Act
CalFire	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCAR	California Climate Action Registry
CCAT	California Climate Action Team
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CE	California State Endangered
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Resource, Compensation and Liability Act
CESA	California Endangered Species Act
CGS	California Geological Survey
CH_4	Methane
CHRIS	California Historical Resources Information System
cm/sec	Centimeters per second
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon monoxide
CO_2	Carbon dioxide
COG	Council of Governments
County	San Benito County
CRHR	California Register of Historical Resources
CRLF	California Red-legged frog
CSC	California Species of Concern
CT	California State Threatened
CTS	California tiger salamander
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
DOGGR	Division of Oil, Gas, and Geothermal Resources
DOT	U.S. Department of Transportation
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources, Inc.
EFZ	Earthquake Fault Zone
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FC	Federal Candidate
FE	Federal Endangered
FEMA	Federal Emergency Management Agency
FT	Federal Threatened
GHG	Greenhouse gas
HAZNET	Hazardous Waste Information System

HCP	Habitat Conservation Plan
HHW	Household hazardous waste
HSWA	Hazardous and Solid Waste Act
HWCL	Hazardous Waste Control Law
HWMF	Hazardous Waste Management Facility
JSRL	John Smith Road Landfill
JTD	Joint Technical Document
LDL	Larson Davis Laboratories
L_{dn}	Day/night average noise level
LDS	Land Disposal Site Listing
LEA	Local Enforcement Agency
L_{eq}	Average or equivalent noise level
LFG	Landfill Gas
L_{max}	Highest noise level measured
LOS	Level of service
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MLD	Most Likely Descendant
MND	Mitigated Negative Declaration
MPE	Most Probable Earthquake
MRP	Monitoring and Reporting Program
MRZ	Mineral Resource Zone
MSL	Mean sea level
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCAB	North Central Coast Air Basin
NCCP	Natural Community Conservation Plan
NCP	National Contingency Plan
NHPA	National Historic Preservation Act
NMOC	Non-Methane Organic Compounds
NOA	Naturally occurring asbestos
NOAA	National Oceanic and Atmospheric Administration
NO_x	Nitrous oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPPT	Northern Pacific pond turtle
NTIS	National Technical Information Service
NWIC	North West Information Center
OMR	Office of Mine Reclamation
OPR	Office of Planning and Research
PG&E	Pacific Gas & Electric
PM_{10}	Particulate matter less than 10 microns in diameter
$PM_{2.5}$	Particulate matter less than 2.5 microns in diameter
POTW	Publicly Owned Treatment Works
Ppb	Parts per billion
Ppm	Parts per million
PSR	Project Study Report
RCRA	Resource Conservation and Recovery Act of 1976
ROG	Reactive organic gases
RTP	Regional Transportation Plan
RW	Recycling and Waste
RWQCB	Regional Water Quality Control Board
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SBCEHD	San Benito County Environmental Health Division
SbE2	San Benito clay loam, 15 to 30 percent slopes
SbF2	San Benito clay loam, 30 to 50 percent slopes
SCS	Sustainable Communities Strategy

SJKF	San Joaquin kit fox
SMARA	Surface Mining and Reclamation Act of 1975
SMGB	State Mining and Geology Board
SR	State Route
SWF/LF	Solid Waste Facility/Landfill
SWPPP	Stormwater pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCBB	Tricolored blackbird
TCP	Transportation Concept Report
TPD	Tons per day
TMDL	Total maximum daily loads
UBC	Uniform Building Code
UCMP	University of California Museum of Paleontology
USFWS	U.S. Fish and Wildlife Service
VOC	Volatile organic compound
VMT	Vehicle Miles Travelled
VPD	Vehicles per day
WDR	Waste Discharge Requirement
WL	Watch List
$\mu g/m^3$	Micrograms per cubic meter

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1 Introduction

San Benito County is conducting this Initial Study analysis of the proposed John Smith Road Landfill Expansion Project ("Project") in accordance with California Environmental Quality Act (CEQA) Guidelines (14 California Administrative Code, Section 14000 et seq.). San Benito County (County), as CEQA "Lead Agency" has prepared this Initial Study to consider the potential for the project to result in one or more significant impacts to the environment pursuant to the California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code, Section 21000, et seq.).

The Project is located on a 95.47-acre parcel (Assessor's Parcel Number 025-190-050) north of John Smith Road and is adjacent to the existing landfill in unincorporated San Benito County southeast of the City of Hollister (**Figure 1**). The Project includes the potential acceptance of up to 500 tons per day of out-of-County waste. Based on the results of this Initial Study, the County has determined that the project could have a significant effect on the environment, but mitigation has been identified that would reduce impacts to less than significant. Therefore, with a commitment to implement the mitigation measures identified herein, the County may complete the project CEQA review with a Mitigated Negative Declaration (MND).

This document is divided into the following sections:

- **Section 2, Initial Study Findings**—Provides the County's CEQA findings pursuant to this Initial Study;

- **Section 3, Project Description**—Provides a detailed description of the proposed project;

- **Section 4, Initial Study Checklists and Supporting Documentation**—Provides CEQA Initial Study resource impact checklists and supporting documentation; and

- **Section 5, Supporting Information Sources**—Provides a listing of sources of information used for the preparation of this document.

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2 Initial Study Findings

1. **Project Title:**
   John Smith Road Landfill Expansion Project
2. **Lead agency name and address:**
   San Benito County, Integrated Waste Management Department
   3224 Southside Road
   Hollister, CA 95023
3. **Contact person and phone number:**
   Gary Armstrong, Planning Director, (831) 637-5313
4. **Project location:**
   The project area is approximately 2.5 miles southeast of the City of Hollister in unincorporated San Benito County. The project area is surrounded by agricultural uses and is adjacent to the existing landfill. (See **Figure 1** in **Section 3** of this Initial Study)
5. **Project sponsor's name and address:**
   N/A
6. **General Plan designation:**
   Agricultural Rangeland
7. **Zoning:**
   Agricultural Rangeland
8. **Description of project:**
   The proposed project involves the vertical expansion of approximately 65 feet (at its highest extent) over existing permitted Modules 1 through 6. The lateral expansion would include development of an additional 13.6 acres of lined area in five additional more expansion modules; the actual number of expansion modules may change during actual construction within the established project boundaries. In addition, the project includes a General Plan Amendment to change the land use designation from Agricultural Rangeland to Public/Quasi-Public, to be consistent with the existing landfill's land use designation. The Project includes the potential acceptance of up to 500 tons per day of out-of-County waste. A more detailed project description is included in **Section 3** of this Initial Study. **Figure 3** in **Section 3** shows the project area and proposed improvements.

9. Surrounding land uses and setting:

The John Smith Road Landfill (JSRL) is located approximately 2.5 miles southeast of the City of Hollister and approximately 2.1 miles north of the unincorporated community of Tres Pinos, California. Adjacent land use designations are comprised primarily of Agricultural Rangelands (AR), while the existing landfill is Public/Quasi-Public.

Additional information concerning surrounding land uses within and adjacent to the project area is included **Section 3** of this Initial Study.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

The project may require permits or approvals from the following:

U.S. Army Corps of Engineers - Nationwide Section 404 Discharge Permit

California Department of Fish and Game - Lake/Streambed Alteration Agreement

Regional Water Quality Control Board - General Permit for Discharges of Storm Water Associated with Construction Activity; National Pollutant Discharge Elimination System Permit; Waste Discharge Requirement; Water Quality Certification

California Department of Resources, Recycling and Recovery (CalRecycle)-Solid Waste Facility Permit

San Benito County Planning Commission – CEQA Compliance and Project Approval

Monterey Bay Unified Air Pollution Control District – Authority to Construct and Permit to Operate

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:
This Initial Study has determined that in the absence of mitigation the proposed project would have the potential to result in significant impacts associated with the factors checked below. Mitigation measures are identified in this Initial Study that would reduce all potentially significant impacts to less-than-significant levels.

	Aesthetics		Agricultural Resources		Air Quality
✓	Biological Resources	✓	Cultural Resources	✓	Geology/Soils
	Hazards & Hazardous Materials		Hydrology/Water Quality		Land Use/Planning
	Mineral Resources		Noise		Population/Housing
	Public Services		Recreation		Transportation/Traffic
	Utilities/Service Systems	✓	Mandatory Findings of Significance		

INITIAL STUDY DETERMINATION:
On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
✓	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Gary Armstrong 6-21-12

Signature Date

Name and Title: Gary Armstrong, Director, Planning Department

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3 Project Description

3.1 Proposed Project

The proposed project consists of a lot line adjustment which adds 33.81 acres to the existing John Smith Road Landfill (JSRL) Class III[1] permitted facility area, thereby increasing the waste footprint by approximately14 acres, a second lot line adjustment which reduces the existing Class I area by 3.05 acres; a General Plan Amendment to change the land use designation of the adjusted acreage from Agricultural Rangeland to Public/Quasi Public; both a lateral and vertical landfill expansion to increase landfill capacity, with a daily permitted tonnage increase from 500 tons per day to 1,000 tons per day to allow the potential for additional out of county waste, with the ability to accept unlimited recyclables for diversion not counted against the 1,000 tons per day cap; and re-grading of the Class I facility to allow for temporary soil stockpiling during the operational life of the Class III facility. Detailed information on the proposed project is provided below.

3.2 Existing Facility

3.2.1 Location

The JSRL disposal site is located at 2650 John Smith Road, Hollister, CA 95023, approximately 2.5 miles southeast of the City of Hollister in San Benito County, California (**Figure 1**). The facility currently operates on an approximately 65-acre site in a small valley on the north side of John Smith Road. The site includes a closed Class I area (approximately 8.2 acres) owned by the City of Hollister and an active Class III area (approximately 57 acres) owned by the County of San Benito; the approximately 57 acres of the currently active Class III area permitted for landfill operations has a 44-acre waste footprint. The Class I and Class III areas have a shared boundary; the Class I area, which contained two waste impoundments with a total combined area of less than 1 acre, is to the east and up-canyon from the Class III area (**Figure 2**).

As noted above, the proposed project will increase the currently 57-acre Class III permitted landfill area to approximately 90.16 acres by an adjustment of the southern lot line and the shared boundary with the Class I facility, thereby reducing the Class I area to 5.11 acres. These adjusted boundaries, which delineate the components of the entire 95.47-acre facility (including both Class III and Class I areas), are shown on **Figure 3**.

The Class III area Assessor's Parcel Number is 025-029-050 and the Class I area Assessor's Parcel Number is 025-019-51 within Sections 4, 5, 8, and 9, Township 13S, Range 6E, Mount Diablo Baseline and Meridian.

[1] Class I sites may accept hazardous and nonhazardous wastes; Class II sites may accept "designated" and nonhazardous wastes; and Class III sites may accept nonhazardous wastes.

3.2.2 Operations

To obtain and maintain a Solid Waste Facility Permit, a site operator must prepare and subsequently update the Joint Technical Document (JTD). The current JTD (SWT Engineering, March 2009) provides operational guidelines for the current operation of the permitted JSRL facility and includes elements required by statute and regulation, described in detail in **Section 3.4** of this Initial Study. The JTD has been updated to facilitate the landfill expansion project presented herein (see Section 3.7, below).

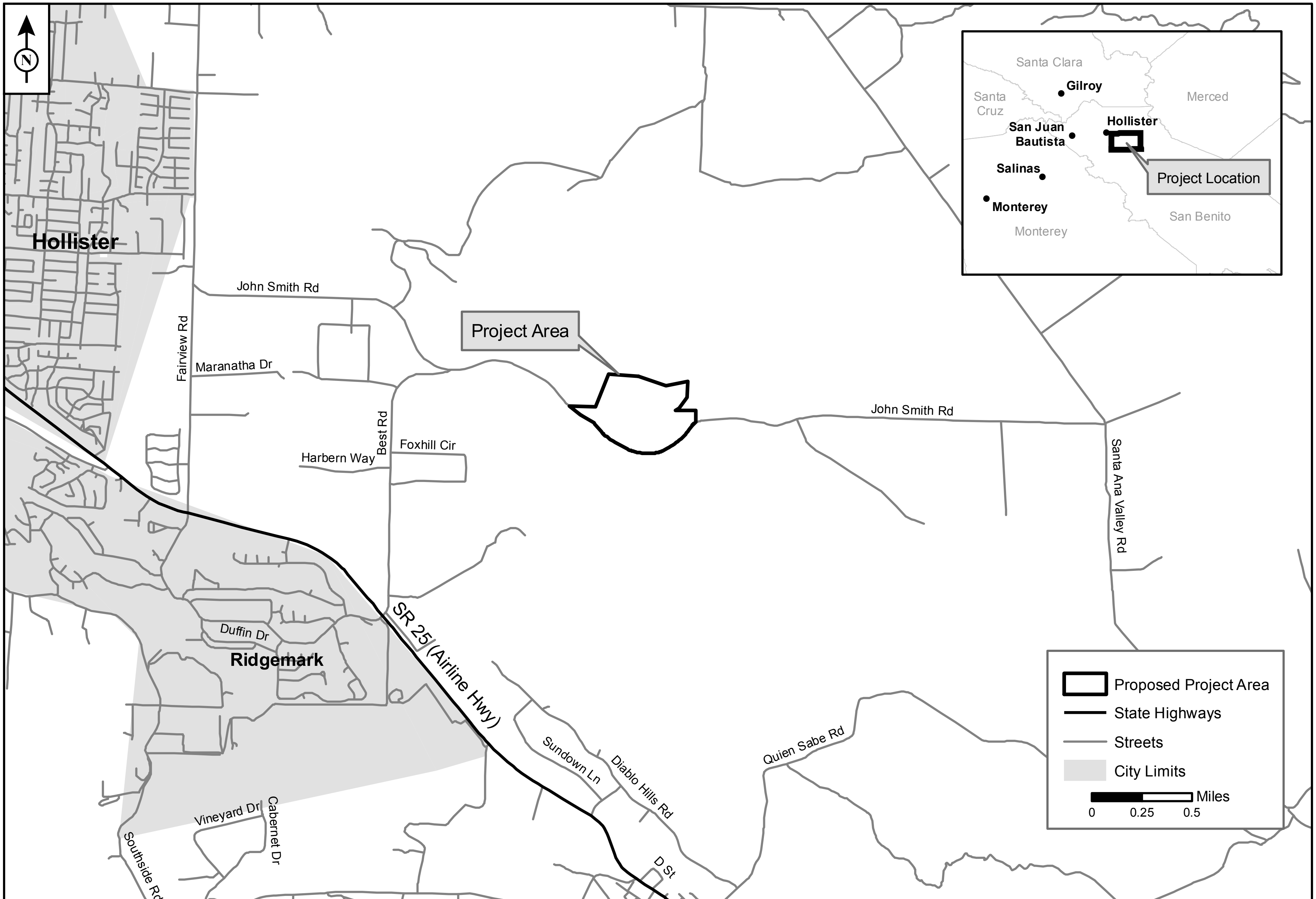
Current landfill operations occur within the boundaries of the permitted landfill footprint. Landfill equipment and the working face of the active landfill module are occasionally visible from John Smith Road during certain phases of landfill operation, such as when approaching the peak height of the active module. Typically equipment and the working face of the landfill are shielded from view based on the designed fill sequencing plan and the stockpiling of vegetated fill materials in perimeter areas surrounding activity areas. The landfill modules are designed so that a lift of garbage (approximately 12 to 20 feet in height) is developed along the outside edge of the module to shield the view of equipment and the working face from off-site locations. The lift is then covered with an intermediate soil cover and the module is filled behind the lift until it reaches capacity at which point another lift is constructed.

3.3 Regulatory Framework

Operations compliance and site monitoring and reporting activities are performed consistent with the following permits and documents:

- Solid Waste Facility Permit AA-35-0001
- Waste Discharge Requirements and Monitoring and Reporting Program No. R3 2010-0021 (MRP)
- Class I Hazardous Waste Facility Post-Closure Permit No. 03-SAC-006 (Post-Closure Permit) [Facility EPA ID No. CAD990665432]
- Wastewater Discharge Permit 92-002 and Amendments
- Monterey Bay Unified Air Pollution Control District Permit to Operate 14070 for contaminated water cleanup
- Monterey Bay Unified Air Pollution Control District Permit to Operate 14563 for the landfill gas extraction system and flare
- NPDES General Permit # CAS00001

The Solid Waste Facility Permit #35-AA-0001 was issued January 26, 2006 by the California Department of Resources, Recycling & Recovery and requires landfill gas monitoring in soil-gas probes and in on-site structures. This monitoring is performed consistent with the Landfill Gas Monitoring Program Plan prepared by Golder Associates in June 2009. The permit regulates the handling, processing and disposal of solid waste at the site. MRP 2010-0021 is contained in Waste Discharge Requirements Order R3



Source: ESP 2012, ESRI 2012, L&A 2012.

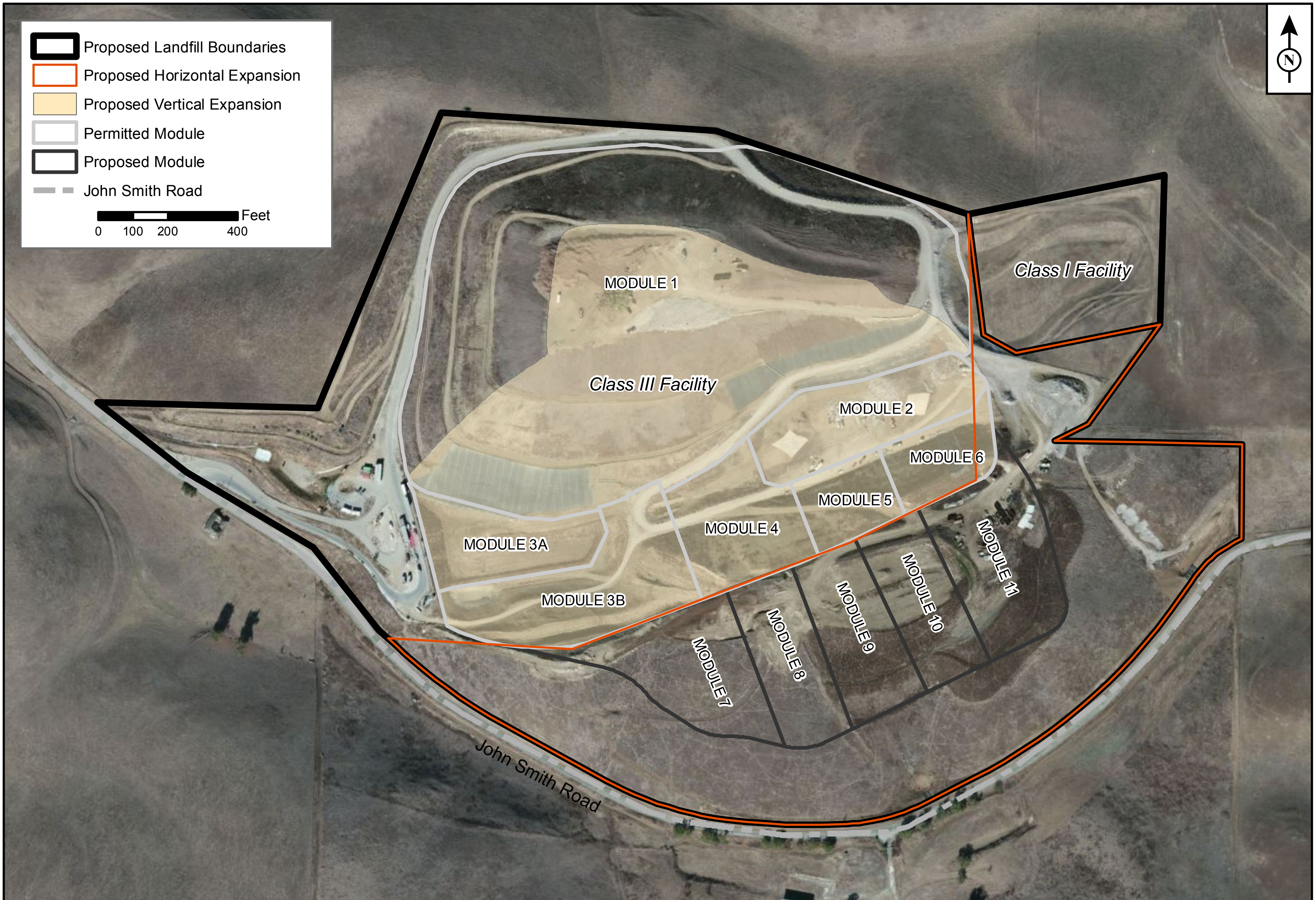
Figure 1. Project Location

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

Source: ESP 2012, ESRI 2012, L&A 2012.

Figure 2. Existing Facilities

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Source: ESP 2012, ESRI 2012, L&A 2012.

Figure 3. Proposed Project

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2010-0021 (WDR). The WDR permit was issued by the California Regional Water Quality Control Board, Central Coast Region (RWQCB) on May 12, 2010, and replaced WDR R3-2002-0001. The Class I Post-Closure Permit was issued by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) on November 7, 2003 (effective date December 8, 2003). The wastewater discharge permit was issued by the City of Hollister Department of Public Works in 1992. The Air District permit for the landfill gas extraction well system was issued on January 28, 2009 and replaces permit 7753A, which was issued in February 1998. Groundwater sampling is being performed in a manner consistent with the Sampling and Analysis Plan contained in Appendix B of the *Site-Specific Water-Quality Monitoring Plan* for the JSRL. Changes to sampling frequencies and monitoring parameters, as specified in the new MRP, are being adhered to during monitoring events. The new MRP also requires more inspections and record keeping related to stormwater drainage systems and control, quarterly rather than semi-annual rainfall discussions, volume measurements and inspections of the expansion area's leachate collection and removal system and the landfill gas collection system, and calculations of the pollutant mass removed by the groundwater, leachate, and landfill gas extraction systems.

The following two MBUAPCD permits condition the landfill gas collection and treatment system: (1) the Permit to Operate the Landfill Gas Collection & Flare System #14563 which was issued March 30, 2010 and (2) the Authority to Construct #15041 was issued August 8, 2011 to install a new higher capacity flare; the new flare installation is expected to be completed by June 2012.

Stormwater monitoring is required to be conducted twice during the rainy season. During qualifying storms, samples are collected at designated locations for compliance with Water Quality Order No. 97-03-DWQ (Waste Discharge Requirements for Discharge of Storm Water Associated with Industrial Activities Excluding Construction Activities). This Water Quality Order was issued by the California State Water Resources Control Board (SWRCB) under the National Pollutant Discharge Elimination System (NPDES) General Permit CAS000001. A Stormwater Pollution Prevention Plan (SWPPP) was submitted to the RWQCB in December 1999. It incorporated the updated stormwater requirements of Order No. 97-03-DWQ, identified potential sources of pollution that may affect stormwater discharge quality, and contains best management practices (BMPs) to minimize pollution in stormwater discharge from the JSRL. The SWPPP was revised and updated in June 2010. Results of stormwater monitoring are submitted to the RWQCB in the annual Stormwater Monitoring Report each July.

In September 2010, the RWQCB issued a letter requesting sample collection and analysis for compliance with Subchapter N of Title 40 Code of Federal Regulation (CFR) if stormwater runoff comes in direct contact with landfill waste.

The project may require permits or approvals from the following:

- U.S. Army Corps of Engineers - Nationwide Section 404 Discharge Permit
- California Department of Fish and Game - Lake/Streambed Alteration Agreement
- Regional Water Quality Control Board - General Permit for Discharges of Storm Water Associated with Construction Activity; National Pollutant Discharge Elimination System Permit; Waste Discharge Requirement; Water Quality Certification
- California Department of Resources, Recycling and Recovery (CalRecycle)-Solid Waste Facility Permit
- San Benito County Planning Commission – CEQA and Project Approval
- Monterey Bay Unified Air Pollution Control District – Authority to Construct and Permit to Operate

The design and operation of the proposed project would be required to comply with Title 27, Environmental Protection-Division 2 of the California Code of Regulations (CCR) and AB 32 and would be required to develop a geotechnical report and drainage and erosion control reports.

3.4 Landfill Operations Currently Permitted

The current JTD (SWT Engineering, March 2009) provides operational guidelines for the current operation of the permitted JSRL facility and includes the following elements required by statute and regulation.

3.4.1 Landfill Operations History

The JSRL began receiving waste in 1968 and was permitted to receive nonhazardous municipal and industrial waste and hazardous waste. At the time filling began, separation of hazardous from nonhazardous waste was not required by the regulations. Beginning in 1974 and ending in 1977, hazardous waste discharge was confined to an area that is now the northeast portion of the Class III landfill. Since 1977, the Class III area has received nonhazardous municipal solid waste. The landfill reached its Resource Conservation and Recovery Act (RCRA) pre-Subtitle D[2] waste footprint in 1993. The pre-Subtitle D landfill has subsequently been designated as Module 1. In late 1996, construction of a toe berm in the southwestern portion of the landfill began. Work was completed on the toe berm and site access road in 1999.

In 2007, construction of the southern landfill expansion began. The 2001 expansion area, which includes Modules 2 through 6, is being constructed with a composite liner system

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[2] Subtitle D of the federal Resource Conservation and Recovery Act (42 U.S.C. §6901 et seq., as amended (1988)), regulates the management of nonhazardous solid waste, by establishing minimum federal technical standards and guidelines for state solid waste plans in order to promote environmentally sound management of solid waste.

and a leachate collection and removal system that drains to a sump in the western end of Module 3A. The first expansion module, Module 2, was constructed in the eastern portion of the expansion area, and on December 8, 2008, the California Regional Water Quality Control Board (RWQCB) certified the module for waste placement. Filling in Module 2 began in the spring of 2010. In the spring and summer of 2009, Module 3A was constructed along the southwest portion of the landfill. The module was certified for waste placement by the RWQCB on March 30, 2010 and began receiving waste in the fall of 2010. The sedimentation basin, which had been where Module 3A was constructed, was moved to the area immediately north of well CP-31. In the summer of 2011, Module 3B was constructed. The module was certified for waste placement and began receiving waste in the fall of 2011. Modules 4 through 6 will be constructed in the future. The new expansion area proposed by this project will include Modules 7 through 11.

The Class I facility at JSRL was constructed and permitted for the disposal of liquid hazardous wastes and operated from 1977 to 1983. It was constructed in response to a change in state regulations that required separation of hazardous and nonhazardous waste. The Class I facility contained two waste management units: Impoundment 1 and Impoundment 2. Impoundment 1 was the primary disposal unit and accepted liquid hazardous wastes, mostly pesticide rinseate. It was approximately 18,700 square feet in size (0.43 acres). Impoundment 2 was designed for stormwater and overflow from Impoundment 1; it was approximately 15,600 square feet in size (0.36 acres). In September 1984, all liquids were removed from Impoundment 1, and in 1988, a Hypalon® interim cover was placed over waste residue in Impoundment 1. An interim cover (geomembrane) was not needed on Impoundment 2 because contaminant concentrations in the soil beneath the impoundment were low.

Construction of the Class I facility closure cap was completed in the summer of 1992 and the first Hazardous Waste Facility Post-Closure Permit was issued by the California Department of Toxic Substances Control (DTSC) in June 1996. On November 7, 2003, the DTSC issued a new Hazardous Waste Facility Post-Closure Permit, as part of the 10-year permit renewal process, with an effective date of December 8, 2003.

3.4.2 Environmental Monitoring Programs

Monitoring at the JSRL is conducted on groundwater, extracted groundwater that is discharged to the sanitary sewer system, soil-gas, surface water/storm-water runoff, landfill gas and gas condensate, and leachate.

3.4.2.1 Groundwater Monitoring

The Class I facility has one monitoring program: the post-closure detection monitoring program. The Class III facility has two programs: the detection monitoring program and the corrective action monitoring program. The groundwater extraction wells (**Figure 4**) are part of the corrective action monitoring program. Each program's monitoring network, sampling frequency, and monitoring parameters are described in the following sections. In addition to the wells that fall within these designated monitoring programs, several other wells, including new piezometers P-1 and P-2 south of the new northern landfill expansion area were installed to provide supplemental controls. They are currently used to determine the groundwater potentiometric elevation for each rain event.

3.4.2.1.1 Class I Post-Closure Detection Monitoring

The Class I detection monitoring network is designed to monitor groundwater quality beneath the closed facility to determine if there has been a contaminant release. The network includes wells:

- E-2
- E-3
- E-9
- E-17

Well E-9 is the background monitoring point; the other three wells are point-of-compliance wells. These wells are monitored once every five years for constituents of concern (COCs), and semiannually for determining groundwater potentiometric elevation. The next scheduled COC monitoring event is the first semi-annual event in 2015. As stated above, well E-2 is also monitored semiannually for volatile organic compounds (VOCs) as part of the Class III detection monitoring program pursuant to the MRP.

The other wells within the Class I facility that are monitored semiannually for determining groundwater potentiometric elevation include E-1, E-8, E-12, E-13, E-14, and G-24. These wells are either hydraulically upgradient from the former impoundments or screened at deeper intervals in the aquifer than the wells listed above. Consequently, they are not sampled and analyzed for first-indications of a release.

3.4.2.1.2 Class III Detection Monitoring

The Class III detection monitoring network is designed to determine whether the lateral and vertical zone of off-site VOC-impacted groundwater is expanding or new releases are occurring. The network includes wells:

- E-2
- E-15
- WA-11
- WA-15
- CP-25

Wells WA-11 and E-15 (E-16 if E-15 is dry) are the background monitoring points. Well E-2 is hydraulically downgradient from background well E-15 in the Class I area in an area that had seen trace-level VOCs related to landfill gas. Well WA-15 is a deep compliance well for monitoring groundwater beneath the VOC-impacted zone. Well CP-25 is a shallow compliance well for monitoring groundwater downgradient from the impacted zone. These wells are monitored semiannually (second and fourth quarters) for the routine monitoring parameters, semiannually for determining groundwater

Source: ESP 2012, ESRI 2012, L&A 2012.

Figure 4. Groundwater Monitoring and Extraction Points

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potentiometric elevation, and once every five years for COCs. The next scheduled COC monitoring event is the first semi-annual event in 2015.

The other wells within the Class III facility and adjacent downgradient property that are used for determining groundwater potentiometric elevation include W-2, W-3, WA-13, WA-14, Lima 3 (a former windmill well), and P-1 and P-2.

On June 23, 2004, well W-1 was decommissioned with the approval of the RWQCB because the slope below the well had failed and the well appeared to be in danger of being further damaged by additional slope failure.

3.4.2.1.3 Class III Corrective Action Monitoring

The Class III corrective action monitoring program is designed to evaluate the effectiveness of the on-site groundwater extraction system at controlling migration of VOCs from the site, and the effectiveness of the off-site groundwater extraction system at stopping downgradient migration of VOCs. The network includes wells:

•W-4	•W-5	•W-7	•WA-8	•WA-9
•WA-10	•WA-12	•WA-19	•WA-20	•CP-30
•CP-31	•G-32	•G-33		

Wells W-4, W-5, WA-19, CP-30, and CP-31 are used to monitor water quality along the northern and western cross-gradient margin of the Class III area. Wells W-7, WA-12, G-32, and G-33 are used to monitor water quality downgradient from the on-site extraction system. WA-9 is used to monitor water quality along the southern margin of the off-site VOC impact zone, and wells WA-8, WA-10, WA-12, and WA-20 are used to monitor water quality downgradient from the off-site extraction wells EW-2 and EW-3. These wells are monitored semiannually (second and fourth quarters) for the routine monitoring parameters, semiannually for determining groundwater potentiometric elevation, and once every five years for COCs. The next scheduled COC monitoring event is the first semi-annual event in 2015.

Four additional groundwater wells were proposed in the 2003 Class III expansion area monitoring plan. They were tentatively designated CP-26 through CP-29, but this designation is likely to change to keep a consecutive well numbering system.

3.4.2.1.4 Groundwater Discharge Monitoring

Groundwater from the extraction wells is discharged to a sanitary sewer line along John Smith Road. Each extraction well has a sampling port from which samples can be collected. The on-site groundwater extraction wells are:

- EW-1
- EW-4
- EW-5

The off-site extraction wells are:

- EW-2
- EW-3

The Wastewater Discharge Permit indicates that quarterly monitoring is to be conducted by staff of the Domestic Water Treatment Plant at the end of the industrial process sewer line and prior to the mixing of diluting waters. To provide additional data for evaluating the extraction system effectiveness, the County is collecting samples of the parameters for which discharge limits are established.

The groundwater extraction system wells are also in the corrective action monitoring program in the MRP.

The proposed project includes the installation of groundwater monitoring points as shown on **Figure 4**.

3.4.2.2 Vadose-Zone Gas Monitoring

The soil-gas monitoring network for the JSRL was expanded in September 2009 consistent with the August 2009 approved revisions to the Landfill Gas Monitoring Program Plan. On November 16, 2009, the RWQCB approved the revised soil-gas monitoring network and incorporated the network into new MRP 2010-0021. Temporary probes GP-12TR and GP-12TG were destroyed and replaced with permanent probes (GP-12R, GP-12Y and GP-12G) at the new GP-12 location on October 6, 2011. The network includes the following probes:

•GP-2	•GP-6Y	•GP-9Y	•GP-12R
•GP-2AR	•GP-6G	•GP-9G	•GP-12Y
•GP-2AY	•GP-7R	•GP-10R	•GP-12G
•GP-2AG	•GP-7Y	•GP-10Y	•GP-13R
•GP-3A	•GP-7G	•GP-10G	•GP-13Y
•GP-6R	•GP-9R	•GP-11T	•GP-13G

The probes are monitored quarterly for field-measured VOCs and methane, and annually for laboratory-tested VOCs if landfill gas impacts are indentified by field testing, consistent with the monitoring frequency specified in MRP 2010-0021. Probe locations are shown on **Figure 5**.

3.4.2.3 Surface-Water Monitoring

Surface water is monitored as stormwater runoff for compliance with State Water Resources Control Board Order No. 97-03-DWQ National Pollutant Discharge Elimination System (NPDES) Permit No. CAS00001. The only surface water at the facility, other than water collected in the sedimentation basin, is the ephemeral runoff during storms.

Source: ESP 2012, ESRI 2012, L&A 2012.

Figure 5. Landfill Gas Monitoring and Extraction Points

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

The NPDES permit requires that stormwater samples be collected during the wet season and an annual summary report be prepared and submitted. Stormwater runoff is monitored at three locations:

- SP-1
- SP-2
- SP-3

Recently, the site operator has modified grades and moved the sedimentation basin; stormwater runoff is now directed largely toward the new sedimentation basin. The remaining stormwater from the Class III area is directed toward the site entrance. The combined discharge is sampled at a location designated SP-1 at the site entrance. The second stormwater monitoring location, SP-2, is a culvert drain that transmits water from a small catch basin to the south side of John Smith Road; it is located approximately 2,500 feet east of the site entrance. The third stormwater monitoring location, SP-3, is located along John Smith Road southeast of the facility and monitors discharge from the catch basin below the emergency exit road and portions of the soil stockpiles and construction staging area. Locations are shown on **Figure 6**. The stations are sampled twice during the rainy season, if flow is present. Samples are analyzed for pH, total suspended solids, total organic carbon or oil and grease, specific conductance, and iron. The analytical results, along with the required stormwater inspections and observations, are documented in an annual report that is submitted to the RWQCB on July 1 of each year. Details of the program are presented in the Stormwater Pollution Prevention Plan. If runoff has been in contact with waste, it is also analyzed for parameters for compliance with Subchapter N of 40 CFR 445.21.

3.4.2.4 Landfill Gas and Leachate Monitoring

Landfill gas, landfill-gas condensate, and leachate monitoring are conducted consistent with the MRP. Landfill gas flow is monitored continuously. Landfill gas and condensate are sampled semiannually at the flare station. Leachate is sampled annually from the leachate collection and removal system sump in Module 3A.

The current California Regional Water Quality Control Board Waste Discharge Requirements (WDRs) require that a Preferential Leachate Pathway (PLP) be installed on the south-facing slope of Module 1. The purpose of the PLP is to route leachate from waste placed over unlined Module 1 as part of the earlier expansion of Modules 2 through 6 and into the LCRS system for the lined modules.

3.5 Waste Acceptance and Traffic Conditions

JSRL Class III Municipal Solid Waste landfill mainly receives mixed municipal solid waste (MSW) from residential and commercial sources in the unincorporated area of San Benito County and the Cities of Hollister and San Juan Bautista. In addition, residual waste is currently received from the surrounding wasteshed to the north of the site. Residual waste will continue to be accepted and potentially other MSW will be received from the surrounding wasteshed with implementation of the proposed project.

JSRL is currently permitted to receive 500 tons per day of solid waste with a not to exceed in-bound traffic count of 600 vehicles per day. **Tables 1** and **2** display the annual tonnage in-take from 2009 to 2011 and annual and average traffic counts from 2008 to 2011, respectively:

Table 1. Quantities of Material Received at John Smith Road Landfill (2009, 2010, 2011)

Material	2009 (tons)	2010 (tons)	2011 (tons)
Total Tons Inbound	102,826	111,107	103,840
Unweighed Mixed Recycle	52	42	45
Onsite Recycle (Dirt, Concrete, Asphalt)	5,574	11,423	13,418
Woodchips and Mulch Used On-site as Erosion Control	6,665	7,761	7,512
Buried Tonnage	90,031	91,389	82,532
Average Daily Buried Tonnage*	249.39	253.16	228.62
Peak Daily Tonnage	499.49	499.37	499.79

Source: Waste Connections, 2011
* Note: Daily Averages are Based on 361 Operating Days/Year

Table 2. Vehicles Entering the Landfill from 2008-2011

Vehicle Type	2008 Annual	2008 Daily Average*	2009 Annual	2009 Daily Average*	2010 Annual	2010 Daily Average	2011 Annual	2011 Daily Average*
Self-haul	36,032	100	35,673	99	33,265	92	34,068	94
Commercial	13,196	37	14,120	39	13,904	39	14,367	40
Total	49,228	137	49,793	138	47,169	131	48,435	134

Source: Waste Connections, 2011
* Daily Averages are Based on 361 Operating Days/Year

San Benito County's Integrated Waste Management Department conducts four "Bulky Item" disposal days, with peak numbers of self-haul trips of 351 in 2009, 326 in 2010 and 309 in 2011. Peak daily traffic volumes at the JSRL excluding "Bulky Item" disposal days for 2009, 2010 and 2011 are shown in **Table 3**.

Table 3. Peak Daily Traffic Excluding Bulky Item Days from 2009-2011

Vehicle Type	2009 (December 26, 2009)	2010 (April 25, 2010)	2011 (April 3, 2011)
Self-haul	275	267	235
Commercial	19	16	9
Total	294	283	244

Source: Waste Connections, 2011

Source: ESP 2012, ESRI 2012, L&A 2012.

Figure 6. Stormwater Sampling Points and Ponds
JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

3.6 Proposed Project

This environmental analysis is based on the project design and operation information contained in the California Health Safety Code for Post-Closure Permit Modifications for the Class I area, the JTD and the Preliminary Closure and Postclosure Maintenance Plan for the Class III area (Lawrence & Associates, 2012). All of the documents are incorporated by reference and made a part of this document.

The proposed project consists of a lot line adjustment which adds 33.81 acres to the JSRL Class III permitted facility area, thereby increasing the waste footprint by approximately14 acres, a second lot line adjustment which reduces the Class I area by 3.05 acres; a General Plan Amendment to change the land use designation of the adjusted acreage from Agricultural Rangeland to Public/Quasi Public; both a lateral and vertical landfill expansion to increase landfill capacity, a daily permitted tonnage increase from 500 tons per day to 1,000 tons per day; ability to accept unlimited recyclables for diversion not counted against the 1,000 tons per day cap; and re-grading of the Class I facility to allow for temporary soil stockpiling during the operational life of the Class III facility.

3.6.1 Project Objectives

- To provide a stable, long-term source of disposal capacity,
- To promote and encourage waste diversion and recycling activities,
- To increase the efficiency of site operations,
- To maximize the use of the existing John Smith Road Landfill facility, and
- To implement advanced waste technologies and promote innovative uses of landfill-related and generated products, including the potential generation of energy.

3.6.2 Project Elements

1. JSRL Class III lot line adjustment: **Figure 3** illustrates the area proposed for inclusion as part of the Solid Waste Facility Permit revision; application to the San Benito County Planning Department has been made to allow this adjustment.
2. JSRL Class I lot line adjustment: **Figure 3** illustrates the area for adjustment under a Class I Permit Modification with the Department of Toxics Substances Control; General Plan Amendment to change the adjusted acreage from Agricultural Rangeland to Public/Quasi-Public in alignment with the existing designation for the landfill: Application to the San Benito County Planning Department for a General Plan Amendment has been made to affect this change.
3. Vertical Expansion of the Landfill: Modules 1 through 6 of the existing landfill would be modified to accommodate a maximum vertical expansion of approximately 65 feet. The JSRL would be expanded vertically from a current maximum elevation of 855 feet mean sea level (MSL) to a new maximum elevation of 920 feet MSL measured at the top of the closure cap. A 30-foot wide access road would be developed to access "top deck" of the JSRL. The access road would be sloped and for waste-hauling vehicles to access the top deck

during operation and then construction equipment during construction of the closure cap.

4. Lateral Expansion of the Landfill Footprint: Lateral expansion of the JSRL would add approximately 14 acres of additional fill area. The area would be divided into five modules (Modules 7 through 11), each with approximately two to three years of capacity. The final quantity and dimensions of the modules will be adjusted during final design of each module to minimize soil handling and match the waste acceptance rate at the time they are designed.
5. Gross Airspace Capacity: The vertical and lateral expansions would result in an increased gross airspace capacity of approximately 3.3 million cubic yards, which would equate to an increase in effective airspace of 2.88 million cubic yards. The project would result in a disposal rate increase of 180,500 tons per year (500 tons per day) above the existing conditions, thereby adding 10 years of capacity, or 5 additional years at 1,000 tons per day.
6. Daily Permitted Tonnage Increase: The project includes an increase in daily permitted tonnage from 500 tons per day to 1,000 tons per day, retaining the current maximum permitted vehicle trip limit of 600 per day.[3] The landfill is currently restricted to an in-bound limit of 500 tons per day. The proposed project would have a buried tonnage limit of 1,000 tons per day. The increased tonnage limit would allow the site to attract additional out of County waste flow and manage peak flows on any given day. It is unclear at this time how quickly it would take for the site to reach the new tonnage limit. The increase in waste acceptance is dependent on the flow of waste within the region and how attractive this site is in comparison to other regional facilities.
7. Acceptance of Recyclables: The application for revision of the Solid Waste Facility Permit includes the ability to accept unlimited recyclables under the traffic cap of 600 vehicles per day and outside of the 1,000 tons per day cap. In an effort to encourage waste diversion, there would be no limit on tonnage delivered to the landfill that would be diverted from burial.
8. Permit Modification with the Department of Toxic Substances Control to re-grade the Class I site for temporary soil stockpiling: A Class III Post-Closure permit Modification will be made to allow for re-grading of the Class I site to accept temporary soil stockpiling.
9. Greenhouse Gas Emissions Reduction: In 2008, the California Air Resources Board developed and approved the Assembly 32 Scoping Plan addressing

[3] Peak daily traffic is restricted to 600 inbound trips. As noted above, this limit would not change with the proposed project. The proposed JSRL expansion would result in an increase of approximately 25 commercial trucks per day to accommodate the increase in daily tonnage. With the proposed project, the average traffic mix by type of vehicle would be approximately 100 daily self-haul vehicles (unchanged) and 62 daily commercial vehicles.

strategies to reduce greenhouse gas emissions throughout the State. As part of the proposed project, the Applicant is committing to implement the following compliance measures:

- A-2, Tighter spacing of LFG wells
- A-4, Connection of LCRS layer to GCCS
- A-7, Enhance seals on LFG wells and boreholes
- A-9, BMP for LFG System Piping
- B-4, Maximum Capacity of Gas Control Equipment
- C-2, LFG Master Planning
- C-3, Energy Recovery from LFG
- D-3, Designing for closure and post-closure
- D-4, Promote deeper landfills
- D-7, Modify, limit or remove intermediate cover systems

3.7 Revisions to Joint Technical Document to Accommodate Proposed Project

The updated JTD (Lawrence and Associates, April, 2012), which is incorporated by reference into this document, includes information updated from the current JTD to accommodate the proposed project. The JTD sections marked with an asterisk have been revised to address these changed facilities and/or operations and the potential environmental effects of these proposed changes are addressed in the Initial Study:

1) General Information
    a) Facility Overview
    b) Site Plan *
    c) Hours of Operation

2) Waste Classification and Management
    a) Waste Type and Volumes *

3) Waste Management Unit Classification and Siting
    a) Airport Safety
    b) Volumetric Capacity *
    c) Site Life Estimate *
    d) Site Location
    e) Land Use *
    f) Ancillary Facilities[4] *

4) Design and Construction Standards
    a) General Design Parameters *

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[4]With the potential increase in the number of employees at the JSRL, the landfill office would require expansion. A larger modular unit would be installed to accommodate the increase in personnel.

b) Design Responsibility
c) Construction Sequencing Plan[5] *
d) Grading Plan *
e) Gas Management Plan[6] *

5) Operating Criteria
a) Records
b) Security
c) Sanitary Facilities
d) Communications Systems
e) Lighting
f) Safety Equipment
g) Personnel Requirements[7] *
h) Personnel Training
i) Supervisory Structure
j) Spreading and Compaction

6) Cover and Beneficial Use
a) Cover Materials
b) Alternative Daily Cover and Beneficial Reuse
c) Cover Frequency
d) Intermediate Cover

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[5]As currently envisioned, modules will be excavated and lined sequentially from Module 7 to 11. The fill sequence may change as filling progresses to minimize soil handling and optimize waste placement. Soil from module excavation would be used for: (1) daily and intermediate cover, (2) containment berms around the east, north, and west sides of Module 1 (part of the proposed project), or (3) placed in the proposed soil stockpile within the Class I area. Soil for the daily and intermediate cover for the last constructed module would be obtained from the soil stockpile within the Class I area. Soil for the closure cap would also be obtained from the soil stockpile within the Class I area, leaving the minimum amount of soil required for the Class I area to drain by gravity.

[6]The JSRL's existing gas-collection system is comprised of 32 landfill gas extraction wells. To ensure compliance with AB 32 (the Global Warming Solutions Act), 10 additional vertical extraction wells would be installed within the Module 1 footprint and three extraction wells would be installed in Module 2. The extraction wells in Module 1 would be installed on the top deck or near benches, while Module 2 extraction wells would be installed near benches outside of the active fill areas (SCS Engineers, 2011). The wells for the remaining landfill are not shown on Figure 5 and will be designed as waste filling progresses. Typically one vertical well per every two acres is required. The existing flare is at the upper end of its capacity and is scheduled to be replaced in the spring of 2012, with or without the proposed project expansion. The new flare will be rated for up to 850 standard cubic feet per minute (scfm) at 50% methane and 1,200 scfm at 35% methane. It will have a heat input capacity of approximately 22,934 MMBTU/hr.

[7]Eight staff members are currently employed at the JSRL. With the development of the proposed JSRL expansion, it can be anticipated that the JSRL would employ up to 10 staff members.

7) Handling
    a) Public Health and Design Parameters
    b) Salvaging Activities
    c) Volume Reduction Activities *
d) Equipment *
e) Waste Handling

8) Controls
    a) Nuisance
    b) Fire
    c) Leachate
    d) Dust Control
    e) Vectors
    f) Drainage and Erosion
    g) Litter
    h) Noise
    i) Traffic
    j) Hazardous waste

9) Compilation of Approvals

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4 Initial Study Checklists and Supporting Documentation

The resource-specific checklists and supporting discussion have been prepared based on the review of the project area and existing site conditions, review of relevant literature (as cited herein), consideration of the design plans for the proposed project, and discussions with County staff and agencies.

The following provides issue-specific checklists identifying the project's potential to result in significant impacts. Each checklist is followed by a description of the environmental setting within the project area relevant to the issues in each checklist and a discussion of each environmental issue/question in the checklist.

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4.1 Aesthetics

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?			✓	
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				✓
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓

4.1.1 Environmental Setting

The existing project site is rural in character, consisting of gently sloping, open grassland and grazing land ranging in elevations from 630 feet mean sea level (MSL) to 840 feet MSL. The project site is similar in character to the gently rolling topography found throughout San Benito County. The site is not comprised of particularly outstanding or unique visual features, such as trees, rock outcroppings, bluffs or historical buildings or landmarks. This site is not a component of a designated County scenic resource, or located along a County-designated scenic highway. The entrance to the project site is primarily visible to motorists, traveling east and west along John Smith Road. The views of the project site from John Smith Road and surrounding residences are partially obstructed by elevated rolling hills. No unique scenic resources or notable vistas are present within or within the viewshed the project area.

4.1.2 Regulatory Setting

The San Benito County General Plan contains the following policies addressing visual resources, including preservation of the scenic and rural character of the County.

San Benito County General Plan

The San Benito County General Plan contains the following policies addressing aesthetics.

Scenic Roads and Highways Element

Policy 1 It is the policy of San Benito County to provide for the protection of certain transportation corridors which are recognized as having unusual or outstanding scenic qualities.

Policy 3 Recognizing that most architectural designs are compatible with scenic areas, but that some can have significant adverse impact on the scenic resource, which the County seeks to preserve, it will be the County's policy to review proposals to insure that the obstruction of views is minimized.

4.1.2.1 Scenic Highways

The intent of the California Scenic Highway Program is "to protect and enhance California's natural scenic beauty and to protect the social and economic values provided by the State's scenic resources" (Caltrans, 2001). Caltrans administers the program, which was established in 1963 and is governed by the California Streets and Highways Code (§260 et seq.). The goal of the program is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of the adjacent land.

State Routes 25, 146 and 156 in San Benito County have been designated by Caltrans as routes that are eligible for scenic highway designation. The following discussion generally describes the segments of the State Routes within the County that are eligible state scenic highways but have not yet been officially designated:

- State Route 25 from Hollister south through central San Benito County to the Monterey County line;
- State Route 146 from State Route 25 southwest to Pinnacles National Monument;
- State Route 156 in northern San Benito County from the Monterey County line to the Santa Clara County line.

The San Benito County Scenic Roads and Highways Element of the General Plan identifies U.S. Highway 101, State Route 129, and State Route 146 as scenic corridors.

4.1.3 Methods and Significance Criteria

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and other performance standards recognized by San Benito County. Appendix G of CEQA Guidelines (Environmental Checklist Form) identifies the following issues for consideration in the evaluation of aesthetic/visual impacts:

- Substantial effects on a scenic vista;
- Substantial damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;

- Substantial degradation of the existing visual character or quality of the site and its surroundings; and
- Creation of a new source of substantial light and glare which would adversely affect day or nighttime views in the area.

Visual impacts were determined by assessing changes to the visual character of the project area due to the visible changes that would occur as a result of the project and estimating typical viewer response to the change. The viewer response to project changes is estimated through consideration of the quality of the view and the characteristics of the viewer. General view locations and viewsheds, as described in **Section 4.1.1**, were considered to assess the existing views and location of proposed project facilities.

Generally, motorists on area roadways are considered to be less sensitive to changes when traveling through areas with existing development whereas residents, workers or other individuals with direct views of an area are considered to be more sensitive to visual changes. Conversion of natural or undeveloped areas to developed uses is generally considered adverse, although this depends partly on the existing quality of the view of an undeveloped area and the development that would occur.

The resulting level of visual impact is determined by combining the severity of resource change with the degree of reaction the visual change may have to a typical viewer based on views common and appropriate to the region as perceived by most viewers. As such, the analysis and determinations of impact significance attempt to capture differences in viewer sensitivity depending on viewer location.

The following are used to determine the significance of changes to the visual character of the project area:

Low – Temporary or long-term change to the existing visual environment with a predicted low adverse viewer response to the change. Impact is considered less than significant and does not require mitigation.

Moderate – Temporary or long-term change to the existing visual environment with a predicted moderate adverse viewer response to the change. Impact is considered less than significant. If mitigation to minimize the visual effect is available, the mitigation is recommended.

Moderately High – Long-term change to the existing visual environment with a predicted moderately high adverse viewer response. Impact is considered significant. If mitigation to minimize the visual effect is available, mitigation is recommended. If mitigation does not reduce the impact to less than significant, the impact is considered significant and unavoidable.

High – Long-term change to the existing visual environment with a predicted high adverse viewer response. Impact is considered significant. If mitigation to minimize the visual effect is available, mitigation is recommended. If mitigation does not reduce the impact to less than significant, the impact is considered significant and unavoidable.

4.1.4 Potential Environmental Effects

a) *Would the project have a substantial adverse effect on a scenic vista?*

Less Than Significant. Although many scenic vistas are located throughout the mountain ranges in San Benito County, there are no designated scenic vistas in the vicinity of the project area. The proposed project would result in a vertical expansion from a current maximum elevation of 855 feet MSL to a new maximum elevation of 920 feet MSL measured at the top of the closure cap. The resulting 65-foot increase in landfill height, the proposed horizontal expansion, and the proposed installation of the larger ¾ modular unit for the landfill office would result in a noticeable change from off-site locations (e.g., adjacent properties, John Smith Road); however, the proposed project would not result in substantial modification and/or obstruction of the project area's views, and therefore, would result in a less than significant impact on a scenic vista.

b) *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?*

No Impact. The nearest highway segment that is eligible for scenic highway designation is on State Route 25 from Hollister south through central San Benito County to the Monterey County line. This designation occurs approximately 2.0 miles south and west of the proposed project area. The San Benito County Scenic Roads and Highways Element of the General Plan identifies U.S. Highway 101, State Route 129, and State Route 146 as scenic corridors. These routes are approximately 14 miles (for U.S. Highway 101 and State Route 129) and approximately 17 miles (for State Route 146) from the proposed project area. As such, the project would not affect aesthetic resources within the proximity of a State or County scenic highway.

c) *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

Less Than Significant. Visual impacts (aesthetics) were determined by assessing changes to the visual character of the project area due to the visible changes that would occur as a result of the project and estimating typical viewer response to the change. The viewer response to project changes is estimated through consideration of the quality of the view and the characteristics of the viewer. General view locations and viewsheds were considered to assess the existing views and location of proposed project facilities.

Generally, motorists on area roadways are considered to be less sensitive to changes when traveling through areas with existing development whereas residents, workers or other individuals with direct views of an area are considered to be more sensitive to visual changes. Conversion of natural or undeveloped areas to developed uses is generally considered adverse, although this depends partly on the existing quality of the view of an undeveloped area and the development that would occur.

The resulting level of visual impact is determined by combining the severity of resource change with the degree of reaction the visual change may have to a typical viewer based on views common and appropriate to the region as perceived by most viewers. As such, the analysis and determinations of impact significance attempt to capture differences in viewer sensitivity depending on viewer location.

Visual simulations of the proposed expansion were prepared by Lawrence & Associates (2012). Visual simulations were prepared using an average height of 5 feet from the nearest portion of the residential structure on the property (for Locations 1 through 4), along eastbound John Smith Road (for Locations 5 and 6), and along westbound John Smith Road (for Location 7). The selected viewpoints include the four closest residences to the project area and three viewpoints along John Smith Road (two in the eastbound direction approaching the project area and one in the westbound direction approaching the project area). The viewpoints are illustrated on **Figure 7**, and the simulated views are shown on **Figures 7a** through **7d**. It should be noted that the visual simulations are based on existing topography and do not take into account existing structures, vegetation, and/or roadways that may be present. The visual simulations prepared for the proposed project are approximate.

Viewpoint 1 (**Figure 7a**) is located approximately at 111 Best Road. From Viewpoint 1, the view of the proposed project would occur in the easterly direction. Approximately 150 feet of the proposed expansion would be visible from Viewpoint 1.

Viewpoint 2 (**Figure 7a**) is located approximately at 928 Foxhill Circle. From Viewpoint 2, the view of the proposed project would occur in the northeast direction and would be obstructed by existing topography.

Viewpoint 3 (**Figure 7b**) is located approximately at 2000 John Smith Road. From Viewpoint 3, the view of the proposed project would occur in the southeast direction. Approximately 50 feet of the proposed expansion would be visible from Viewpoint 3.

Viewpoint 4 (**Figure 7b**) is located approximately at 3503 John Smith Road. From Viewpoint 4, the view of the proposed project would occur in the west-northwest direction and would be obstructed by existing topography.

Viewpoint 5 (**Figure 7c**) is located approximately 3,800 feet west of the Landfill access road along John Smith Road. From Viewpoint 5, the view of the proposed project would occur in the easterly direction. Approximately 75 feet of the proposed expansion would be visible from Viewpoint 5. (Please note that John

Smith Road is not illustrated in the middle- and foreground of the visual simulation.)

Viewpoint 6 (**Figure 7c**) is located approximately 700 feet west of the Landfill access road along John Smith Road. From Viewpoint 6, the view of the proposed project would occur in the easterly direction. Approximately 150 feet of the proposed expansion would be visible from Viewpoint 6. (Please note that John Smith Road is not illustrated in the middle- and foreground of the visual simulation.)

Viewpoint 7 (**Figure 7d**) is located approximately 2,300 feet east of the Landfill's eastern boundary along John Smith Road. From Viewpoint 7, the view of the proposed project would occur in the westerly direction. Approximately 100 feet of the proposed expansion would be visible from Viewpoint 7. (Please note that John Smith Road is not illustrated in the middle- and foreground of the visual simulation.)

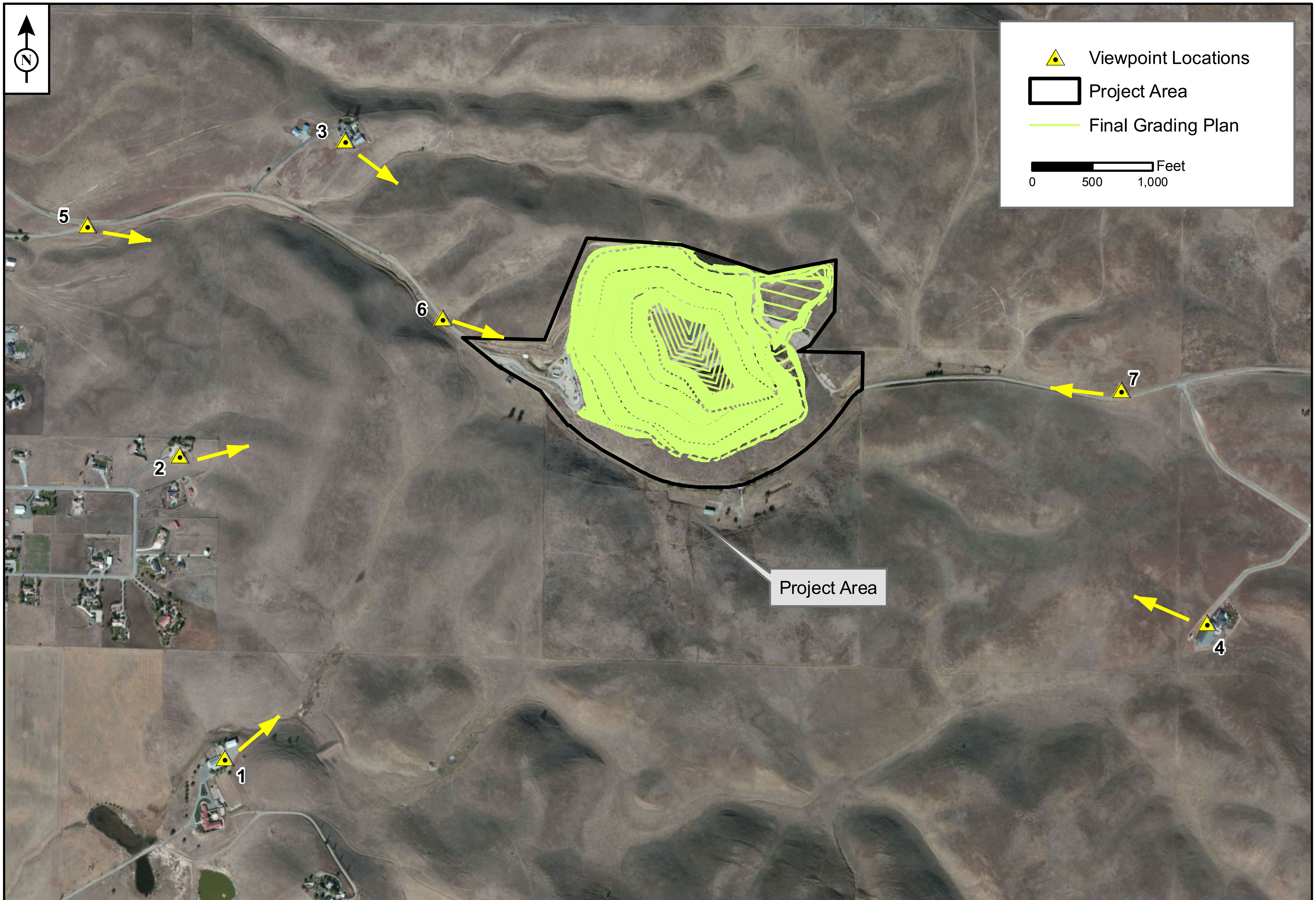
The existing office/scalehouse is not visible from the road. The proposed ¾ modular unit used for the landfill office (which would not increase in height) would not be visible from the simulation locations.

As discussed above, visual impacts are determined by assessing viewer's response to the change. Generally, motorists on area roadways are considered to be less sensitive to changes when traveling through areas with existing development whereas residents, workers or other individuals with direct views of an area are considered to be more sensitive to visual changes. Conversion of natural or undeveloped areas to developed uses is generally considered adverse, although this depends partly on the existing quality of the view of an undeveloped area and the development that would occur.

The proposed project would be visible to motorists along John Smith Road and two of the four nearest residences (111 Best Road, 928 Foxhill Circle, 2000 John Smith Road, and 3503 John Smith Road), based on the project visual simulations. Although the proposed project would alter the existing topography, the Landfill would use vegetated stockpile materials to screen the working face from offsite viewsheds. The closure cap would be contoured and revegetated to blend with the existing surroundings. Therefore, this impact is considered less than significant.

d) *Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

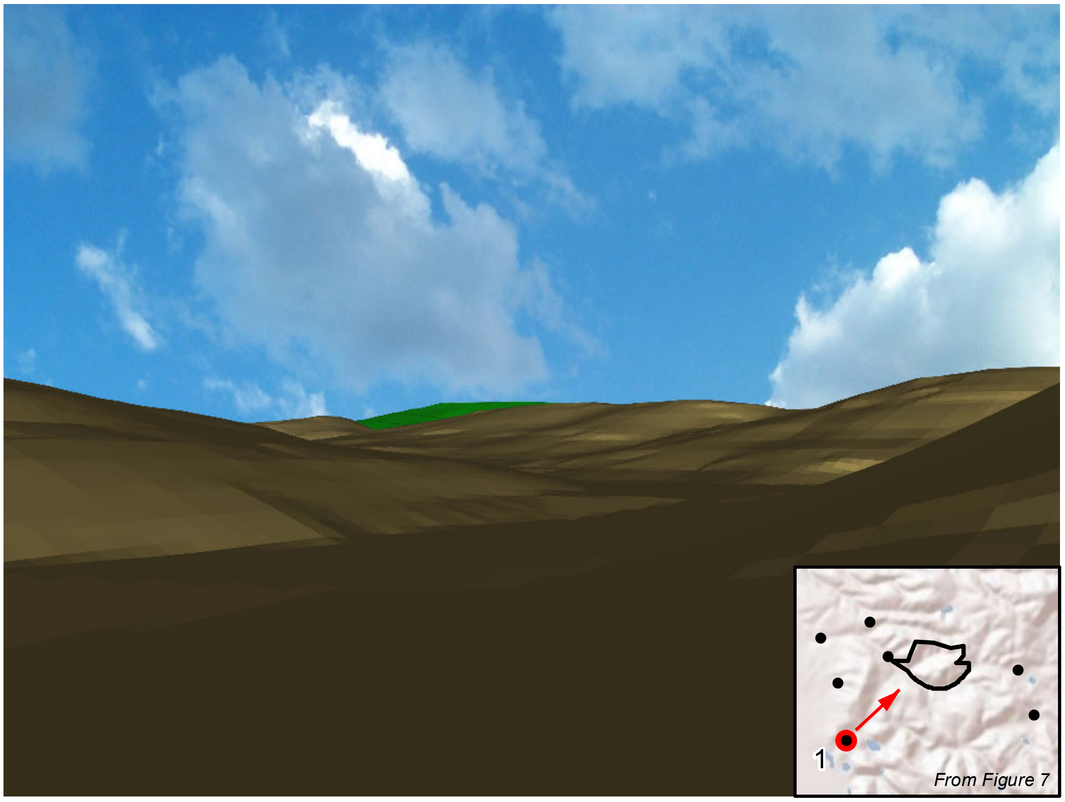
No Impact. The JSRL receives refuse from the public on Monday through Friday from 8:00 a.m. to 4:00 p.m. and Saturday and Sunday from 9:00 a.m. to 3:00 p.m. Typically, there is sufficient light for safe unloading of refuse vehicles and landfill equipment operation. In the event that lighting is required, use of portable lighting is permitted. In addition, permanent outside lighting at the scalehouse is



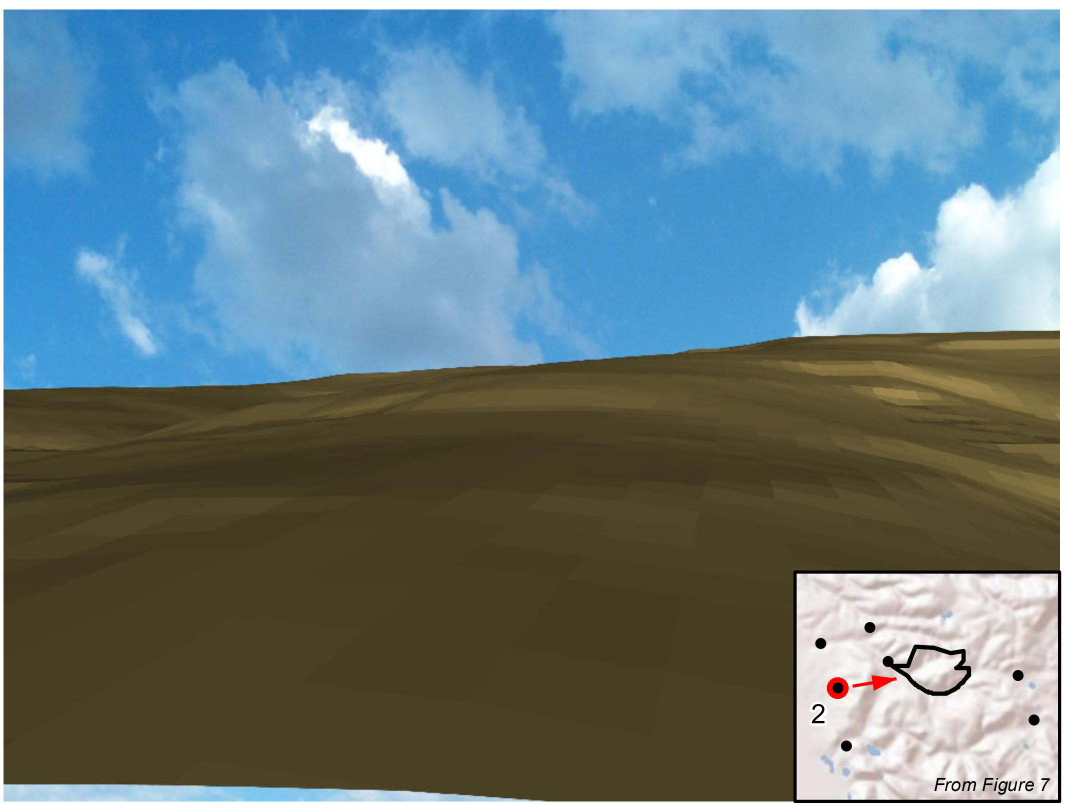
Source: ESP 2012, ESRI 2012, L&A 2012.

Figure 7. Viewpoint Locations

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Viewpoint 1

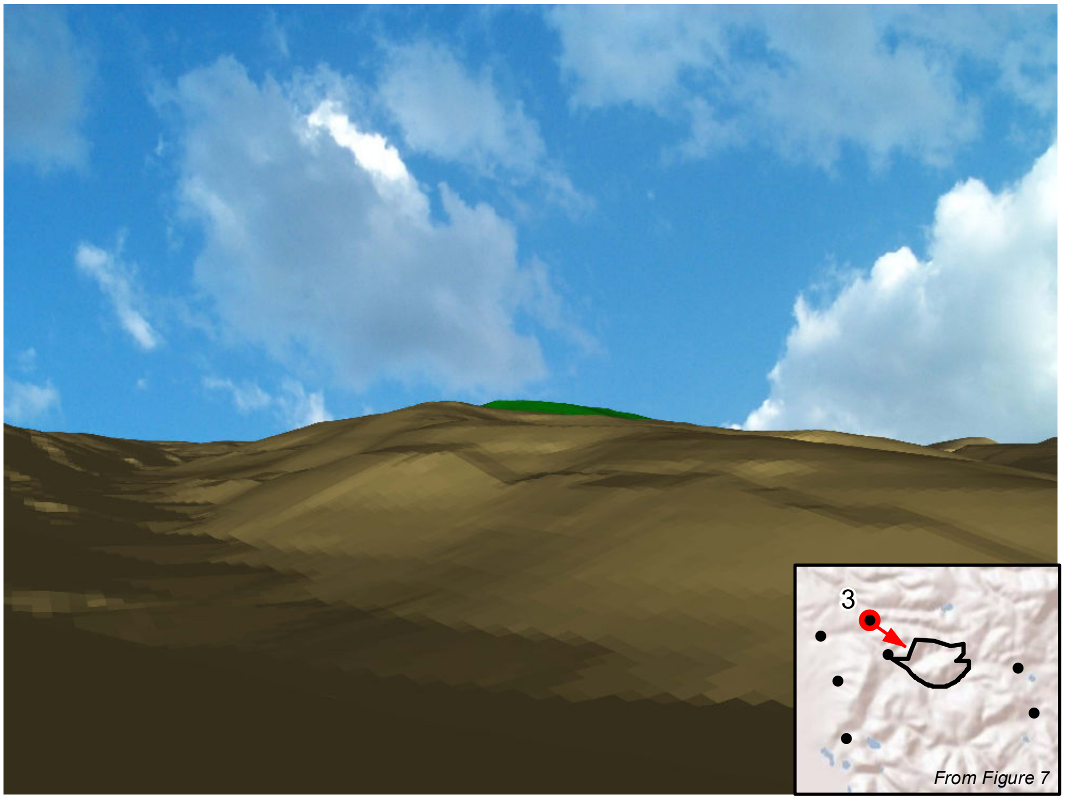


Viewpoint 2

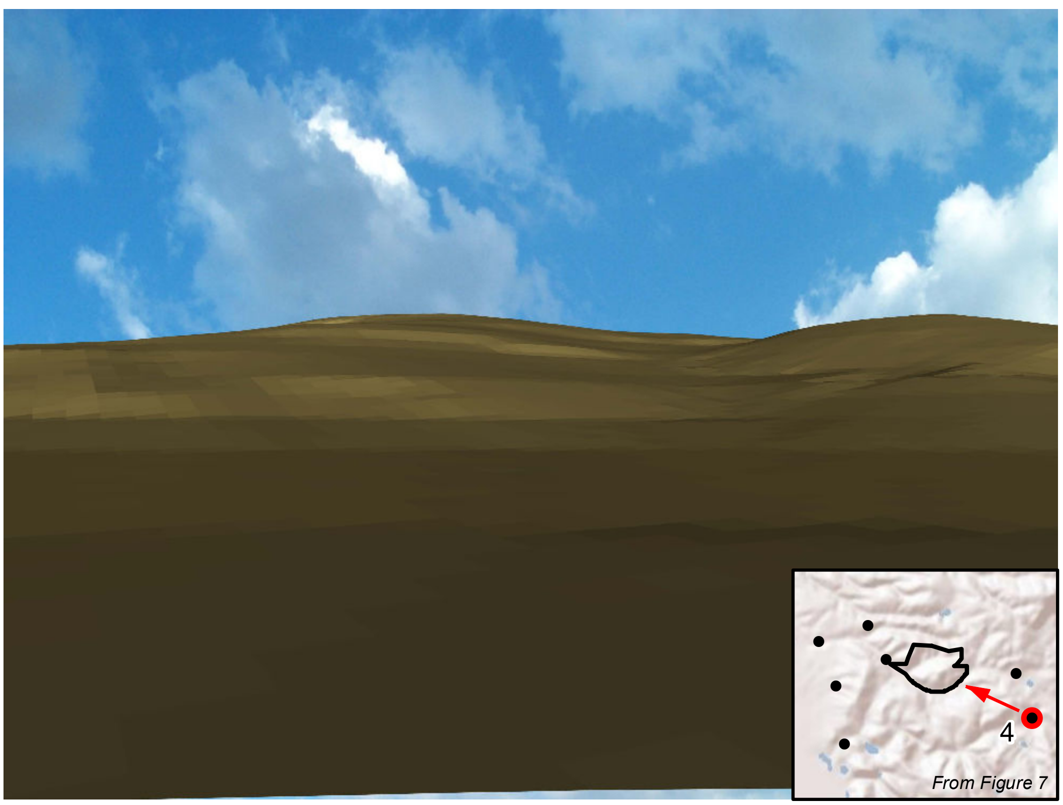
Source: L&A 2012.

Figure 7a. Viewpoints 1 and 2

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Viewpoint 3

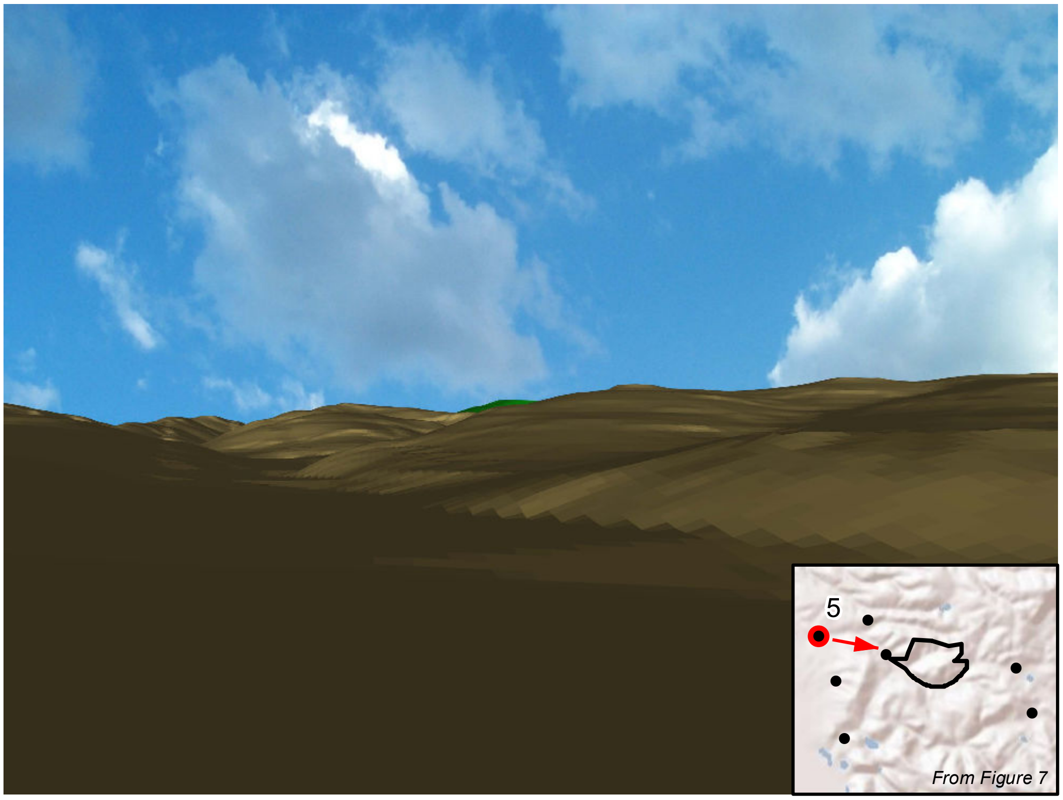


Viewpoint 4

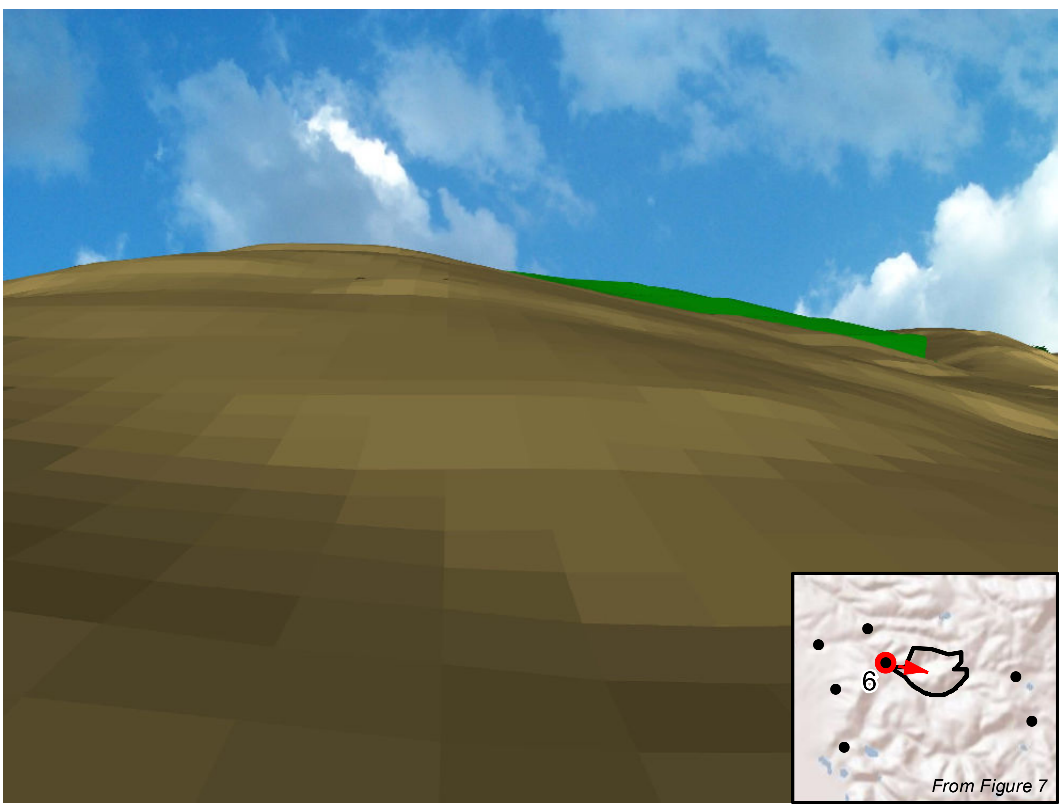
Source: L&A 2012.

Figure 7b. Viewpoints 3 and 4

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Viewpoint 5

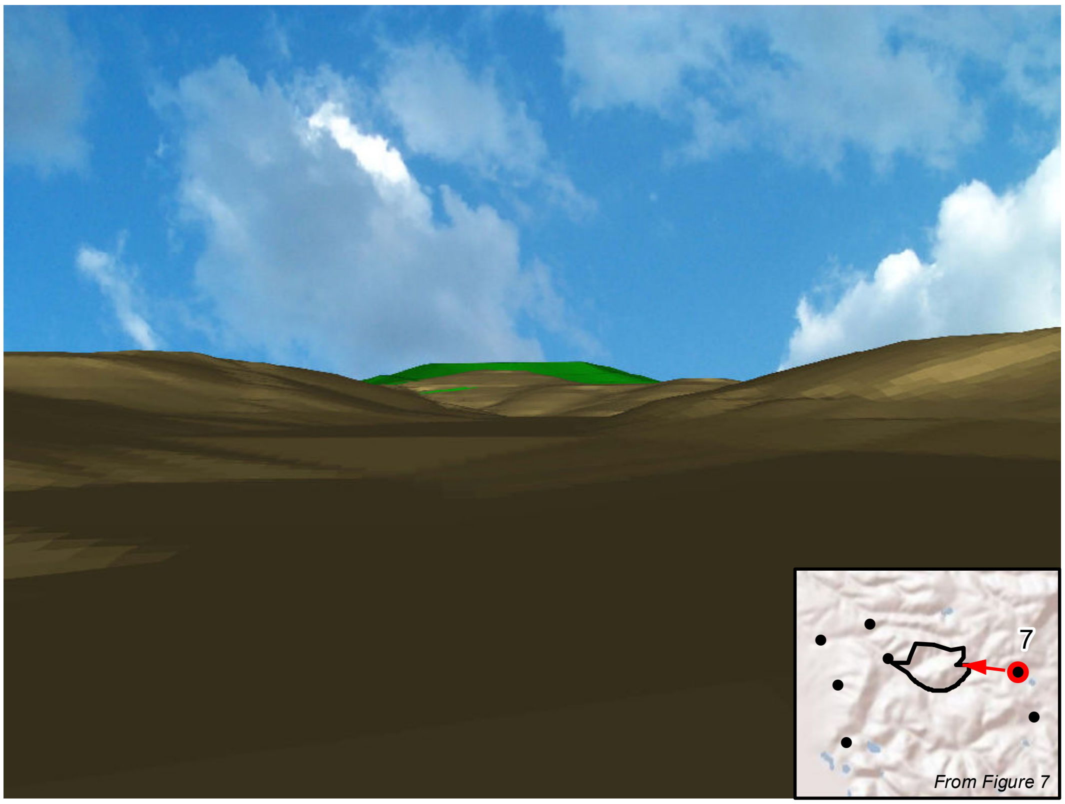


Viewpoint 6

Source: L&A 2012.

Figure 7c. Viewpoints 5 and 6

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Viewpoint 7

Source: L&A 2012.

Figure 7d. Viewpoint 7

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

automatically activated at dusk. Existing operational hours would remain unchanged with implementation of the proposed project and no addition sources of light or glare would be introduced at the proposed project area.

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4.2 Agricultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use?				✓

4.2.1 Environmental Setting

The areas adjacent to the project area currently are designated as Agricultural Rangeland in the San Benito County General Plan. The California Department of Conservation Farmland Mapping and Monitoring Program "San Benito County Important Farmland 2010" map identifies the project area with a classification of "Urban and Built-Up Land" and is surrounded by "Grazing Land". No *Prime Farmland, Unique Farmland, or Farmland of Statewide Importance* or lands under Williamson Act contracts are present within the project area.

4.2.2 Regulatory Setting

4.2.2.1 Williamson Act

The California Land Conservation Act, otherwise known as the Williamson Act, was enacted by the State Legislature in 1965 as a means of preserving California's prime agricultural lands from urbanization. Prime farmland under the Williamson Act includes land that qualifies as Class I and II under the NRCS classification of land. The Williamson Act involves voluntary contracts between landowners and a city or county in which they agree to retain their lands in agriculture or other open space uses for a minimum of ten years. In return for entering into this contract, the landowners receive property tax relief on the lands under contract. This relief is provided through the assessment of the lands based upon their income-producing value rather than their market value, which may be considerably higher. The contracts have ten-year terms, which are automatically renewed each year on a common anniversary date of January 1st unless they are cancelled or notice of non-renewal is given. If either party to a contract gives notice of nonrenewal, the non-renewal process begins on the following anniversary with nine years remaining. During the remaining term of the contract after notice of non-renewal has been given, the property taxes increase gradually according to a formula that eventually brings them up to the same level as non-Williamson Act lands.

Currently, approximately 70 percent of the state's prime agricultural land is protected under this Act. Within San Benito County, approximately 583,263 acres are currently under Williamson Act contracts (Department of Conservation, 2010).

San Benito County General Plan

The San Benito County General Plan includes the following policies regarding consideration of agricultural resources:

Land Use Element

Policy 3 Grade 1 soils as defined in the Soils Survey of San Benito County shall be the highest priority for the protection of soil resources.

Policy 4 Development proposals adjacent to Grade 1 agricultural lands and soils suitable for the production of row crops, flowers, or orchards shall be required to mitigate potential land use conflicts with agricultural operations.

Open Space and Conservation Element

Policy 23 Avoid land use conflicts
The County policy should be to assign compatible land uses adjacent to agricultural lands and selected mineral resource lands to ensure their protection. The County should encourage the use of the Williamson Act, as well as agricultural zoning and other legislative means to preserve large agricultural open space areas.

Policy 25 Legislative methods to protect agriculture and rural identity
It is the County's policy to use the Williamson Act, agricultural zoning, and legislative means, where appropriate, to preserve agricultural resources, maintain a rural identity, and to define and shape the urban form. Residential growth should be directed to where services are already provided and to the least productive agricultural lands.

4.2.3 Methods and Significance Criteria

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and other performance standards recognized by San Benito County. Appendix G of CEQA Guidelines (Environmental Checklist Form) identifies the following issues for consideration in the evaluation of agricultural resources:

- Conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use;
- Conflict with existing zoning for agricultural use, or a Williamson Act Contract; and/or
- Involve other changes in the existing environment, which due to their location or nature, could result in conversion of Farmland to non-agricultural use.

4.2.4 Potential Environmental Effects

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

No Impact. The proposed project includes the vertical and lateral expansion of lands designated as Agriculture. No agricultural lands (including *Prime Farmland, Unique Farmland, or Farmland of Statewide Importance)* would be affected by the project.

b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Impact. Although the lateral expansion would involve the expansion of the landfill approximately 100 feet east, closer to existing agricultural lands, the proposed project would not require the acquisition and/or conversion of lands used for agricultural purposes, nor would the proposed project conflict with a Williamson Act contract parcel. It should be noted that the proposed lateral expansion would also involve an approximate 400-foot shift to the south of the existing landfill; however, lands south of the project area are County-owned and not utilized for agricultural purposes.

c) *Would the project involve other changes in the existing environment, which due to their location or nature, could result in conversion of Farmland to non-agricultural use?*

No Impact. No Farmland is present within the project area, and the project would not result in or create a situation that would contribute to conversion of farmland to a non-agricultural use.

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4.3 Air Quality and Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			✓	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			✓	
c) Result in a 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)?			✓	
d) Expose sensitive receptors to substantial pollutant concentrations?			✓	
e) Create objectionable odors affecting a substantial number of people?			✓	
f) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

4.3.1 Environmental Setting

The proposed project site is located in the North Central Coast Air Basin (NCCAB). The NCCAB includes Monterey, Santa Cruz and San Benito Counties. The basin lies along the central coast of California and covers an area of 5,159 square miles. The northwest sector of the basin is dominated by the Santa Cruz Mountains. The Diablo Range marks the northeastern boundary, and together with the southern extent of the Santa Cruz Mountains forms the Santa Clara Valley which extends into the northeastern tip of the Basin. Farther south, the Santa Clara Valley evolves into the San Benito Valley which runs northwest-southeast and has the Gabilan Range as its western boundary. To the west of the Gabilan Range is the Salinas Valley, which extends from Salinas at its northwestern end to King City at its southeastern end. The western side of the Salinas Valley is formed by the Sierra de Salinas, which also forms the eastern side of the smaller

Carmel Valley. The coastal Santa Lucia Range defines the western side of the Carmel Valley.

Hollister, at the northern end of the San Benito Valley, experiences west winds nearly one-third of the time. The prevailing air flow during the summer months probably originates in the Monterey Bay area and enters the northern end of the San Benito Valley through the air gap through the Gabilan Range occupied by the Pajaro River. In addition, a northwesterly air flow frequently transports pollutants into the San Benito Valley from the Santa Clara Valley.

4.3.1.1 Air Quality Monitoring

The following tables present air quality monitoring data for four pollutants: ozone, CO, PM_{10}, and $PM_{2.5}$. **Tables 4, 5, 6 and 7** presents monitoring data for ozone, CO, PM_{10} and $PM_{2.5}$, respectively. With the exception of CO, the data presented in these tables are for monitoring stations in San Benito County. Because no CO monitoring data are available for stations in San Benito County, data for the nearest station (Salinas) are shown. Data for the latest three-year period (2008 through 2010) are presented.

Table 4. Ozone Air Quality Monitoring Results

Pollutant Type, Station and Measurement	Pollutant Concentration by Year			
	Air Quality Standard	2008	2009	2010
Ozone at Hollister – Fairview Road Station				
Highest 1-Hour Average (parts per million)	0.09	0.090	0.093	0.087
Second Highest 1-Hour Average (parts per million)	(State)	0.087	0.082	0.087
Highest 8-Hour Average (parts per million)	0.07	0.073	0.074	0.078
Second Highest 8-Hour Average (parts per million)	(State)	0.071	0.073	0.077
Source: California Air Resources Board website: http://www.arb.ca.gov				

Table 5. Carbon Monoxide Air Quality Monitoring Results

Pollutant Type, Station and Measurement	Pollutant Concentration by Year			
	Air Quality Standard	2008	2009	2010
Carbon Monoxide at Salinas #3 Station				
Highest 8-Hour Average (parts per million)	9	0.89	0.90	0.76
Second Highest 8-Hour Average (parts per million)	(State)	0.80	0.85	0.76
Note: No carbon monoxide monitoring data are available for stations within San Benito County Source: California Air Resources Board website: http://www.arb.ca.gov				

Table 6. PM_{10} Air Quality Monitoring Results				
Pollutant Type, Station and Measurement	**Pollutant Concentration by Year**			
	Air Quality Standard	**2008**	**2009**	**2010**
Inhalable Particulate Matter (PM_{10}) at Hollister – Fairview Road Station				
Highest 24-Hour Average (micrograms/cubic meter)	50	40.0	38.0	34.0
Second Highest 24-Hour Average (micrograms/cubic meter)	(State)	38.0	30.0	31.0
Annual Average (micrograms/cubic meter)	20	19.7	--	13.4
	(State)			
Note: Dashes ("--") indicate insufficient data or no data are available. Source: California Air Resources Board website: http://www.arb.ca.gov				

Table 7. $PM_{2.5}$ Air Quality Monitoring Results				
Pollutant Type, Station and Measurement	**Pollutant Concentration by Year**			
	Air Quality Standard	**2008**	**2009**	**2010**
Fine Particulate Matter ($PM_{2.5}$) at Hollister – Fairview Road Station				
Highest 24-Hour Average (micrograms/cubic meter)	35	22.7	17.3	24.7
Second Highest 24-Hour Average (micrograms/cubic meter)	(Federal)	16.3	15.5	19.2
Annual Average (micrograms/cubic meter)	12	6.9	5.4	5.7
	(State)			
Note: Dashes ("--") indicate insufficient data or no data are available. Source: California Air Resources Board website: http://www.arb.ca.gov				

4.3.1.2 Attainment Designations

The current air quality attainment designations for San Benito County are summarized in **Table 8**. As shown in **Table 8**, San Benito County is designated nonattainment for the state ozone standard. The County is designated attainment for the federal eight-hour ozone standard. San Benito County is designated nonattainment for the state PM_{10} standard.

San Benito County is designated either attainment or unclassified for the remaining federal and state air quality standards.

Table 8. Air Quality Attainment Status Designations for San Benito County

Pollutant	Federal Standard	State Standard
Ozone	Attainment	Nonattainment (Moderate)
Carbon Monoxide	Attainment	Unclassified
Nitrogen Dioxide	Attainment	Attainment
Inhalable Particulate Matter (PM_{10})	Attainment	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Unclassified / Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment

Source: California Air Resources Board (http://www.arb.ca.gov)

4.3.1.3 Emissions Inventory

Table 9 presents estimates of emissions currently generated in San Benito County. The information presented in **Table 9** is divided into emission source categories.

The major source category that generates the largest amounts of ROG emissions in San Benito County is Miscellaneous Processes. The largest subcategories within this category are Managed Burning and Disposal, and Farming Operations.

The major source category that generates the largest amounts of CO, PM_{10}, and $PM_{2.5}$ emissions in San Benito County is Miscellaneous Processes. For CO and $PM_{2.5}$, the largest subcategory within this category is Managed Burning and Disposal. For PM_{10}, the largest subcategory is Unpaved Road Dust.

The category that generates the largest amounts of NO_x emissions in San Benito County is On-Road Motor Vehicles.

Table 9. San Benito County Emissions Inventory for 2008

Emission Category	Reactive Organic Gases	Carbon Monoxide	Nitrogen Oxides	Inhalable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Fuel Combustion	0.03	0.19	0.86	0.04	0.04
Waste Disposal	0.11	0.00	0.00	0.00	0.00
Cleaning & Surface Coatings	0.22	0.00	0.00	0.02	0.02
Petroleum Production & Marketing	0.22	0.00	0.00	0.00	0.00
Industrial Processes	0.17	0.13	0.02	1.20	0.23
Solvent Evaporation	1.24	0.00	0.00	0.00	0.00
Miscellaneous Processes	3.38	44.98	1.48	14.89	5.64
On-Road Motor Vehicles	1.71	15.09	9.77	0.40	0.33
Other Mobile Sources	0.88	5.08	1.43	0.08	0.08
Total	7.98	65.50	13.57	16.65	6.35

Notes: 2008 is the latest inventory available from the California Air Resources Board (CARB).
All values are in tons per day.
The sum of values may not equal total shown due to rounding.
Dashes ("--") indicate no data are available.
Source: CARB website: http://arb.ca.gov

4.3.1.4 Gas Collection Onsite

The JSRL's existing gas collection system is comprised of 32 landfill gas extraction wells. To accommodate the proposed vertical expansion, 10 additional vertical extraction wells would be required within the Module 1 footprint and three extraction wells would be installed in Module 2. The extraction wells in Module 1 would be installed on the top deck or near benches, while Module 2 extraction wells would be installed near benches outside of the active fill areas (SCS Engineers, 2011). The wells for the remaining landfill are not shown on **Figure 5** but will be designed, constructed and operated as waste filling progresses. Typically one vertical well per every two acres is required.

4.3.1.5 Odor Control Processes

The landfill operator evaluates on-site odors and evaluates operations for potential release of objectionable odors on a daily basis (SWT Engineering, 2009). Best Management Practices and good housekeeping measures are implemented to minimize the release of objectionable odors (e.g., clearing spilled materials between piles, eliminating areas where water could pond, load checking, and maintaining reasonably sized stockpiles of feedstock of chipped and ground material).

If objectionable on-site odors are detected, the operator would implement the following protocol:

1. Investigate and determine the likely source of the odor.

2. Determine if on-site management practice could remedy the problem and immediately take steps to remedy the situation.
3. Determine whether or not the odor is traveling beyond the site by patrolling the site perimeter and noting existing wind patterns.
4. Determine whether or not the odor is significant enough to warrant contacting the adjacent neighbors and/or the Local Enforcement Agency (LEA).

In the event that a complaint is received, a landfill operator's representative would:

1. Go to the location of the complaint to verify that the site is indeed responsible for the odor.
2. Investigate the nature of the source of the odor complaint and implement operational changes to minimize odors.
3. If warranted, meet with the LEA and complainant (if known and choosing to participate) within a reasonable time frame to discuss the nature of the source of the odor and operational changes proposed and/or implemented.
4. Document the complaint(s), including the nature of the complaint and actions taken to minimize odors in the future.

4.3.1.6 Greenhouse Gas Emissions

Assembly Bill 32, adopted in 2006, established the Global Warming Solutions Act of 2006 which requires the State to reduce greenhouse gases (GHGs) to 1990 levels by 2020. Senate Bill 97, adopted in 2007, requires the Governor's Office of Planning and Research (OPR) to develop draft CEQA guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for addressing greenhouse gas emissions, as required by Senate Bill 97. The amendments became effective on March 18, 2010.

Relatively recently, global climate change, also known as global warming, has been recognized as an important environmental issue. Documented impacts of climate change include rising sea levels, glacier retreat, shortening of frost seasons, and increases in precipitation, among other events. Climate change is considered to be heavily influenced by the rising concentration of GHG emissions, primarily atmospheric CO_2, CH_4, and nitrous oxide (N_2O). Burning of fossil fuels, including oil, natural gas, gasoline and coal, is a major contributor to rising GHG levels.

4.3.1.7 Carbon Sequestration

The landfilling process typically emits some CO_2 and CH_4. When municipal solid wastes are buried in a landfill, a series of biochemical reactions occur in which anaerobic microorganisms decompose a portion of the organic wastes to CO_2 and CH_4, while the remainder does not appreciably degrade and is considered to be sequestered or stored. The CH_4 and CO_2 produced by the landfill may be collected and flared or converted to energy, which oxidizes the CH_4 to CO_2 emitted in the flare exhaust to the atmosphere. The CH_4 can also be oxidized to CO_2 by bacteria in the landfill cover soil. Therefore, the ultimate fate of carbon placed in the landfill is sequestering or in emissions as CH_4 or CO_2.

Management and treatment of waste ultimately leads to management of the method by which the carbon will be released back into the environment: similarly changing the climate impacts on the way waste will need to be stored, treated, and disposed.

The California Greenhouse Gas Emissions Inventory developed by the California Air Resources Board (CARB, April 2012) indicates that the statewide emissions of carbon dioxide equivalents (CO2E) were 457 million metric tons in 2009. Solid waste disposal (i.e., landfilling) accounted for approximately 1.6% of the total CO2E emissions (6.69 CO2E). This is a reduction from earlier estimates where landfills were considered to account for as much as 4% of the statewide total. Other sources or industries contributing to this statewide total include: (1) energy industries (121.4 million metric tons or 22.9%); (2) transportation (172.9 million metric tons or 37.9%); (3) commercial and industrial processes (103.6 million metric tons or 22.6%); and (4) agriculture and forestry (32.3 million metric tons or 7.04%) (CARB, 2012).

Landfills have shown a reduction in emissions in the California statewide GHG inventory since the 1990 baseline year. Solid waste disposal emissions were 7.41 million metric tons of CO2E in 1990, and as described in the 2012 inventory developed by CARB, solid waste disposal emission were 6.69 CO2E. This is due to improved practices in landfill gas collection since that time and despite the fact that refuse disposal in landfills has increased over this same time period. Furthermore, currently and since 1998, if carbon sequestration is considered for landfills, the amount of carbon sequestered each year can offset the net methane emissions from landfills as detailed in the U.S. EPA's Inventory of Greenhouse Gas Emissions and Sinks, 1990-2005 (USEPA, 2006).

Finally, a noticeable fraction of the carbon in landfilled newspaper, wood materials, yard waste, and other carbon sources is never released, but remains sequestered indefinitely in the landfill. The inclusion of carbon sequestration in GHG emissions accounting and GHG inventories has been a subject of frequent discussion in several published papers since 1990. There is, however, a high degree of uncertainty with respect to methods available for analyzing carbon sequestration in landfills, and there is no universal acceptance regarding whether estimated sequestered carbon should be included as sinks in GHG emissions inventories regardless of the GHG emission accounting method employed. However, a number of international and domestic protocols including the Intergovernmental Panel on Climate Change (IPCC), the USEPA, the Oregon Climate Trust, and the California Climate Action Registry recognize carbon storage in landfilled material as a sink in calculating carbon emissions inventories. In light of the ongoing discussion and the studies and investigations performed, carbon sequestration in landfills should be considered and included in inventories to the extent it is feasible to do so.

In addition, the amount of LFG collected by an active or passive LFG system (i.e., collection efficiency) and the percent oxidation of the remaining CH_4 in the landfill cover soils are also important parameters that must be accurately accounted for in a landfill GHG inventory. However, the uncertainty and technical disagreement among experts associated with all of these factors makes it extremely difficult to accurately estimate GHG emissions from landfills in a way that will be universally accepted and recognized.

4.3.1.8 Emission Reduction Measures

The decomposition of waste in landfills generates LFG. Landfill gases include CO_2 and CH_4. Both of these gases have been associated with global climate change. The gases associated with global climate change are collectively referred to as greenhouse gases (GHG). To reduce the potential impact of the proposed project on global climate change, several measures and practices have been incorporated into the proposed project (see **Section 3** of this Initial Study). These measures have been drawn from the CalRecycle (formerly known as the California Integrated Waste Management Board) document, *Technologies and Management Options for Reducing Greenhouse Gas Emissions from Landfills* (California Integrated Waste Management Board, 2008).

The following is a listing of the GHG emission reduction compliance measures included in the proposed project. The listing includes the measure number from California Integrated Waste Management Board 2008, the name of the measure, and a very brief description. A more detailed description of each measure is provided in the CalRecycle document.

1. **Measure A-2: Tighter spacing of LFG wells.** Vertical wells are closely spaced to increase the overlap of the radius of influence (ROI). Conservative assumptions should be made during the design of collection systems. Tighter spacing can be employed on a limited basis to ascertain success.

2. **Measure A-4: Connection of leachate collection and removal system (LCRS) layer to gas collection and control system (GCCS).** The LCRS is connected to the GCCS to collect LFG along the bottom of the landfill. The high side of the LCRS is connected to the GCCS to prevent blockage. The LCRS may be monitored for gas quality to determine when vacuum should be applied.

3. **Measure A-6: Maximize borehole and well diameters.** Pipe diameters of 4” or 6” are used for wells, with larger diameters if high LFG production is expected. This is feasible for the construction of all vertical well systems. Err conservatively and select the largest diameter.

4. **Measure A-7: Enhance seals on LFG wells and boreholes.** Improved seals allow more vacuum to be applied to LFG wells. At least 2 seals are recommended for wells. Alternate seals are recommended in arid regions where bentonite seals can crack.

5. **Measure A-9: Best management practice (BMP) for LFG System Piping.** System piping is designed so it does not limit LFG flow. This is feasible for all LFG systems, but specific elements must be chosen on a site-specific basis. This should be implemented after an engineering review and should use conservative assumptions.

6. **Measure B-2: Redundant flare station equipment.** Spare equipment is available, resulting in less downtime. A good supply of spare parts, possibly including low quality replacements for expensive parts, should be available.

7. **Measure B-3: Maximize capacity of gas mover equipment.** The blower system is designed so it does not limit the gas collection. More uncertainty in the LFG generation requires sizing the blower higher on the performance curve. Evaluate performance of several units and include the manufacturers' representative in the selection process.

8. **Measure B-4: Maximum Capacity of Gas Control Equipment.** Increases flare capacity and destruction efficiency, typically by increasing the flare size. It is feasible to require that manufacturers use a 6:1 turndown ratio. Rather than using large flares, multiple smaller flares can be used. There are two approaches: (1) Install the largest flare with the highest turndown. (2) Install multiple small flares.

9. **Measure C-2: LFG Master Planning.** Implementation of a LFG Master Plan for long term gas management planning. This should be implemented with certain minimum requirements outlined in the body of the report, but those minimum requirements should be exceeded where possible.

10. **Measure C-3: Energy Recovery from LFG.** LFG is combusted for energy, displacing fossil-fuel use. This is recommended for implementation at landfill where project can be shown to be economically viable.

11. **Measure D-1: Cover LCRS layer.** The LCRS layer is covered with waste as timely as possible. Cover the LCRS with at least 20 feet of waste when possible.

12. **Measure D-3: Designing for closure and post-closure.** Closure design operations take LFG into consideration. The landfill operator should develop a comprehensive operations and maintenance (O&M) plan for the LFG system when closing a landfill.

13. **Measure D-4: Promote deeper landfills.** Deeper landfills are allowed without requiring a larger footprint. Landfill heights are limited due to visibility; top deck size becomes a limiting factor. Landfills could be evaluated to determine optimum geometry.

14. **Measure D-7: Modify, limit or remove intermediate cover systems.** Remove daily and intermediate cover to create more uniform gas flow through the landfill. This is technically feasible and can be done by removing daily cover in the morning or by the use of ADC such as tarps. Implementation could be accomplished by bulldozers and scrapers.

4.3.1.9 Emissions Inventory

Table 10 presents forecasts of emissions generated in San Benito County in the year 2020. This forecast is the most distant future forecast available from the CARB. The pattern of emissions described immediately above for the current emissions inventory also applies to the forecast of 2020 emissions.

Table 10. San Benito County Emissions Forecast for 2020

Emission Category	Reactive Organic Gases	Carbon Monoxide	Nitrogen Oxides	Inhalable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Fuel Combustion	0.02	0.18	0.86	0.04	0.04
Waste Disposal	0.13	0.00	0.00	0.00	0.00
Cleaning and Surface Coatings	0.26	0.00	0.00	0.03	0.03
Petroleum Production and Marketing	0.24	0.00	0.00	0.00	0.00
Industrial Processes	0.20	0.20	0.02	1.36	0.25
Solvent Evaporation	1.31	0.00	0.00	0.00	0.00
Miscellaneous Processes	3.51	47.72	1.56	15.88	5.98
On-Road Motor Vehicles	0.82	6.69	3.46	0.20	0.14
Other Mobile Sources	0.89	5.86	0.72	0.04	0.03
County Total	**7.39**	**60.65**	**6.62**	**17.55**	**6.48**

Notes: 2020 is the furthest horizon year available from the California Air Resources Board (CARB).
All values are in tons per day. Dashes ("- -") indicate no data are available.
The sum of values may not equal total shown due to rounding.
Source: CARB website: http://arb.ca.gov and KD Anderson & Associates, 2012.

Table 11 presents estimates of GHG emissions generated in California during the years 2000 through 2008. Estimates of GHG emissions disaggregated to the county level are not currently available. The data are expressed as "million tonnes of CO_2 equivalent" per year. One tonne is sometimes referred to as a "metric ton", and is equal to 2,204.6 pounds.

While CO_2 is the most common component of GHG, several different compounds are components of overall GHG. The different compounds contribute to climate change with varying intensities. The term "CO_2 equivalent" refers to a weighted composite of these several compounds, expressed as the equivalent amount of CO_2.

As shown in **Table 11**, Transportation, Electric Power, and Industrial activities are the largest sources of GHG emissions in California.

Table 11. California Greenhouse Gas Inventory for 2000 – 2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Transportation	171.13	173.71	180.36	178.03	181.71	184.32	184.11	183.84	174.99
Electric Power	103.92	120.62	106.49	109.89	119.96	110.98	107.66	111.10	116.35
Commercial and Residential	42.93	41.02	43.79	41.38	42.54	40.79	41.47	41.83	43.13
Industrial[1]	97.27	94.70	96.73	96.14	90.87	90.72	90.47	93.82	92.66
Recycling and Waste[2,3]	6.20	6.28	6.21	6.29	6.23	6.52	6.59	6.53	6.71
High GWP	10.95	11.34	11.97	12.75	13.57	14.23	14.92	15.27	15.65
Agriculture[4]	25.44	25.37	28.42	28.49	28.82	28.99	29.90	28.26	28.06
Forestry	0.19	0.19	o.19	0.19	0.19	0.19	0.19	0.19	0.19
Total Gross Emissions	458.03	473.23	474.15	473.15	483.88	476.73	475.31	480.85	477.74
Forestry Net Emissions	-4.72	-4.53	-4.40	-4.33	-4.32	-4.17	-4.04	-4.07	-3.98
Total Net Emissions	453.31	468.69	469.75	468.82	479.56	472.56	471.27	476.77	473.76

1 Reflects emissions from combustion of natural gas, diesel, and lease fuels plus fugitive emissions from oil and gas extractions.
2 Landfills and semi-conductor manufacturing are listed in the Industrial sector of CARB's GHG Emission Inventory sectors.
3 Electric grid losses are listed in the Electric Power sector of CARB's GHG Emission Inventory sectors.
4 Reflects use of updated USEPA models for determining emissions from livestock and fertilizers.
Source: KDA, 2012

Table 12 presents estimates of GHG emissions generated in California during the years 2008 through 2020. Estimates of GHG emissions disaggregated to San Benito County are not currently available. The data are expressed as "million tonnes of CO_2 equivalent" per year.

Table 12. California Greenhouse Gas Emissions Forecast (2008 – 2020)													
Category	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Total Narrow Scope (Capped)	174.54	168.54	166.26	165.84	165.85	167.26	168.07	168.84	169.63	170.40	171.10	171.82	172.57
Electricity Generation (Capped)	43.82	40.85	39.47	38.89	38.65	39.70	40.44	41.18	41.93	42.67	43.37	44.08	44.82
Imported Electricity (Capped)	55.03	53.53	53.53	53.53	53.53	53.53	53.53	53.53	53.53	53.53	53.53	53.53	53.53
Industrial (Capped)	75.69	74.15	73.26	73.42	73.66	74.03	74.10	74.12	74.17	74.20	74.20	74.21	74.21
Added Broad Scope Fuels (Capped)	228.61	219.07	222.92	222.10	226.73	232.87	236.49	237.87	237.26	237.21	236.88	236.59	236.28
Total (Capped)	403.15	387.60	389.18	387.94	392.58	400.14	404.56	406.71	406.89	407.61	407.99	408.41	408.84
Total (Uncapped)	71.49	70.05	72.86	75.29	77.80	80.26	82.79	85.30	87.77	90.28	92.78	95.35	97.94
Grand Total	474.64	457.65	462.04	463.23	460.37	480.40	487.35	492.01	494.66	497.88	500.76	503.76	506.78
Source: KD Anderson & Associates, 2012.													

4.3.2 Regulatory Setting

Air Pollutant Sources and Ambient Air Quality

Both the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for common pollutants. These ambient air quality standards indicate levels of contaminants that represent safe levels, to avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The federal and state ambient air quality standards are presented in **Table 13**. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes attempted to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is true for ozone and particulate matter less than 10 microns in mean diameter (PM_{10}), also referred to as respirable particulate matter, and particulate matter less than 2.5 microns in mean diameter ($PM_{2.5}$), also referred to as fine particulate matter.

There are three basic designation categories: nonattainment, attainment, and unclassified. A "nonattainment" designation indicates that the air quality violates an ambient air quality standard. Although a number of areas may be designated as nonattainment for a particular pollutant, the severity of the problem can vary greatly. To identify the severity of the problem and the extent of planning required, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe). In contrast to nonattainment, an "attainment" designation indicates that the air quality does not violate the established standard. Finally, an "unclassified" designation indicates that there are insufficient data for determining attainment or nonattainment. EPA combines unclassified and attainment into one designation for ozone, carbon monoxide (CO), PM_{10} and $PM_{2.5}$.

Criteria Pollutants of Concern

Criteria pollutants that are of greatest concern for the proposed project are CO, ozone, and particulate matter. Ozone is a pollutant created in the atmosphere through the combination of two "precursors", reactive organic gases (ROG) and nitrogen oxides (NO_x), in the presence of sunlight.

Carbon Monoxide

State and federal CO standards have been set for both one-hour and eight-hour averaging times. The state one-hour standard is 20 parts per million (ppm) by volume, while the federal one-hour standard is 35 ppm. Both state and federal standards are 9 ppm for the eight-hour averaging period. CO is a public health concern because it combines readily with hemoglobin and thus reduces the amount of oxygen transported in the bloodstream.

Motor vehicles are the dominant source of CO emissions in most areas. High CO levels develop primarily during winter when periods of light winds combine with the formation of ground level temperature inversions (typically from the evening through early morning). These conditions result in reduced dispersion of vehicle emissions. Motor vehicles also increase CO emission rates at low air temperatures.

Ozone

Ozone is not emitted directly into the air, but is formed by a photochemical reaction in the atmosphere. Ozone precursors, which include ROG and NO_x, react in the atmosphere in the presence of sunlight to form ozone. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, ozone is primarily a summer air pollution problem. Ozone is a respiratory irritant and an oxidant that increases susceptibility to respiratory infections and can cause substantial damage to vegetation and other materials. Once formed, ozone remains in the atmosphere for one or two days. It is then eliminated through chemical reaction with plants and by rainout and washout.

Particulate Matter

PM_{10} and $PM_{2.5}$ can reach the lungs when inhaled, resulting in health concerns related to respiratory disease. Suspended particulate matter can also affect vision or contribute to eye irritation. PM_{10} can remain in the atmosphere for up to seven days before removal by gravitational settling, rainout and washout.

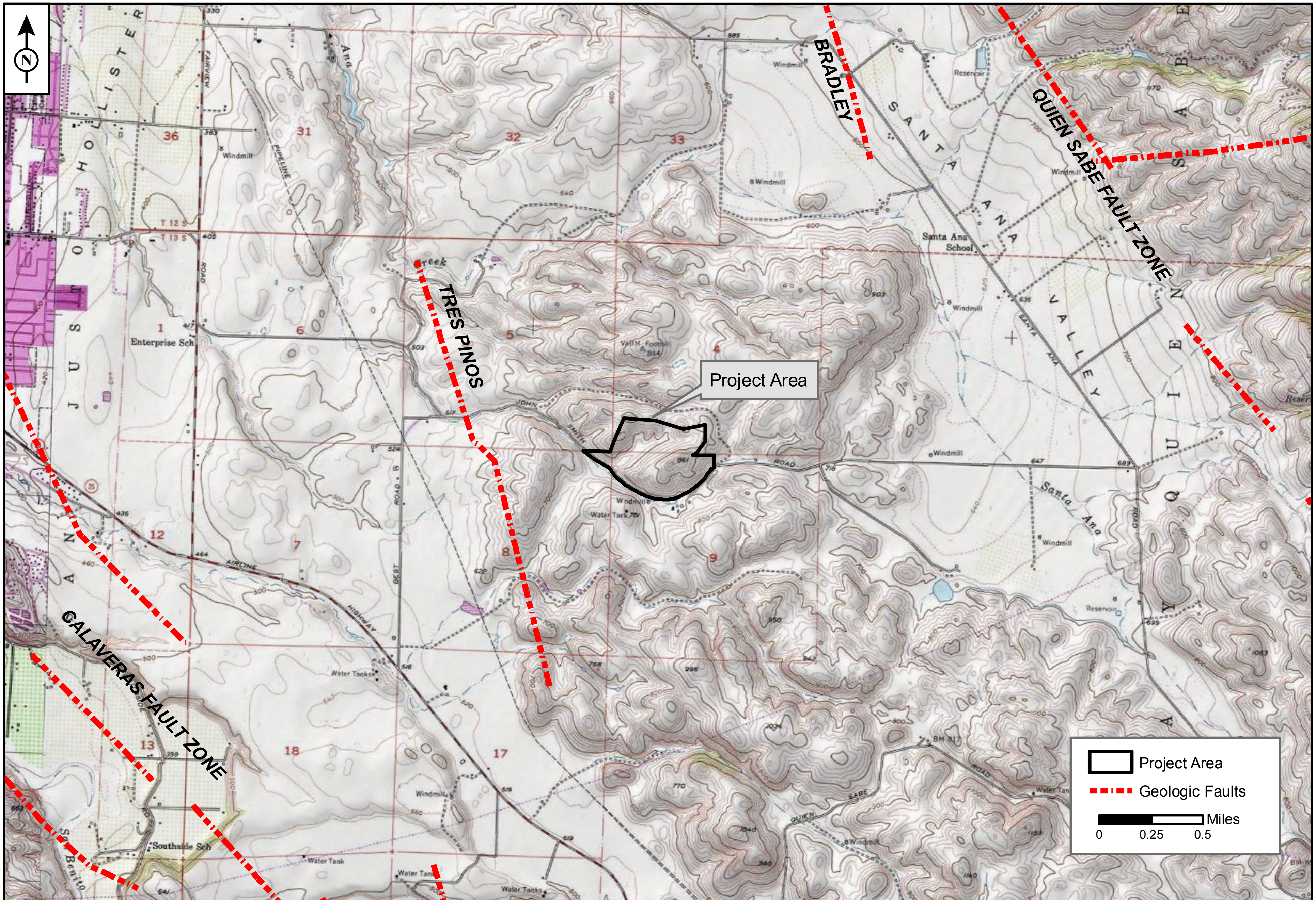
State and federal standards for particulate matter are based on micrograms per cubic meter ($\mu g/m^3$) for a 24-hour average and as an annual geometric mean. The state standards for PM_{10} are 50 $\mu g/m^3$ 24-hour average, and 20 $\mu g/m^3$ annual geometric mean. The federal PM_{10} standard is a 24-hour average of 150 $\mu g/m^3$.

A federal standard for $PM_{2.5}$ was issued in July 1997 by Executive Order of the President. $PM_{2.5}$ is sometimes referred to as "fine particulate matter". The $PM_{2.5}$ standard has been set at a concentration of 15 $\mu g/m^3$ annually and 65 $\mu g/m^3$ daily. The federal standards for PM_{10} are being maintained so that relatively larger, courser particulate matter continues to be regulated. The state $PM_{2.5}$ standard is an annual average of 12 $\mu g/m^3$.

Naturally Occurring Asbestos (NOA)

The nearest area of naturally occurring asbestos (NOA) to the proposed project site that is more likely to contain NOA is located approximately 16 miles away.

There are no known deposits of NOA at the project site; however, NOA is known to occur along fault lines, of which there are several located in the project vicinity, including the San Andreas, Quien Sabe, Calaveras and small segments of the Tres Pinos faults (see **Figure 8**). The San Andreas fault passes through the Gabilan Mountains about six miles to the southwest of the project site. The Calaveras fault is located approximately three miles west of the project site. The Quien Sabe fault crosses the edge of the Hollister Valley at the base of the Diablo Range about 1.5 miles to the northeast. The Tres Pinos fault crosses the southern edge of the Hollister Valley, with several splays extending out into the valley, is the closest at approximately 1.2 miles south-southwest of the project site.



Source: ESP 2012, ESRI 2012, L&A 2012.

Figure 8. Geologic Faults in the Vicinity

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

Additionally, the County is home to one of the largest NOA deposits located at the Clear Creek Management Area approximately 50 miles southeast of the project site within San Benito County.

Asbestos is a term used for several types of naturally occurring fibrous minerals found in many parts of California. The most common type of asbestos is chrysotile, but other types are also found in California.

When rock containing asbestos is broken or crushed, asbestos fibers may be released and become airborne. Exposure to asbestos fibers may result in health issues such as lung cancer, mesothelioma (a rare cancer of the thin membranes lining the lungs, chest and abdominal cavity), and asbestosis (a non-cancerous lung disease which causes scarring of the lungs). Sources of asbestos emissions include: unpaved roads or driveways surfaced with ultramafic rock, construction activities in ultramafic rock deposits, or rock quarrying activities where ultramafic rock is present.

Ambient Air Quality Standards

Applicable Federal and State standards for each regulated pollution category is provided in **Table 13**.

Table 13. Federal and State Air Quality Standards			
Pollutant	**Averaging Time**	**Federal Standard**	**State Standard**
Ozone	1-Hour	--	0.09 ppm
	8-Hour	0.07 ppm	--
Carbon Monoxide	1-Hour	35.0 ppm	20.0 ppm
	8-Hour	9.0 ppm	9.0 ppm
Nitrogen Dioxide	Annual	53 ppb	0.03 ppm
	1-Hour	100 ppb	0.18 ppm
Sulfur Dioxide	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	75 ppb	0.25 ppm
PM_{10}	24-Hour	150 µg/m^3	50 µg/m^3
$PM_{2.5}$	Annual	15 µg/m^3	12 µg/m^3
	24-Hour	35 µg/m^3	--
Lead	30-Day Avg. Month Average	-- 1.5 µg/m^3	1.5 µg/m^3 --

ppm = parts per million
ppb = parts per billion
µg/m^3 = Micrograms per Cubic Meter
Source: California Air Resources Board, February 7, 2012

Federal Standards

The 1977 Federal Clean Air Act (CAA) required the EPA to identify National Ambient Air Quality Standards (NAAQS) to protect public health and welfare. NAAQS have been established for the six criteria air pollutants. (These are included in **Table 13**.)

Pursuant to the 1990 amendments to the Federal CAA, the EPA has classified air basins (or portions thereof) as either "attainment" or "non-attainment" for each criteria air pollutant, based on whether or not the NAAQS have been achieved. San Benito County is designated either attainment or unclassified for the federal air quality standards.

State Standards

In 1988, the State of California passed the California Clean Air Act (CCAA, State 1988 Statutes, Chapter 1568) that established more stringent State ambient air quality standards, and set forth a program for their achievement. The CARB implements State ambient air quality standards, as required in the CCAA, and cooperates with the Federal government in implementing pertinent federal requirements. Further, CARB has responsibility for reviewing and permitting stationary and mobile source air pollutant emissions throughout the state. Like its Federal counterpart, the CCAA designates areas as attainment or non-attainment, with respect to the state AAQS. Under the state AAQS and based on 2010 designations, San Benito County is designated nonattainment for the state PM_{10} standard due to air from Santa Clara County that settles at the Pinnacles National Monument. San Benito County is designated nonattainment for the state one-hour and eight-hour ozone standards. San Benito County is designated either attainment or unclassified for the remaining state air quality standards.

Local Standards

The Monterey Bay Unified Air Pollution Control District (MBUAPCD) is the primary local agency responsible for protecting human health and property from the harmful effects of air pollution in the County. MBUAPCD is required to establish and enforce air pollution control rules and regulations to attain and maintain all state and federal ambient air quality standards. The MBUAPCD regulates, permits, and inspects stationary sources of air pollution. Among these sources are industrial facilities, gasoline stations, auto body shops, and dry cleaners.

As required by the CCAA, the MBUAPCD adopted the *1991 Air Quality Management Plan (AQMP) for the Monterey Bay Region*. The 1991 AQMP addressed planning requirements to meet the ozone standard mandated by the CCAA and included measures to control emissions of volatile organic compounds (VOC) from stationary and mobile sources. Since the 1991 AQMP was adopted, control requirements have been reduced. The AQMP was most recently updated in 2008.

In December 1995, the MBUAPCD also prepared the *1995 Report on Attainment of the California Fine Particulate Standard in the Monterey Bay Region*. This report was most recently updated in 2005. The updated report identifies implementation measures to achieve ambient air quality standards and to reduce public exposure to particulate matter.

In accordance with federal CAA requirements, the MBUAPCD adopted the *2007 Federal Maintenance Plan for Maintaining the National Ozone Standard in the Monterey Bay Region*. The maintenance plan includes strategies for maintaining the NAAQS for ozone within the NCCAB. The federal CAA requires that projects receiving federal funds demonstrate conformity to the local AQMP. Consistency guidelines for the AQMP extend these requirements to all regionally significant projects, regardless of whether federal funding is being sought. Emission forecasts contained in the AQMP are based, in part, on population forecasts adopted by the Association of Monterey Bay Area Governments (AMBAG).

4.3.2.1 Greenhouse Gas Emissions Regulatory Setting

Plans, policies, regulations, and laws related to GHG have been developed during the last several years by federal, state, and local agencies. These mechanisms continue to develop. The following is a summary of these mechanisms.

Federal Plans, Policies, Regulations, and Laws Pertaining to Atmospheric Greenhouse Gases

The U.S. EPA is the federal agency responsible for implementing the Federal CAA. The U.S. Supreme Court ruled in Massachusetts v. EPA, 549 U.S. 497 (2007), that carbon dioxide (CO_2) is an air pollutant as defined under the CAA, and that EPA has the authority to regulate GHG emissions.

On April 17, 2009, the EPA issued a *Proposed Endangerment Finding* for GHG. The proposal finds that GHG as a group endanger public health and welfare, and that the emissions from mobile sources contribute to GHG concentrations in our atmosphere. Should the Proposed Endangerment Finding become final, EPA will have taken a significant step towards federal regulation of the suite of GHG, including CO_2, which contribute to global warming. The *Endangerment Findings* comes in direct response to the U.S. Supreme Court's 2007 decision in Massachusetts v. EPA.

State Plans, Policies, Regulations, and Laws Pertaining to Atmospheric Greenhouse Gases

CARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the CCAA, which was adopted in 1988.

Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term. Because every nation emits GHGs and therefore makes an incremental cumulative contribution to global climate change, cooperation on a global scale will be required to reduce the rate of GHG emissions to a level that can help to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

Assembly Bill 1493

Assembly Bill (AB) 1493 (Stats. 2002, ch. 200) (amending Health & Safety Code, § 42823 and adding Health & Safety Code, § 43018.5), signed by the Governor in 2002, requires that CARB develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of greenhouse gases emitted by passenger vehicles and light duty trucks and other vehicles determined by ARB to be vehicles whose primary use is noncommercial personal transportation in the state."

To meet the requirements of AB 1493, in 2004 CARB approved amendments to the California Code of Regulations (CCR) adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 (13 CCR §§ 1900, 1961), and adoption of Section 1961.1 (13 CCR § 1961.1) require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty passenger vehicle weight classes (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily for the transportation of persons), beginning with the 2009 model year. Emissions limits are reduced further in each model year through 2016. In December 2004, a group of car dealerships, automobile manufacturers, and trade groups representing automobile manufacturers filed suit against CARB to prevent enforcement of 13 CCR Sections 1900 and 1961 as amended by AB 1493 and 13 CCR 1961.1 (*Central Valley Chrysler-Jeep et al. v. Catherine E. Witherspoon, in Her Official Capacity as Executive Director of the California Air Resources Board, et al.*). On June 14, 2011, U.S. EPA confirmed that CARB's amendments to its motor vehicle greenhouse gas emission standards are within the scope of the existing waiver of preemption issued by EPA in June 2009.

Executive Order S-3-05

Executive Order S-3-05, signed by the Governor in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total GHG emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

The Executive Order directed the Secretary of the California EPA to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The Secretary will also submit biannual reports to the governor and state legislature describing progress made toward reaching the emission targets; impacts of global warming on California's resources; and mitigation and adaptation plans to combat these impacts. To comply with the Executive Order, the Secretary of the CalEPA created the California Climate Action Team (CCAT) made up of members from various state agencies and commissions. CCAT released its first report in March 2006. The report proposed to achieve the targets by building on voluntary actions of California businesses, local government and community actions, as well as through state incentive and regulatory programs.

Assembly Bill 32, the California Climate Solutions Act of 2006

In September 2006, the Governor signed AB 32, the California Climate Solutions Act of 2006 (see Stats. 2006, ch. 488, enacting Health & Safety Code, §§ 38500– 38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction will be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012. To effectively implement the cap, AB 32 directs CARB to develop and implement regulations to reduce statewide GHG emissions from stationary sources. AB 32 specifies that regulations adopted in response to AB 1493 should be used to address GHG emissions from vehicles. However, AB 32 also includes language stating that if the AB 1493 regulations cannot be implemented, then CARB should develop new regulations to control vehicle GHG emissions under the authorization of AB 32.

AB 32 requires that CARB adopt a quantified cap on GHG emissions representing 1990 emissions levels and disclose how it arrives at the cap; institute a schedule to meet the emissions cap; and develop tracking, reporting, and enforcement mechanisms to ensure that the state achieves the reductions in GHG emissions necessary to meet the cap. AB 32 also includes guidance to institute emissions reductions in an economically efficient manner and conditions to ensure that businesses and consumers are not unfairly affected by the reductions.

AB 32 does not explicitly apply to emissions from land development, though emissions associated with land development projects are closely connected to the utilities, transportation, and commercial end-use sectors. Further, because AB 32 imposes a statewide emissions cap, land development-related emissions will ultimately factor into considerations of GHG emissions in the state.

In response to AB 32, CARB developed and, in December 2008, adopted the *Climate Change Scoping Plan – a Framework for Change* to achieve reductions in GHG emissions in California (California Air Resources Board 2008). The Scoping Plan indicates how reductions in substantial GHG sources would be achieved through regulations, market mechanisms, and other actions. More detailed information on AB 32 is available at the CARB internet website at http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm. The Scoping Plan indentifies CalRecycle (formerly known as the California Integrated Waste Management Board) as the lead in developing landfill and recycling-based solutions aimed at reducing GHG emissions. The Scoping Plan includes three "Recycling and Waste" (RW) measures:

- **RW-1 - Landfill Methane Control Measure.** The objective of this measure is to install new methane control systems at landfills currently without control systems. CARB approved a new regulation that reduces emissions of methane, a greenhouse gas, from MSW landfills. The regulation primarily requires owners and operators of certain uncontrolled MSW landfills to install gas collection and control systems, and requires existing and newly installed gas and control systems to operate in an optimal manner.

- **RW-2 - Increasing the Efficiency of Landfill Methane Capture.** CalRecycle retained SCS Engineers to develop a guidance document, *Technologies and Management Practices for Reducing Greenhouse Gas Emissions From Landfills* (California Integrated Waste Management Board 2008), to help landfill operators and regulators evaluate potential actions to achieve additional GHG emission reductions from landfills beyond what are currently occurring with existing landfill practices. The study is based on an evaluation of existing state-of-the-practice technologies, as reflected in published literature, reports to regulatory agencies, and the project team's familiarity and experience with specific landfill and landfill gas practices and projects.

- **RW-3 - High Recycling/Zero Waste.** This measure includes actions to address the following aspects of recycling: Commercial Recycling, Composting and Other Organics Products, Anaerobic Digestion, Extended Producer Responsibility, and Environmentally Preferable Purchasing.

More detailed in formation on the RW measures is available at the CalRecycle website at http://www.calrecycle.ca.gov/Climate/.

California Climate Action Registry/The Climate Registry

The California Climate Action Registry (CCAR) was established in 2000 by Senate Bill 1771 and modified in 2001 by Senate Bill 527 as a nonprofit voluntary registry for GHG emissions. (See Stats. 2000, ch. 1018 (enacting Health & Safety Code, §§ 42800–42870 and Pub. Resources Code, § 25730) and Stats. 2001, ch. 769 (amending Health and Safety Code, §§ 42810, 42821– 42824, 42840–42843, 42860, and 42870.) The purpose of CCAR is to help companies and organizations with operations in the state to establish GHG emissions baselines against which any future GHG emissions reduction requirements may be applied. CCAR has developed a general protocol and additional industry-specific protocols that provide guidance on how to inventory GHG emissions for participation in the registry. CCAR transitioned to The Climate Registry in 2010. San Benito County is a member of the Climate Registry.

Senate Bill 375

Senate Bill (SB) 375 (Steinberg), signed into law in September 2008, builds on the goals of AB 32 by attempting to control GHG emissions through limiting suburban sprawl. In September 2010, CARB assigned each region in California a target for reducing GHG emissions tied to land use. California Metropolitan Planning Organizations are required to address these targets in mandatory Sustainable Communities Strategies (SCS) as part of the Regional Transportation Plan. The purpose of the SCS plans is to reduce GHG emissions associated with global climate change by improving the efficiency of land use and transportation patterns. In addition, SB 375 creates incentives for creating walkable, sustainable, transit-oriented communities, including funding conditions and certain exemptions from CEQA. SB 375 attempts to tie together climate change, regional planning, transportation funding, and affordable housing.

Senate Bill 97

SB 97, signed August 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA (Stats. 2007, ch. 185 (enacting Pub. Resources Code, §§ 21083.05 and 21097). This bill directs the State OPR to prepare, develop, and transmit to the Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA by July 1, 2009. The Resources Agency is required to certify and adopt those guidelines by January 1, 2010.

On April 13, 2009, OPR submitted to the Secretary for Natural Resources its proposed amendments to the state CEQA Guidelines for greenhouse gas emissions, as required by SB 97. The Natural Resources Agency published its Notice of Proposed Action on amendments to the Guidelines addressing greenhouse gas emissions on July 3, 2009. The Natural Resources Agency made changes to its originally proposed amendments to the Guidelines and published the revised amendments on October 23, 2009. On December 30, 2009, the Natural Resources Agency adopted the CEQA Guidelines Amendments addressing greenhouse gas emissions.

4.3.3 Methods and Significance Criteria

4.3.3.1 Operations Emissions

The project-related change in criteria pollutant emissions was calculated using the CalEEMod emissions model (South Coast Air Quality Management District, 2011). CalEEMod is a land use emissions computer model designed to provide a platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operation of a variety of land use projects. The model quantifies direct emissions from construction and operation (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

More detailed information on the CalEEMod model is available at the: http://caleemod.com/.

The CalEEMod model was used to estimate emissions associated with motor vehicles travelling to and from the JSRL, and emissions associated with equipment used on-site to operate the landfill.

Output files from the CalEEMod model are presented in **Appendix B**.

4.3.3.1.1 Criteria Pollutant Emissions Significance Thresholds

Significance thresholds applied to operational air quality impacts are from the MBUAPCD document *CEQA Air Quality Guidelines* (Monterey Bay Unified Air Pollution Control District 2008).

Table 5-3 of the MBUAPCD guidelines presents the following significance thresholds for operational criteria pollutant emissions:

- 137 ppd of volatile organic compounds, measured in this *Air Quality Technical Report* as ROG;
- 137 ppd of NO_x, measured as nitrogen dioxide (NO_2);
- 82 ppd of PM_{10};
- 550 ppd of CO; and
- 150 ppd of sulfur oxides (SO_x), measured as sulfur dioxide (SO_2).

For the purposes of this Initial Study, the proposed project is considered to have a significant impact if implementation of the project would generate criteria pollutant emissions exceeding the values listed above.

4.3.3.1.2 Naturally Occurring Asbestos Significance Thresholds

Naturally occurring asbestos has been identified as a toxic air contaminant (TAC) by the CARB. No quantitative significance thresholds have been set for NOA. However, the California Department of Conservation provides a map that may be used as a screening-level indicator of the likelihood of NOA being present on the project site. The asbestos screening map, *A General Location Guide For Ultramafic Rocks In California - Areas More Likely To Contain Naturally Occurring Asbestos* (Department Of Conservation 2000) is available at (http://www.conservation.ca.gov/cgs/minerals/hazardous_minerals/asbestos/Pages/index.aspx).

The asbestos screening map,

> "shows the areas more likely to contain natural occurrences of asbestos in California. Its purpose is to inform government agencies, private industry and the public of the areas in the State where natural occurrences of asbestos may be an issue. In these areas, consideration of the implications of the presence or absence of asbestos through examination of more detailed maps and site-specific investigations could be warranted as part of public or private decision making." (Department of Conservation, 2000)

If a project site is located outside of all the areas considered to be more likely to contain NOA, it may be considered to have a relatively lower probability of containing NOA and, in this Initial Study, will be considered to have a less-than-significant impact.

If a project site is located within an area considered more likely to contain NOA, it may be considered to have an elevated probability of containing NOA and, in this Initial Study, will be considered to have a significant impact. On-site soil sampling, and the implementation of mitigation measures may be required to reduce the impact to a less-than-significant level.

4.3.3.1.3 On-Site Equipment

Exhaust emissions generated in association with operation of on-site equipment at the JSRL were quantified using the estimate of on-site equipment presented in **Table 14**.

Table 14. Current Equipment List at the John Smith Road Landfill				
Equipment	**Manufacturer/Model**	**Quantity**	**Frequency of Use**	**Mainline or Support**
Bulldozer	Caterpillar D6R	1	40 hours per week	Mainline
Bulldozer	Caterpillar D8N	1	12 hours per week	Support
Motor grader	Caterpillar 140 G	1	1 hour per week	Support
Wheeled loader	Caterpillar IT28B	1	3 hours per week	Support
Water truck	Freightliner Water Truck	1	20 hours per week	Mainline
Trash compactor	Caterpillar 826H	1	24 hours per week	Mainline
Back hoe	Caterpillar 426C	1	2 hours per week	Support
Excavator	Volvo EC 290	1	12 hours per week	Mainline
Dump/Haul truck	John Deere 350	1	12 hours per week	Mainline
Trash pump	6-inch Trash Pump	1	2 hours per week	Support
Air compressor	Ingersoll Rand 185	1	2 hours per week	Support
Mechanic truck	Ford F550	1	N/A	Support
Fuel truck	Ford Utility Truck	1	2 hours per week	Support
Roll-off	GMC Roll Off Truck	1	1 hour per week	Support
Pressure washer	Pressure Washer	1	1 hour per week	Support
Trash pump	3-inch Trash Pump	1	1 hour per week	Support
Generator	Generator	1	1 hour per week	Support
Source: Waste Connections, 2012.				

4.3.3.1.4 Vehicle Travel

Disposal of waste material requires transporting the waste from the source location to the disposal site. Transporting the waste involves vehicles of various sizes including: heavy-duty diesel transfer trucks, waste collection vehicles (e.g., vehicles that collect waste from homes in residential areas), and light-duty vehicles (e.g., those used by homeowners and operators of businesses that generate waste).

The proposed project would change the location where the waste is buried, but it would not change amount of waste generated. This Initial Study assumes the source of 500 tons per day of additional waste material hauled to the JSRL with the expansion project would be the San Francisco Bay Area.

Without expansion of the JSRL, waste material generated in San Benito County and from sources in the Bay Area would be hauled to other facilities. It is not precisely known where the waste would be hauled if the JSRL is not expanded. However, this Initial Study assumes the following:

- Waste from San Benito County sources would be hauled to facilities in neighboring counties that have closure dates beyond 2031. Based on information from Waste Connections (Shaw pers. comm.) and CalRecycle, the two sites assumed are the Monterey Regional Waste Management District Landfill in Marina, and the Johnson Canyon Landfill in Gonzales.

- Waste from Bay Area sources would be hauled to a facility in the Bay Area (Reilly pers. comm.). For this Initial Study, this waste is assumed to be hauled to the Vasco Road Landfill & Recycling Drop Off near Livermore.

Based on these assumptions, and information on waste amounts presented in **Section 3** of this Initial Study, **Table 15** presents calculations of vehicle miles travelled (VMT) associated with hauling waste material with and without the proposed project.

As shown in **Table 15**, the John Smith Road Landfill Expansion project would result in a net reduction in VMT. This reduction results from the increase in hauling waste from San Benito County sources if the JSRL is not expanded.

4.3.3.2 Local Carbon Monoxide

The *CEQA Air Quality Guidelines* CO screening procedures described above were applied to traffic analysis results presented in the *Traffic Impact Analysis for John Smith Landfill Expansion* (KD Anderson & Associates, 2012) to assess the impacts of the proposed project on CO concentrations. The traffic study presents analyses of intersection LOS both with and without implementation of the proposed project.

Table 15. John Smith Road Landfill Screening-Level Assessment of Haul Trucks Vehicle Miles Travelled

Amount of Source Material 400 tons from San Benito County sources 500 tons from Bay Area sources	
Average Weight per Truckload 1.34 average tons per truck from San Benito County sources 20 average tons per truck from Bay Area sources	
Number of Truckloads 299 truckloads from San Benito County sources 25 truckloads from Bay Area sources	
With Proposed Landfill Expansion	**Without Proposed Landfill Expansion**
Average Haul Distance (Roundtrip) 20 miles – San Benito County sources to John Smith Road Landfill 150 miles – Bay Area sources to John Smith Road Landfill	Average Haul Distances (Roundtrip) 70 miles – San Benito County sources to Gonzales and Marina (average) 80 miles – Bay Area sources to Vasco Road Landfill
Post-2030 Vehicle Miles Travelled 5,980 vehicle miles for San Benito County material hauled to John Smith Road Landfill 3,750 vehicle miles for Bay Area material hauled to John Smith Road Landfill 9,730 Total Vehicle Miles	Post-2030 Vehicle Miles Travelled 20,930 vehicle miles for San Benito County material hauled to Gonzales or Marina 2,000 vehicle miles for Bay Area material hauled to Vasco Road Landfill 22,930 Total Vehicle Miles
-13,200 Net Project-Related Change in Vehicle Miles Travelled	

Source: KD Anderson & Associates, 2012.

The screening procedure applied in this Initial Study focuses on the effects of the proposed project on traffic congestion, expressed as intersection level of service (LOS). Since elevated CO concentrations are associated with traffic congestion, a project is considered to have no potential for significant impacts on CO concentrations if it does not substantially contribute to excessive traffic congestion.

As specified in Section 5.4 of the *CEQA Air Quality Guidelines*, “The following would represent a potentially significant impact to intersections or road segments after mitigation (references are to peak-hour LOS):

- “Intersections or road segments that operate at LOS D or better that would operate at LOS E or F with the project's traffic, or
- “Intersections or road segments that operate at LOS E or F where the volume-to-capacity (V/C) ratio would increase 0.05 or more with the project's traffic, or
- “Intersections that operate at LOS E or F where delay would increase by 10 seconds or more with the project's traffic, or
- “Unsignalized intersections which operate at LOS E or F where the reserve capacity would decrease by 50 or more with the project's traffic. This criterion is based on the turning movement with the worst reserve capacity or
- “Project would generate substantial heavy duty truck traffic or generate substantial traffic along urban street canyons or near a major stationary source of CO.

“If any of these scenarios would occur, carbon monoxide modeling should be undertaken to determine if indirect source emissions would cause an exceedance of State or national AAQS at existing or reasonably foreseeable receptors.”

Projects that would meet these criteria are considered to have the potential for resulting in a significant CO air quality impact. According to the *CEQA Air Quality Guidelines*, detailed dispersion modeling is not needed for projects that do not meet these criteria and, in this Initial Study projects that do not meet these criteria are considered to have a less-than-significant CO air quality impact.

4.3.3.3 Air Quality Management Plan Consistency

The methods used to determine the consistency of the proposed project with the AQMP are presented in the *CEQA Air Quality Guidelines*:

> “Projects related directly to population growth will generate population-related emissions (e.g., motor vehicles, residential heating and cooling emissions). Population-related emissions have been forecast in the AQMP using population forecasts adopted by AMBAG. Thus, population-related projects which are consistent with these forecasts are consistent with the AQMP . . .

> "Consistency of indirect emissions associated with a commercial, industrial or institutional projects intended to meet the needs of the population as forecast in the AQMP is determined by comparing the estimated current population of the county in which the project is to be located with the applicable population forecast in the AQMP. If the estimated current population does not exceed the forecasts, indirect emissions associated with the project are deemed to be consistent with the AQMP. AMBAG should be contacted to request consistency determinations for population related projects."

This Initial Study applies significance thresholds presented in the *CEQA Air Quality Guidelines*:

> "The District prepares air quality plans which address attainment of the State ozone AAQS and maintenance of federal AAQS. These plans accommodate growth by projecting growth in emissions based on different indicators. For example, population forecasts adopted by AMBAG are used to forecast population-related emissions. Through the planning process, emission growth is offset by basinwide controls on stationary, area, and transportation sources of air pollution.
>
> "Projects which are not consistent with the AQMP have not been accommodated in the AQMP and will have a significant cumulative impact on regional air quality unless emissions are totally offset. AMBAG provides consistency determinations for population related projects. The District provides consistency determinations for all other projects."

4.3.3.4 Landfill Gas Emissions

Landfill gas emissions have been quantitatively estimated for this Initial Study using the U.S. EPA Landfill Gas Emissions Model (LandGEM), Version 3.02 of the model. The following is a brief description of the LandGEM model. A more detailed description is provided in Environmental Protection Agency 2005.

LandGEM is an estimation tool for quantifying air emissions from MSW landfills. The model was developed by the EPA and can be obtained by downloading from the EPA website (http://www.epa.gov/ttn/catc/products.html#software). It is also available from the National Technical Information Service (NTIS).

Air emissions from landfills come from LFG generated by the anaerobic decomposition of waste in the landfill. LandGEM estimates the amount of LFG emissions. As LFG gas passes through the waste, it sweeps non-methane organic compounds (NMOCs) and other air pollutants present in the waste to the surface. The composition of MSW landfill emissions is estimated by the model to be about 50 percent CH_4 and 50 percent CO_2, with additional, trace constituents of NMOCs.

The EPA has determined that emissions from MSW landfills cause, or contribute to, air pollution that may reasonably be anticipated to endanger public health or welfare. Some NMOCs are known or suspected carcinogens, or cause other noncancer health effects. Public welfare concerns include the odor nuisance from the landfill gas and the potential for CH_4 migration, both on-site and off-site, which may lead to explosions or fires. The CH_4 emitted from landfills is also a concern because it is a GHG and contributes to global climate change (U.S. EPA, 2005). Output files from the LandGEM model are presented in **Appendix B**.

Landfill gas (LFG) is approximately 40 to 60 percent CH_4, with the remainder being mostly CO_2. Landfill gas also contains varying amounts of nitrogen, oxygen, water vapor, hydrogen sulfide, and other contaminants or NMOCs. The NMOCs usually make up less than one percent of landfill gas (Energy Justice Network, 2012). Thus, CH_4 and CO_2 usually make up more than 99 percent of LFG. Quantitative significance thresholds for CH_4 and CO_2 for use in CEQA environmental documentation have not been adopted by state and local agencies. Therefore, while this Initial Study quantitatively estimates LFG associated with the JSRL, the significance of impacts is determined using qualitative thresholds to determine whether the project would result in or contribute to global climate change.

4.3.3.5 Amount of Waste Material

The amount of waste material buried at the JSRL in the past, and in the future without the proposed project is shown in **Table 16**.

Table 16.

Estimated and Forecasted Tons of Waste Buried Without John Smith Road Landfill Expansion Project

Year	Tons	Year	Tons	Year	Tons
1968	12,136	1988	12,136	2008	95,925
1969	12,136	1989	12,136	2009	89,607
1970	12,136	1990	23,274	2010	91,880
1971	12,136	1991	20,509	2011	82,532
1972	12,136	1992	22,128	2012	90,250
1973	12,136	1993	23,644	2013	90,250
1974	12,136	1994	28,965	2014	90,250
1975	12,136	1995	32,533	2015	90,250
1976	12,136	1996	54,100	2016	90,250
1977	12,136	1997	87,774	2017	90,250
1978	12,136	1998	95,161	2018	90,250
1979	12,136	1999	88,849	2019	90,250
1980	12,136	2000	68,379	2020	90,250
1981	12,136	2001	65,990	2021	90,250
1982	12,136	2002	58,165	2022	90,250
1983	12,136	2003	59,702	2023	90,250
1984	12,136	2004	56,178	2024	90,250
1985	12,136	2005	64,127	2025	90,250
1986	12,136	2006	89,181	2026	90,250
1987	12,136	2007	86,470	2027	26,000

Source: Rose, Mandy pers. comm.; ESP 2012; and KD Anderson & Associates 2012.

Notes: All values expressed in tons per year.

The proposed project is expected to increase the amount of waste buried at the landfill by 500 tons per day which, at 361 operating days per year, would be 180,500 tons per year. The increase in the amount of waste material is assumed to occur over a period of several years. For purposes of this Initial Study, the increase is assumed to occur incrementally between the years 2014 and 2022.

The project-related increase in the amount of waste buried at the JSRL would be in addition to the amounts shown in **Table 16**. As also described in **Section 3** of this Initial Study, the proposed project would also extend the length of time waste material would be buried at the JSRL to the year 2050. **Table 17** shows the past and future forecasted amount of waste buried at the landfill with the proposed project.

Table 17. Estimated and Forecasted Tons of Waste Buried With John Smith Road Landfill Expansion Project

Year	Tons	Year	Tons	Year	Tons
1968	12,136	1988	12,136	2008	95,925
1969	12,136	1989	12,136	2009	89,607
1970	12,136	1990	23,274	2010	91,880
1071	12,136	1991	20,509	2011	82,532
1972	12,136	1992	22,128	2012	90,250
1973	12,136	1993	23,644	2013	90,250
1974	12,136	1994	28,965	2014	110,306
1975	12,136	1995	32,533	2015	130,362
1976	12,136	1996	54,100	2016	150,418
1977	12,136	1997	87,774	2017	170,474
1978	12,136	1998	95,161	2018	190,530
1979	12,136	1999	88,849	2019	210,586
1980	12,136	2000	68,379	2020	230,642
1981	12,136	2001	65,990	2021	250,698
1982	12,136	2002	58,165	2022	270,750
1983	12,136	2003	59,702	2023	270,750
1984	12,136	2004	56,178	2024	270,750
1985	12,136	2005	64,127	2025	270,750
1986	12,136	2006	89,181	2026	270,750
1987	12,136	2007	86,470	2027	129,484

Source: KD Anderson & Associates, 2012.

4.3.3.6 GHG Emissions

Estimates of GHG emissions were calculated using the LandGEM model (U.S. Environmental Protection Agency, 2005) and the CalEEMod emissions model (South Coast Air Quality Management District, 2011).

San Benito County and MBUAPCD have not established a quantified threshold for determining the significance of GHG emissions. This Initial Study, therefore, presents quantified estimates of GHG emissions, but bases the project-specific impact significance determination on whether the proposed project would meet criteria presented in Appendix G, the *Environmental Checklist Form* of the State CEQA Guidelines. In Appendix G, a project is described as having a potentially significant impact on GHG if it would:

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

In the absence of a quantified significance threshold specific to GHG, the use of these criteria for analysis in this Initial Study is considered appropriate for determining whether the contribution of the proposed project to global climate change is significant.

4.3.4 Potential Environmental Effects

a) *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

Less Than Significant. The *CEQA Air Quality Guidelines* (Monterey Bay Unified Air Pollution Control District 2008) notes:

> "CEQA Guidelines §15125(b) requires that an EIR discuss consistency between the proposed project and applicable regional plans, including the Air Quality Management Plan (AQMP). Consistency determinations with the AQMP are used by the District to address a project's cumulative impact on regional air quality (i.e., ozone levels)."

Based on an assessment of population forecasts used in the AQMP, the proposed project is deemed to be consistent with the AQMP (Monterey Bay Unified Air Pollution Control District, 2012). Therefore, this impact is considered less than significant.

b) *Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?*

<u>Operation of On-Site Landfill Equipment</u>

Less than Significant. **Table 18** presents an estimate of emissions associated with operation of equipment at the JSRL. The proposed project would result in some equipment being replaced, but the type and amount of equipment would not change. Therefore, the emissions estimates shown in **Table 18** apply whether the landfill is expanded or not. Because the proposed project would not change the amount of emissions associated with operation of equipment, this impact is considered less than significant.

Table 18. Emissions Associated with Operation of On-Site Landfill Equipment						
Pounds per Day						**Tons per Year**
Reactive Organic Gases	**Nitrogen Oxides**	**Carbon Monoxide**	**Sulfur Dioxide**	**Inhalable Particulate Matter (PM_{10})**	**Fine Particulate Matter ($PM_{2.5}$)**	**Carbon Dioxide Equivalent (CO_2e)**
3.65	30.42	14.58	0.03	6.85	4.33	572.73
Source: CalEEMod and KD Anderson & Associates, 2012.						

Hauling of Waste Material

Less Than Significant. Disposal of waste material requires transporting the waste from the source location to the disposal site. Transporting the waste involves vehicles of various sizes including: heavy-duty diesel transfer trucks, waste collection vehicles (e.g., vehicles that collect waste from homes in residential areas), and light-duty vehicles (e.g., those used by homeowners and operators of businesses that generate waste). **Table 19** presents an estimate of emissions associated with hauling of waste material.

The proposed project would change the location where the waste is buried, but it would not change amount of waste generated. This Initial Study assumes the source of 500 tons per day of additional waste material hauled to the JSRL with the expansion project would be the San Francisco Bay Area.

Table 19 shows emissions estimates both without and with the expansion project, and shows the project-related change in emissions. Implementation of the proposed project would result in a reduction in the following types of air pollutant emissions associated with hauling of waste material:

- ROG,
- CO,
- SO_x,
- PM_{10}, and
- $PM_{2.5}$.

The project-related change in these types of emissions is less than the significance thresholds specified by the MBUAPCD. Therefore, this impact is considered less than significant.

Table 19. Mobile Source Emissions Associated with Hauling Waste Material							
	Pounds per Day						Tons per Year
Source of Emissions	Reactive Organic Gases	Nitrogen Oxides	Carbon Monoxide	Sulfur Dioxide	Inhalable Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)	Carbon Dioxide Equivalent (CO_2e)
Without John Smith Road Landfill Expansion Project (No Project)							
San Benito Source to Marina and Gonzales	4.62	10.45	50.60	0.24	26.41	1.17	2,988.64
Bay Area Source to Vasco Road	1.29	12.98	7.20	0.04	2.95	0.44	1,204.79
TOTAL	5.91	23.43	57.80	0.28	29.36	1.61	4,193.43
With John Smith Road Landfill Expansion Project (Plus Project)							
San Benito Source to Marina and Gonzales	1.51	3.07	15.17	0.07	7.55	0.44	858.25
Bay Area Source to Vasco Road	2.31	22.62	12.83	0.08	5.52	0.82	2,246.10
TOTAL	3.82	25.69	28.00	0.15	13.07	1.26	3,104.35
Project-Related Change in Amount of Emissions	**-2.09**	**2.26**	**-29.80**	**-0.13**	**-16.29**	**-0.35**	**-1,089.08**
Source: CalEEMod and KD Anderson & Associates, 2012.							

As shown in **Table 19**, implementation of the propose project would result in a net increase of 2.26 ppd of NO_x. This increase is less than the 137 ppd of NO_x significance threshold specified by the MBUAPCD. Therefore, this impact is considered less than significant.

Naturally Occurring Asbestos

Less Than Significant. The map, *A General Location Guide For Ultramafic Rocks In California - Areas More Likely To Contain Naturally Occurring Asbestos* (Department Of Conservation, 2000) shows areas more likely to contain NOA. Soil-disturbing construction activity in these areas would result in an elevated risk of entraining NOA.

The asbestos map shows there are no areas more likely to contain NOA in the vicinity of the proposed project site. The area more likely to contain NOA that is nearest to the JSRL is approximately 16 miles away. Therefore, the project site is considered to have a low probability of containing NOA, and this impact is considered less than significant.

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

Less Than Significant with Mitigation Incorporation. As shown in the *Traffic Impact Analysis for John Smith Landfill Expansion* (KD Anderson & Associates, 2012), the following five study intersections would operate at LOS D or better under Cumulative Plus Project conditions:

1. Fairview Road & John Smith Road,
2. John Smith Road & Best Road,
3. John Smith Road & John Smith Road Landfill access road,
4. John Smith Road & Santa Ana Valley Road, and
5. Airline Highway (SR 25) & Best Road.

Based on Section 5.4 of the *CEQA Air Quality Guidelines*, the proposed project is considered to not have the potential for resulting in a significant CO air quality impact at these five intersections. Therefore, the impact at these five intersections is considered less than significant.

As shown in *Traffic Impact Analysis for John Smith Landfill Expansion* (KD Anderson & Associates, 2012), the intersection of Airline Highway (SR 25) & Fairview Road would operate at LOS F during both the a.m. peak hour and p.m. peak hour under Cumulative Plus Project conditions. However, information presented in the *Traffic Impact Analysis for John Smith Landfill Expansion* shows the project-related increase in volume/capacity (V/C) ratio at this intersection is 0.01 or less during both the a.m. peak hour and the p.m. peak hour. Based on criteria presented in Section 5.4 of the CEQA Air Quality Guidelines and because the increases in the V/C ratio are less than 0.05, the impact of the proposed project on CO concentrations at this intersection is less than significant.

d) *Would the project expose sensitive receptors to substantial pollutant concentrations?*

Less Than Significant. The CARB has identified particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Implementation of the proposed project would generate heavy-duty diesel truck trips, and result in the continued use of diesel-powered on-site landfill equipment.

Because of the relatively low number of sensitive receptors adjacent to the JSRL and project-related haul routes, the generation of diesel PM is not considered to be a significant impact. However, operation of the proposed project could result in the concentration of heavy-duty diesel-fueled vehicles, and the generation of diesel PM, within the project site, and the simultaneous extended idling of a concentration of heavy-duty diesel-fueled trucks could result in the generation of a substantial amount of diesel PM.

California Code of Regulations, Title 13, Section 2485 is an *Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling*. The purpose of this measure is to reduce public exposure to diesel PM by limiting the idling of diesel-fueled commercial vehicles. Under this measure,

> "A driver of a diesel-fueled vehicle with a Gross Vehicle Weight Rating of more than 10,000 pounds is not permitted to idle the vehicle's primary engine for more than five minutes at any location, and is not allowed to operate a diesel-fueled auxiliary power system (APS) on the vehicle for more than five minutes when located within 100 feet of a restricted area. Exceptions do apply in certain situations and for certain vehicles." (http://www.afdc.energy.gov/afdc/laws/law/CA/5802)

A restricted area is defined in Section 2485 as "any real property zoned for individual or multifamily housing units that has one or more of such units on it."

Compliance with California Code of Regulations, Title 13, Section 2485 would reduce this impact to a less-than-significant level.

e) *Would the project create objectionable odors affecting a substantial number of people?*

Less Than Significant. The proposed project could potentially include materials and activities that would generate objectionable odors (e.g., storage and composting of organic material).

The potential for odor generation to be a significant impact is affected by several factors:

1. the strength of the odor generation,
2. the distance between the odor generator and the receptor,
3. wind direction and speed,
4. the duration and frequency of the odor generation,
5. the degree to which an odor is considered objectionable, and
6. the sensitivity of the receptor.

These factors result in odors having an unquantifiable effect.

There are no adjacent land uses that would be sensitive to odors generated at the project site. The nearest permanent residence is approximately 0.4 miles west-northwest of the facility's western property boundary. At this distance, a moderate amount of odor generation would not be considered to have a significant impact. However, at this distance, large or intense odor-generating activities could be noticeable and would be considered a potentially significant impact.

The MBUAPCD Rule 402 addresses nuisances:

> "The purpose of this Rule is to provide an explicit prohibition against sources creating public nuisances while operating within the Monterey Bay Unified Air Pollution Control District (Air District)."

The *CEQA Air Quality Guidelines* (Monterey Bay Unified Air Pollution Control District 2008) notes,

> "Projects which would emit pollutants associated with objectionable odors in substantial concentrations could result in significant impacts if odors would cause injury, nuisance, or annoyance to a considerable number of persons or would endanger the comfort, health, or safety of the public. Because people have mixed reactions to odors, the nuisance level of an odor varies. Estimation of potential odor impacts should be coordinated with the District."

The Odor Control Processes included in **Section 4.3.1.2** of this Initial Study describes procedures implemented at JSRL that would be used to address potentially objectionable odor. These procedures are considered adequate to address objectionable odors. Therefore, this impact is considered less than significant.

f) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant. The waste that has been buried, is buried, and would be buried at the JSRL decomposes and generates LFG emissions. The decomposition and generation of emissions will continue for decades. Based on the amounts of waste buried at the JSRL without the proposed project (**Table 16**), **Table 20** presents the amount of LFG emissions that would be generated at the JSRL without the proposed project. With the amount of waste buried with the proposed project (**Table 17**), **Table 21** presents the LFG emissions that would be generated at the JSRL with the proposed project. It should be noted that the analysis prepared for this document is conservative and reaches its conclusions without reliance on factors such as increased organics diversion in the future, which will lower the LFG generation rate in landfills due to far less organic wastes decomposing and generating LFG.

The difference in the amount of emissions shown in **Tables 20** and **21** would be the project-related change in LFG emissions generated at the JSRL. The difference is due to the amount of waste buried at the landfill. While the proposed project would change the amount of emissions generated at the JSRL, it is not clear the proposed project would change the LFG emissions that would result from the waste itself. This is because the proposed project would change the location where the waste is buried, but it would not change the amount of waste generated. Without the proposed project, the waste not buried at the JSRL would be disposed of, and likely buried, at some other location.

The project-related increase in waste buried at the JSRL would be from the San Francisco Bay Area. The solid wastes landfilled at JSRL would be landfilled in another location without the project, and thus any potential LFG/GHG impact from landfill disposal is merely shifted to the other disposal location.

As noted above, more than 99 percent of LFG is composed of CO_2 and CH_4. These gases are GHG, associated with global climate change. The impact of these gases are global, rather than local, in scale. The proposed project would affect where the LFG are generated, but would not affect whether these gases are generated. Because the gases affect climate on a global scale, the location of their generation is less important than the amount of gas generated. Because the proposed project would not substantially affect the amount of LFG generated, the impact of the proposed project on LFG emissions is considered less than significant.

Table 20. Landfill Gas Emissions in Tons per Year without John Smith Road Landfill Expansion Project

Year	Methane	Carbon Dioxide	Non-Methane Organic Compounds	Total Landfill Gases	Year	Methane	Carbon Dioxide	Non-Methane Organic Compounds	Total Landfill Gases
2011	5,360	14,705	230	20,065	2062	1,795	4,926	77	6,721
2012	5,599	15,361	241	20,960	2063	1,708	4,685	73	6,393
2013	5,826	15,985	250	21,811	2064	1,624	4,457	70	6,081
2014	6,042	16,579	260	22,621	2065	1,545	4,240	66	5,785
2015	6,248	17,143	269	23,391	2066	1,470	4,033	63	5,503
2016	6,444	17,680	277	24,124	2067	1,398	3,836	60	5,234
2017	6,630	18,191	285	24,821	2068	1,330	3,649	57	4,979
2018	6,807	18,677	293	25,484	2069	1,265	3,471	54	4,736
2019	6,976	19,139	300	26,115	2070	1,203	3,302	52	4,505
2020	7,136	19,579	307	26,715	2071	1,145	3,141	49	4,285
2021	7,288	19,997	313	27,286	2072	1,089	2,988	47	4,076
2022	7,433	20,395	320	27,828	2073	1,036	2,842	45	3,878
2023	7,571	20,774	325	28,345	2074	985	2,703	42	3,688
2024	7,702	21,134	331	28,836	2075	937	2,571	40	3,509
2025	7,827	21,476	336	29,303	2076	891	2,446	38	3,337
2026	7,946	21,802	342	29,748	2077	848	2,327	36	3,175
2027	8,059	22,112	346	30,170	2078	807	2,213	35	3,020
2028	8,166	22,406	351	30,573	2079	767	2,105	33	2,873
2029	8,268	22,687	355	30,955	2080	730	2,003	31	2,732
2030	8,366	22,953	360	31,319	2081	694	1,905	30	2,599
2031	8,458	23,207	364	31,665	2082	660	1,812	28	2,472
2032	8,046	22,075	346	30,121	2083	628	1,724	27	2,352
2033	7,653	20,999	329	28,652	2084	598	1,640	26	2,237
2034	7,280	19,974	313	27,254	2085	568	1,560	24	2,128
2035	6,925	19,000	298	25,925	2086	541	1,484	23	2,024
2036	6,587	18,074	283	24,661	2087	514	1,411	22	1,926
2037	6,266	17,192	269	23,458	2088	489	1,342	21	1,832
2038	5,960	16,354	256	22,314	2089	465	1,277	20	1,742
2039	5,670	15,556	244	21,226	2090	443	1,215	19	1,657
2040	5,393	14,797	232	20,191	2091	421	1,155	18	1,577
2041	5,130	14,076	221	19,206	2092	401	1,099	17	1,500
2042	4,880	13,389	210	18,269	2093	381	1,045	16	1,426
2043	4,642	12,736	200	17,378	2094	362	994	16	1,357
2044	4,416	12,115	190	16,531	2095	345	946	15	1,291
2045	4,200	11,524	181	15,724	2096	328	900	14	1,228
2046	3,995	10,962	172	14,958	2097	312	856	13	1,168
2047	3,800	10,428	163	14,228	2098	297	814	13	1,111
2048	3,615	9,919	155	13,534	2099	282	774	12	1,057
2049	3,439	9,435	148	12,874	2100	269	737	12	1,005
2050	3,271	8,975	141	12,246	2101	255	701	11	956
2051	3,112	8,537	134	11,649	2102	243	667	10	910
2052	2,960	8,121	127	11,081	2103	231	634	10	865
2053	2,815	7,725	121	10,540	2104	220	603	9	823
2054	2,678	7,348	115	10,026	2105	209	574	9	783
2055	2,548	6,990	109	9,537	2106	199	546	9	745
2056	2,423	6,649	104	9,072	2107	189	519	8	708
2057	2,305	6,325	99	8,630	2108	180	494	8	674
2058	2,193	6,016	94	8,209	2109	171	470	7	641
2059	2,086	5,723	90	7,809	2110	163	447	7	610
2060	1,984	5,444	85	7,428	2111	155	425	7	580
2061	1,887	5,178	81	7,065					

Source: KD Anderson & Associates, 2012.

Note: Total landfill gases identified in Table 21 estimate LFG generation, not emission; some of the LFG generated is collected and flared while some is reduced through the soil cover. The values in Table 21 are very conservative.

Table 21. Landfill Gas Emissions in Tons per Year with John Smith Road Landfill Expansion Project

Year	Methane	Carbon Dioxide	Non-Methane Organic Compounds	Total Landfill Gases	Year	Methane	Carbon Dioxide	Non-Methane Organic Compounds	Total Landfill Gases
2011	5,360	14,705	230	20,065	2062	15,085	41,390	648	56,475
2012	5,599	15,361	241	20,960	2063	14,349	39,371	617	53,721
2013	5,826	15,985	250	21,811	2064	13,650	37,451	587	51,101
2014	6,042	16,579	260	22,621	2065	12,984	35,625	558	48,609
2015	6,359	17,448	273	23,808	2066	12,351	33,887	531	46,238
2016	6,772	18,581	291	25,353	2067	11,748	32,235	505	43,983
2017	7,276	19,963	313	27,239	2068	11,175	30,663	480	41,838
2018	7,866	21,583	338	29,450	2069	10,630	29,167	457	39,797
2019	8,539	23,430	367	31,969	2070	10,112	27,745	435	37,856
2020	9,290	25,491	399	34,781	2071	9,619	26,391	413	36,010
2021	10,116	27,757	435	37,873	2072	9,150	25,104	393	34,254
2022	11,013	30,217	473	41,230	2073	8,703	23,880	374	32,583
2023	11,977	32,863	515	44,840	2074	8,279	22,715	356	30,994
2024	12,895	35,380	554	48,274	2075	7,875	21,607	338	29,483
2025	13,767	37,774	592	51,541	2076	7,491	20,554	322	28,045
2026	14,597	40,051	627	54,648	2077	7,126	19,551	306	26,677
2027	15,386	42,217	661	57,603	2078	6,778	18,598	291	25,376
2028	16,137	44,277	694	60,414	2079	6,448	17,691	277	24,138
2029	16,852	46,237	724	63,089	2080	6,133	16,828	264	22,961
2030	17,531	48,101	754	65,633	2081	5,834	16,007	251	21,841
2031	18,178	49,875	781	68,052	2082	5,550	15,227	239	20,776
2032	18,792	51,562	808	70,354	2083	5,279	14,484	227	19,763
2033	19,377	53,166	833	72,544	2084	5,021	13,778	216	18,799
2034	19,934	54,693	857	74,626	2085	4,777	13,106	205	17,882
2035	20,463	56,145	880	76,608	2086	4,544	12,466	195	17,010
2036	20,966	57,526	901	78,492	2087	4,322	11,858	186	16,180
2037	21,445	58,840	922	80,285	2088	4,111	11,280	177	15,391
2038	21,900	60,089	941	81,990	2089	3,911	10,730	168	14,641
2039	22,334	61,278	960	83,612	2090	3,720	10,207	160	13,927
2040	22,746	62,409	978	85,155	2091	3,539	9,709	152	13,247
2041	23,138	63,485	995	86,622	2092	3,366	9,235	145	12,601
2042	23,511	64,508	1,011	88,019	2093	3,202	8,785	138	11,987
2043	23,865	65,481	1,026	89,347	2094	3,046	8,357	131	11,402
2044	24,203	66,407	1,040	90,610	2095	2,897	7,949	125	10,846
2045	24,524	67,288	1,054	91,811	2096	2,756	7,561	118	10,317
2046	24,829	68,125	1,067	92,954	2097	2,621	7,193	113	9,814
2047	25,120	68,922	1,080	94,042	2098	2,494	6,842	107	9,335
2048	25,396	69,680	1,092	95,076	2099	2,372	6,508	102	8,880
2049	25,659	70,401	1,103	96,060	2100	2,256	6,191	97	8,447
2050	25,909	71,087	1,114	96,996	2101	2,146	5,889	92	8,035
2051	26,146	71,739	1,124	97,886	2102	2,042	5,602	88	7,643
2052	24,871	68,241	1,069	93,112	2103	1,942	5,328	83	7,270
2053	23,658	64,913	1,017	88,571	2104	1,847	5,068	79	6,916
2054	22,504	61,747	967	84,251	2105	1,757	4,821	76	6,578
2055	21,407	58,735	920	80,142	2106	1,671	4,586	72	6,258
2056	20,363	55,871	875	76,234	2107	1,590	4,362	68	5,952
2057	19,370	53,146	833	72,516	2108	1,512	4,150	65	5,662
2058	18,425	50,554	792	68,979	2109	1,439	3,947	62	5,386
2059	17,526	48,088	753	65,615	2110	1,368	3,755	59	5,123
2060	16,672	45,743	717	62,415	2111	1,302	3,572	56	4,873
2061	15,859	43,512	682	59,371					

Source: KD Anderson & Associates, 2012.

As described earlier in **Section 3** of this Initial Study, CARB prepared and adopted the *Climate Change Scoping Plan – a Framework for Change* (California Air Resources Board 2008) in response to requirements included in AB 32. The Scoping Plan includes three Recycling and Waste (RW) measures. To provide guidance in the implementation of Scoping Plan measure RW-2, Increasing the Efficiency of Landfill Methane Capture, CalRecycle developed the guidance document, *Technologies and Management Practices for Reducing Greenhouse Gas Emissions From Landfills* (California Integrated Waste Management Board, 2008).

As described earlier in **Section 3** of this Initial Study, the proposed project includes the following measures from the document *Technologies and Management Practices for Reducing Greenhouse Gas Emissions From Landfills*:

- Measure A-2: Tighter spacing of LFG wells
- Measure A-4: Connection of leachate collection and removal system (LCRS) layer to gas collection and control system (GCCS)
- Measure A-6: Maximize borehole and well diameters
- Measure A-7: Enhance seals on LFG wells and boreholes
- Measure A-9: Best management practice (BMP) for LFG System Piping
- Measure B-2: Redundant flare station equipment
- Measure B-3: Maximize capacity of gas mover equipment
- Measure B-4: Maximum Capacity of Gas Control Equipment
- Measure C-2: LFG Master Planning
- Measure C-3: Energy Recovery from LFG
- Measure D-1: Cover LCRS layer
- Measure D-3: Designing for closure and post-closure
- Measure D-4: Promote deeper landfills
- Measure D-7: Modify, limit or remove intermediate cover systems

Because the proposed project implements the *Technologies and Management Practices for Reducing Greenhouse Gas Emissions From Landfills* measures listed above, the proposed project is considered consistent with the CARB Scoping Plan and AB 32, and does not impair or impede compliance with AB 32. As a result, the project does not conflict with applicable plans, policies or regulations adopted for the purpose of reducing the emissions of greenhouse gases. Therefore, the project is considered to have a less-than-significant impact on global climate change.

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4.4 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?				✓
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		✓		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			✓	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

4.4.1 Environmental Setting

In response to requests from the U.S. Fish and Wildlife Service and the California Department of Fish and Game, the County conducted surveys on the project area in support of the San Joaquin Kit Fox (SJKF) Early Evaluation Assessment, California red-legged frog (CRLF) Site Assessment, California Tiger Salamander (CTS) Site Assessment, Western Burrowing Owl Phase I and II Surveys, Rare Plant Surveys, and a Vernal Pool Site Assessment for Special-Status Branchiopod Species.

Padre Associates, Inc. conducted field surveys for the California Red-legged Frog Site Assessment, California Tiger Salamander Site Assessment, and Vernal Pool Branchiopod Habitat Site Assessment simultaneously on January 25, 2011. Burrow surveys for the SJKF Early Evaluation Assessment and Western Burrowing Owl Phase I and II Surveys were conducted simultaneously with the rare plant surveys on May 9, May 27, and July 20, 2011. The Site Assessments for CRLF, CTS and vernal pool branchiopods, the SJKF Early Evaluation Assessment, the Burrowing Owl Phase I and II Survey Report, and the Rare Plant Survey Report have been completed and submitted to San Benito County for review. These assessments have been submitted to the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

4.4.1.1 CRLF Site Assessment

The CRLF is a federal Threatened species and a California Species of Special Concern. It formerly ranged from northern California south along the Pacific Coast, west of the Cascade Mountains and the Sierra Nevada, to northern Baja California at elevations from near sea level to 8,000 feet MSL. Populations remain in the San Francisco Bay Area, along the California coast, and the western edge of the Central Valley. The CRLF occurs in different habitats depending on their life stage and season. All stages are most likely to be encountered in and around breeding sites, which include coast lagoons, marshes, springs, permanent and semi-permanent natural ponds, ponded and backwater portions of streams, as well as artificial impoundments such as stock ponds, irrigation ponds, and siltation ponds with dense and extensive vegetative cover of emergent and bank vegetation including willow (*Salix* sp.), cattail, and bulrush. There are 21 known occurrences of CRLF in the Hollister and Tres Pinos quadrangles and Critical Habitat unit SNB-1 is located two miles south of the project site. The nearest recorded occurrence of CRLF is located approximately 1.6 miles northwest of the project site.

Based on the results of the CRLF Site Assessment, the project area does not provide breeding habitat for the CRLF; however, the site could provide upland habitat for the CRLF due to the presence of stockponds southwest of the site. The nearest known CRLF occurrence is 1.5 miles west of the site, and stockponds located closer to the site do not provide optimal breeding habitat due to the lack of vegetation and short duration of inundation.

Results of the CRLF Site Assessment have been submitted to the U.S. Fish and Wildlife Service (USFWS) for concurrence and/or recommendations and to determine whether protocol-level surveys will be required for CRLF at this site.

4.4.1.2 CTS Site Assessment

The CTS is a federal Threatened species and California Threatened species. The CTS typically inhabits grassland and oak woodland habitats below 1,500 feet, msl that have scattered ponds, intermittent streams, and/or vernal pools. CTS aestivate in rodent burrows throughout the summer and emerge after the first few sustained rainstorms in November. Adults will migrate up to 2 kilometers (6,562 feet) from breeding ponds to aestivation sites. The breeding season extends from December through February. Adults remain in breeding ponds for several days before exiting to forage in terrestrial habitat. There are 21 known occurrences of CTS in the Hollister and Tres Pinos quadrangles and Critical Habitat unit EB-15A is located 0.8-mile west of the project site. The nearest recorded occurrence of CTS is located approximately 1.2 miles west of the project site. There is no aquatic breeding habitat for this species on the project site; however, suitable breeding habitat does occur in ponds and pools in the vicinity of the project site and due to the occurrence of CTS in the vicinity of the project site, and the presence of burrows on the project site, the site could provide suitable upland, non-breeding habitat.

Based on the results of the CTS Site Assessment, the project area does not provide breeding habitat for the CTS; however, the site could provide upland habitat for the CTS due to the proximity of adjacent stockponds that could provide breeding habitat. The nearest known CTS occurrence is 1.3 miles from the project site and Critical Habitat is located 0.5-mile west of the project site.

Results of the CTS Site Assessment have been submitted to the USFWS for concurrence and/or recommendations and to determine whether protocol-level surveys will be required for CTS at this site.

4.4.1.3 Vernal Pool Branchiopod Habitat Site Assessment

Vernal pool branchiopod species are freshwater crustaceans that are restricted to vernal pools, swales, and other seasonal pools. Their eggs remain dormant during most of the year in the form of cysts, which are capable of withstanding extreme environmental conditions, such as heat, cold, and prolonged desiccation. The cysts hatch when the pools fill with rainwater, and the young rapidly develop into sexually mature adults. Not all of the cysts hatch with the first rainfall; some remain dormant to hatch during subsequent events or in later years.

Based on the results of the Vernal Pool Branchiopod Habitat Site Assessment, the project area is not considered to support suitable habitat for special-status vernal pool branchiopods, including the listed vernal pool fairy shrimp, due to the lack of inundated areas that could provide aquatic habitat during the wet season.

Results of the Habitat Site Assessment have been submitted to the USFWS for concurrence and/or recommendations and to determine whether further protocol-level surveys are needed for this project.

4.4.1.4 SJKF Early Evaluation Assessment

This mammal is a state-listed Threatened and federally listed Endangered species found mostly in grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub. The historic range of the kit fox was from eastern Contra Costa County in the north south through most of the San Joaquin Valley to southern Kern County and along the interior Coast Range valleys and foothills. Their range has been fragmented and their populations greatly reduced, especially north of Merced County. They typically use the burrow of a ground squirrel as a den, but will also utilize manmade sites such as drainpipes. Kit foxes mate in late December or early January and three to five kits are born in late February or early March. During the nursing period, which lasts about a month, the male provides most of the food for the family. This species is well adapted to arid conditions and can survive without drinking water, receiving all the moisture they require from the metabolic and preformed water in their prey. Small mammals, such as rabbits, kangaroo rats, and voles are its primary source of food. Kit foxes are primarily nocturnal and spend the daytime in their burrows.

There are six recorded occurrences within the Hollister and Tres Pinos quadrangles and one occurrence within one mile of the project site; however, five of the six occurrences, including the occurrence within one mile of the site, are from 1975 or earlier. The nearest recorded occurrence is approximately 0.5-mile south of the project site. This is an occurrence recorded in 1975 of two kit fox sightings and a den. The most recent record of kit fox in the area is an occurrence located approximately 6.5 miles west-northwest of the project site. This was an observation of 1 or 2 juveniles on a ranch west of Hollister.

Based on the results of the SJKF Early Evaluation, SJKF are not likely to occur on the project site because no recent occurrences exist in the vicinity of the site. The most recent occurrence of SJKF within 10 miles was from almost 20 years ago, and all other occurrences within 10 miles of the site are greater than 30 years old. Additionally, the presence of coyotes and badgers on the site and the disturbance from the adjacent active landfill may deter the SJKF from occurring on the site.

Results of the SJKF Early Evaluation Assessment have been submitted to the USFWS for concurrence and/or recommendations and to determine whether protocol-level surveys will be required for SJKF at this site.

4.4.1.5 Western Burrowing Owl Phase I and II Surveys

Western burrowing owl is a California Species of Special Concern. It occurs in short grass prairie and is associated with the excavations of burrowing mammals, most notably the California ground squirrel, which it uses for nesting. It is often active during the day, but it does most of its hunting at dusk and at night. During the breeding season, it may hunt at anytime. Its diet is primarily composed of small mammals and insects. The burrowing owl has suffered population declines due to the poisoning of ground squirrels and other rodents, which it depends upon for burrows and because of habitat destruction. There are three recorded occurrence of this species within the Hollister and Tres Pinos quadrangles and the nearest recorded occurrence is located two miles northwest of the project site. No burrowing owls were observed during field surveys.

Burrow surveys were conducted on the project area. No western burrowing owls were observed during surveys and no recent sign of burrow activity was recorded. Based on the survey results, no active burrowing owl burrows were found. The lack of grazing and the height of vegetation on the site in combination with an abundance of grazed grasslands on surrounding properties may be the reason for the lack of burrowing owls on the site; however, the site should be considered potential burrowing owl habitat and could become occupied at any time.

Results of the Western Burrowing Owl Phase I and II Surveys have been submitted to California Department of Fish and Game (CDFG) for concurrence and/or recommendations.

4.4.1.6 Rare Plant Surveys

The following is a description of the sensitive plant species for which there are recorded occurrences in the Tres Pinos or Hollister quadrangles and suitable habitat is present onsite (i.e. annual grasslands). These species were identified by a California Natural Diversity Database (CNDDB) query, consultation with USFWS, and surveys conducted for this project. Rare plant surveys were conducted within the project area in May and July 2011 to coincide with the blooming period of all potentially occurring rare plant species. All plants observed in the field were identified to the extent necessary to determine whether it was a rare or protected species. No rare plants were observed on the site during the surveys.

Douglas' fiddleneck (Amsinckia douglasiana). This plant is a California Native Plant Society (CNPS) List 4 species. It occurs in cismontane woodland and valley and foothill grasslands. It is an annual herbaceous species that blooms from March through May and occurs at an elevation of 0 to 6,400 feet MSL (CNPS, 2011). There are no recorded occurrences within the Tres Pinos or Hollister quadrangles and this species was not observed during rare plant surveys within the proposed expansion area.

Alkali milk vetch (Astragalus tener var. tener). This plant is a CNPS List 1B species. It occurs in alkali playa, valley and foothill grasslands, and vernal pools. It is an annual herbaceous species that blooms from March through June and occurs at an elevation of three to 200 feet MSL (CNPS, 2011). The only recorded occurrence in the Tres Pinos or Hollister quadrangles is a record from 1897 of an occurrence at an unknown location near Hollister. It is assumed that this occurrence is no longer in existence. This species was not observed during rare plant surveys within the proposed project area.

San Joaquin spearscale (Atriplex joaquiniana). This plant is a CNPS List 1B species. This species is associated with chenopod scrub, meadows and seeps, and valley and foothill grassland habitats on alkaline soils. It is an annual herbaceous species that blooms from April to October and occurs at elevations of three to 1,000 feet MSL (CNPS, 2011). The nearest recorded occurrence is a record from 1995 located approximately five miles southwest of the project site (**Figure 9**). This species was not observed during rare plant surveys within the proposed project area.

San Benito evening primrose (Camissonia benitensis). This plant is a federally listed Threatened and a CNPS List 1B species. This species is associated with chaparral and cismontane woodland habitats on serpentine soils. It is an annual herbaceous species that blooms from May through June and occurs at elevations of 1,900-4,200 feet MSL

(CNPS, 2011). Recorded occurrences of this species all occur in the southern part of San Benito County and the nearest recorded occurrence is a 1992 occurrence recorded on BLM property over 38 miles southeast of the project site (**Figure 9**). This species was not observed during rare plant surveys within the proposed project area.

Pinnacles buckwheat (Eriogonum nortonii). This plant is a CNPS List 1B species. This species is associated with chaparral and valley and foothill grassland habitats often on recent burn sites. It is an annual herbaceous species that blooms from May to June and occurs at an elevation of 1,000 to 3,000 feet MSL (CNPS, 2011). The nearest recorded occurrence is a record from 1989 located approximately six miles southwest of the project site (**Figure 9**). This species was not observed during rare plant surveys within the proposed project area.

Round-leaved filaree (Erodium macrophyllum). This plant is a CNPS List 2 species. This species is associated with cismontane woodland and valley and foothill grassland habitat in clay soils. It is an annual herbaceous species that blooms from March to May and occurs at an elevation of 40 to 3,600 feet MSL (CNPS, 2011). The nearest recorded occurrence is a record from 1999 located over seven miles from the project site (**Figure 9**). This species was not observed during rare plant surveys within the proposed project area.

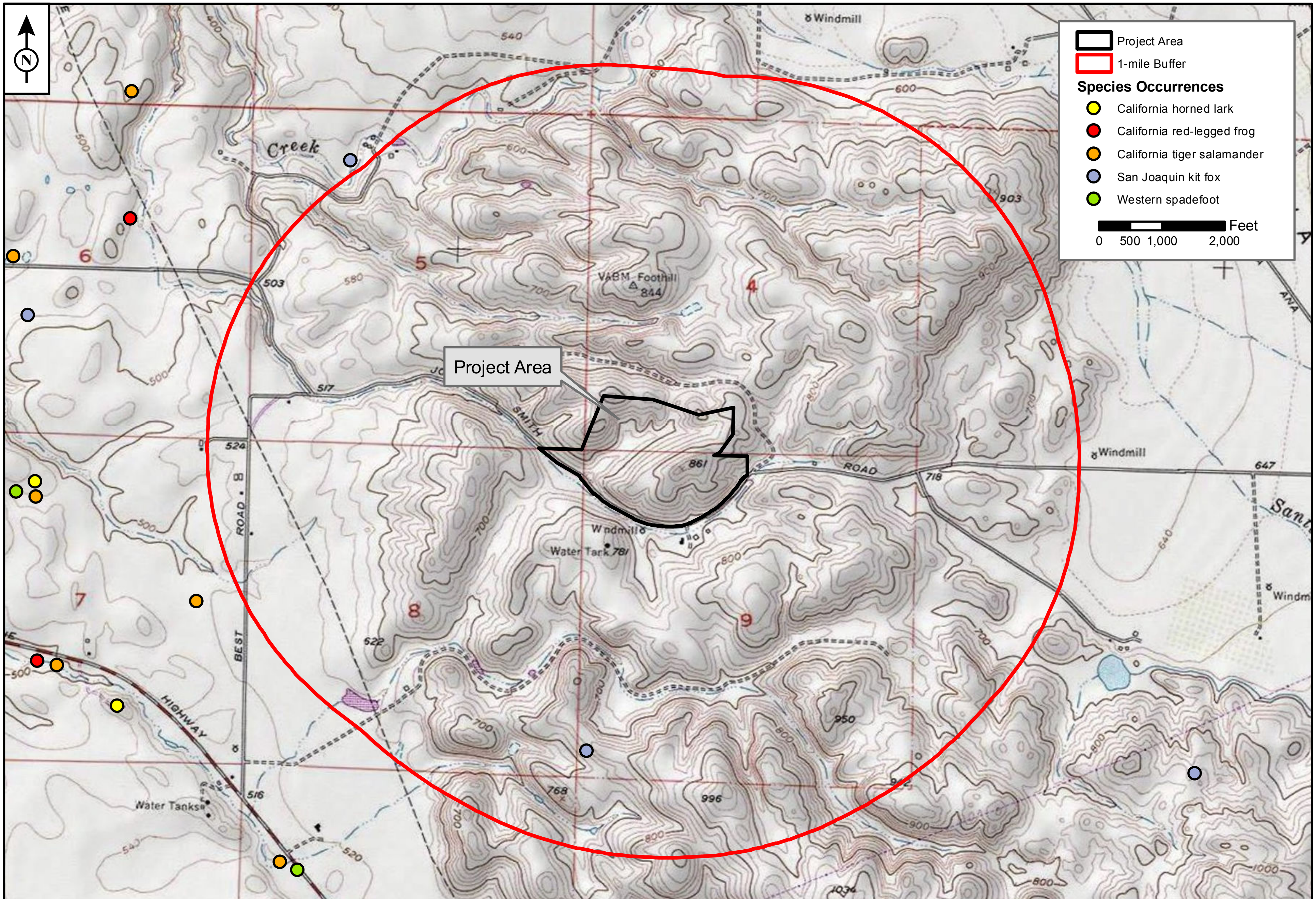
Hoover's button-celery (Eryngium aristulatum var. hooveri). This plant is a CNPS List 1B species associated with vernal pools. It is an annual or perennial herbaceous species that blooms in July and occurs at an elevation of 10 to 150 feet MSL (CNPS, 2011). The nearest recorded occurrence is a record from 1933 located approximately ten miles north-northwest of the project site (**Figure 9**). This species was not observed during rare plant surveys within the proposed project area.

Indian Valley bush-mallow (Malacothamnus aboriginum). This plant is a CNPS List 1B species. This plant occurs in chaparral or cismontane woodland habitat on rocky burn sites. It is deciduous shrub that blooms from April to October and occurs at an elevation of 500 to 5,600 feet MSL (CNPS, 2011). The nearest recorded occurrence is a record from 1918 located approximately 2.2 miles south of the project site (**Figure 9**). This species was not observed during rare plant surveys within the proposed project area.

San Joaquin woolly-threads (Monolopia congdonii). This plant is a federally listed Endangered and a CNPS List 1B species. This species is associated with chenopod scrub and valley and foothill grassland habitats on sandy soils. It is an annual herbaceous species that blooms from February through May and occurs at elevations of 200 to 2,600 feet MSL (CNPS, 2011). Recorded occurrences of this species all occur in the southeastern part of San Benito County and the nearest recorded occurrence is a 1988 occurrence located over 36 miles east-southeast of the project site (**Figure 9**). This species was not observed during rare plant surveys within the proposed project area.

4.4.1.7 Other Special-Status Species

Tricolored blackbird. The tricolored blackbird (TCBB) is a California Species of Special Concern, and a Bureau of Land Management (BLM) Sensitive species. The TCBB is a



Source: ESP 2012, ESRI 2012, L&A 2012, Padre 2011.

Figure 9. Known Occurrences of Special Status Species

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

nomadic resident of the Sacramento and San Joaquin valleys and lower foothills of the Sierra Nevada and Coast ranges. This species typically nests near freshwater in dense cattails and bulrush, but can also nest in thickets of willow, blackberry, wild rose, and tall herbs (Zeiner et al., 1990a). Estimates for colony size range from 15 to 47,000 birds. Flooded lands, pond margins, grass fields and agricultural fields constitute typical foraging habitat. There are no recorded occurrences of TCBB in the Hollister or Tres Pinos quadrangles; however, a large breeding colony was observed on the project site. Suitable nesting habitat for this species occurs in the dense overgrown clusters of milk thistle growing in the northern portion of the project site where the buildings and orchard were removed.

During general biological surveys conducted in April 2010, a TCBB colony was observed using dense patches of milk thistle within the Resource Recovery Park Project Site (south of John Smith Road) as a nesting substrate. The TCBB colony was not observed during the 2011 nesting season, likely due to a reduction in the density of milk thistle present; however, the site is considered potential nesting habitat for the TCBB, which is a California Species of Special Concern.

American badger. The American badger is a California Species of Special Concern occurring in grassland habitat with friable soils and an abundance of ground squirrel burrows. This species is an uncommon, permanent resident found throughout most of the state, except in the northern North Coast area (Grinnell et al. 1937). Badgers are most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Badgers dig burrows in friable soil for cover. They frequently reuse old burrows, although some may dig a new den each night, especially in summer (Messick and Hornocker, 1981). There is one recorded occurrence of this species within the Hollister and Tres Pinos quadrangles located 2.7 miles northwest of the project site.

During burrow surveys conducted for the SJKF Early Evaluation and the Western Burrowing Owl Phase I and II Surveys, a cluster of several oblong burrows with claw marks on the side, indicative of American badger, were observed north of John Smith Road during the May 2011 surveys. Based on these observations, it is likely that American badger, a California Species of Special Concern, occurs within the John Smith Landfill Expansion Site.

Western spadefoot toad. The western spadefoot toad is a California Species of Special Concern. Western spadefoot toad occurs throughout the Central Valley and adjacent foothills in grassland and sometimes valley-foothill hardwood woodland habitat in shallow temporary pools. There are four known occurrences in the Hollister and Tres Pinos quadrangles. The nearest recorded occurrence is located approximately 1.3 miles south-southwest of the project site. There is no aquatic breeding habitat for this species on the project site; however, due to their occurrence in the vicinity of the project site, they could use uplands within the project site for aestivation habitat.

Northern Pacific pond turtle. The Northern Pacific pond turtle (NPPT) is a California Species of Special Concern. The NPPT occurs primarily in foothills west of the Cascade-Sierra crest throughout California (The Wildlife Society, 1994). The northwestern subspecies ranges north of the San Francisco Bay area and intergrades with the Southern Pacific pond turtle in the southern portion of the Central Valley (Holland, 1991). NPPT are semi-aquatic, inhabiting streams, marshes, ponds, and irrigation ditches within woodland, grassland, and open forest communities, but require upland sites for nesting and over-wintering. This species inhabits stream as well as pond habitats. Stream habitat must contain large, deep pool areas (six feet) with moderate-to-good plant and debris cover, and rock and cobble substrates for escape retreats (Todd, 1993; Bury, 1993). Preferred depth in pond habitat is between three to five feet with mud substrate. Dense inshore vegetation is especially critical for hatchlings where they spend the first few years of life. Turtles from riverine systems over-winter in upland areas, while pond dwellers may remain as permanent residents with only nesting forays performed annually by gravid females (Rathbun et al., 1993). There are three known occurrences in the Hollister and Tres Pinos quadrangles. The nearest recorded occurrence is located approximately 2.5 miles northwest of the project site. There is no aquatic habitat for this species on the project site; however, due to their occurrence in the vicinity of the project site, they could use uplands habitat for breeding and dispersal.

San Joaquin whipsnake. This species is a California Species of Special Concern. The range of the San Joaquin whipsnake extends from Colusa County in the Sacramento Valley to Kern County in the San Joaquin Valley and westward into the inner south coast ranges. An isolated population occurs in the Sutter Buttes. Preferred habitat includes open, dry, treeless areas, including grassland and saltbush scrub. This species takes cover in rodent burrows, bushes, trees, and rock piles. They hibernate approximately one foot underground in soil or sand and are diurnal, typically active from March through October. There is one known occurrence of San Joaquin whipsnake in the Hollister and Tres Pinos quadrangles. The nearest recorded occurrence is located approximately 5.8 miles northwest of the project site. Annual grassland within the project site could provide marginal habitat.

California condor. This bird is a state-listed Threatened species, a federally listed Endangered species, and a California Fully Protected species occurring in the semi-arid rugged mountain ranges surrounding the southern San Joaquin Valley including the Coast Range and the southern Sierra Nevada Range. The California condor is North America's largest land bird, with a wingspan exceeding nine feet. This species forages over wide areas of open rangeland feeding on carrion, typically cattle and deer, and roosting on cliffs and in large trees and snags. They nest in caves, crevices, or on large ledges on high cliffs and can fly over 35 miles from roosting sites to feeding sites. The California condor occurs in Pinnacles National Monument located 30 miles south of Hollister and is known to range as far as Livermore to the north, Santa Barbara County to the south, and the Big Sur Coast to the west. This species could overfly the project site while foraging; however, there is no suitable roosting or nesting habitat on the project site.

Golden Eagle. This bird is a California Fully Protected species, and protected under the federal Bald Eagle and Golden Eagle Protection Act (16 USC 668-688). It inhabits various open terrain throughout the state, including grassland, open woodland, and mountainous areas. It primarily feeds upon lagomorphs and large rodents. Golden eagles were observed in areas surrounding the project site during field surveys. They could potentially forage over the project site; however, there are no suitable nesting areas near the project area.

Loggerhead shrike. This bird is a California Species of Special Concern. Loggerhead shrike inhabits semi-open country throughout most of the lower areas of the state. It occurs along woodland edges and in grassland with scattered trees, shrubs, or other hunting perches. This species was not observed during field surveys; however, they could use the project site as foraging habitat.

Northern harrier. This bird is a California Species of Special Concern. Northern harrier inhabits meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands and is seldom found in wooded areas. It forages mostly on voles and other small mammals, birds, frogs, small reptiles, crustaceans, insects, and, rarely on fish. Breeding occurs April to September, with peak activity June through July. Destruction of wetland habitat, native grassland, and moist meadows, and the burning and plowing of nesting areas during early stages of breeding cycle, are major reasons for the decline (Remsen 1978). There are no recorded occurrences in the Hollister and Tres Pinos quadrangles. This species may use the project site as foraging habitat; however, it was not observed during field surveys.

White-tailed kite. This bird is a California Fully Protected species. It is a small raptor with a total length of about 12 inches and is often identified from a distance by its hovering or "kiting" behavior while hunting. White-tailed kites predate mostly on voles and other diurnal mammals, but will occasionally prey on birds, insects, reptiles and amphibians. It typically forages in open grasslands and emergent wetlands. White-tailed kite nests in dense foliage in treetops near grassy foothills, marshes, riparian woodland, savanna, and partially cleared fields. It prefers oak, willow, sycamores, or other tree stands. White-tailed kites range from western California and southwestern Oregon to southeastern Arizona, and along the Gulf Coast from Texas to Florida, and peninsular Florida (Wheeler and Clark, 1995). It is a non-migratory resident of coastal and valley lowlands in cismontane California, where it is found in herbaceous and open stages of most habitats and generally near agricultural lands (Zeiner et al., 1990). There were no recorded nesting occurrences of white-tailed kite in the Hollister or Tres Pinos quadrangles; however, this species could use the project site as foraging habitat.

Special-status bats. These include western red bat (*Lasiurus blossevillii*) and western mastiff bat (*Eumops perotis*), which could occur in the vicinity of the project site. Bat species require foraging habitat, night roosting sites, day roosting sites, and maternity roosting sites. Bats can forage in a variety of habitats including annual grasslands, agricultural lands, and wetlands. There are two known occurrences of western red bat and western mastiff bat in the Hollister area; although the exact recorded location is not known. Either of these species could use the project site as foraging habitat; however, the project site does not provide any maternity roosting habitat or day and night roosting habitat. No evidence of bat species was observed during field surveys and it is not likely that these species occur on the project site.

Table 22.
Regional Species and Habitats of Concern

Scientific Name	Common Name	Status[1]	Habitat	Habitat Present	Rationale
PLANTS					
Malacothamnus aboriginum	Indian Valley bush-mallow	1B.2	Open rocky slopes at elevation of 500-5,600 feet	No	Lack of suitable habitat
Astragalus t. var. *tener*	Alkali milk vetch	1B	Alkali playa, valley and foothill grasslands and vernal pools at elevation of 3-200 feet	No	Project site occurs at 700-800 feet elevation
Erodium macrophyllum	Round-leaved filaree	2	Cismontane woodland and valley and foothill grassland habitat in clay soils at elevation of 40-3,600 feet	Possible	Suitable habitat present, though not observed during blooming period
Eriogonum nortonii	Pinnacles buckwheat	1B	Chaparral and valley and foothill grasslands at recent burn sites at elevation of 1,000-3,000 feet	No	Nearest recorded occurrence is six miles southwest, project site occurs at 700-800 feet elevation
Atriplex joaquiniana	San Joaquin spearscale	1B	Chenopod scrub, meadows and seeps, and valley and foothill grasslands on alkaline soils	No	Lack of suitable habitat
Amsinckia douglasiana	Douglas' fiddleneck	4	Cismontane woodland and valley and foothill grasslands at elevations up to 6,400 feet	No	No recorded occurrences within Tres Pinos or Hollister quadrangles
Eryngium aristulatum var. *hooveri*	Hoover's button-celery	1B	Vernal pools at elevation of 10-150 feet	No	Lack of suitable habitat, project site occurs at 700-800 feet elevation
Camissonia benitensis	San Benito evening primrose	1B	Chaparral and cismontane woodland habitats on serpentine soils at elevation of 1,900-4,200 feet	No	Lack of suitable habitat, project site occurs at 700-800 feet elevation
Monolopia congdonii	San Joaquin woolly-threads	FE, 1B	Chenopod scrub and valley and foothill grasslands on sandy soils at elevation of 200-2,600 feet	No	Nearest recorded occurrence is 36 miles east-southeast in 1988

Table 22.
Regional Species and Habitats of Concern

Scientific Name	Common Name	Status[1]	Habitat	Habitat Present	Rationale
INVERTEBRATES					
Optioservus canus	Pinnacles optioservus riffle beetle	CSC	Chalone Creek, Pinnacles National Monument	No	Lack of suitable habitat
AMPHIBIANS					
Rana draytonii	California red-legged frog	FT	Ponds, pools, wetlands	Marginal	No aquatic habitat onsite, possibly upland or dispersal habitat
Ambystoma californiense	California tiger salamander	FT, CT	Seasonal pools and stock ponds	Marginal	No aquatic habitat onsite, possibly upland or dispersal habitat
Spea hammondii	Western spadefoot	CSC	Seasonal wetlands and vernal pools	Marginal	No aquatic habitat onsite, possibly upland or dispersal habitat
REPTILES					
Emmys m. marmorata	western pond turtle	CSC	Associated with permanent water sources possessing suitable basking sites	No	No aquatic habitat onsite
Masticophis flagellum ruddocki	San Joaquin whipsnake	CSC	Open, dry, treeless areas, including grassland and saltbush scrub	Marginal	Annual grassland provides marginal habitat
BIRDS					
Gymnogyps californianus	California condor	FE	Open grassland with cliffs, large trees, or caves.	Possible	Habitat present
Falco mexicanus	Prairie falcon	WL	Grasslands, shrub-steppe, deserts, and other open areas of the West up to about 10,000 feet	Possible	Habitat present, but human presence/activity may disturb species
Athene cunicularia	Burrowing owl	CSC	Short grass prairie and is associated with the excavations of burrowing mammals	Possible	Habitat present, but poor visibility and threat of predation onsite
Eremophila alpestris actia	California horned lark	WL	Open terrain where they construct nests on the ground, often in sparsely vegetated area	Possible	Habitat present, but human presence/activity may disturb species

Table 22.
Regional Species and Habitats of Concern

Scientific Name	Common Name	Status[1]	Habitat	Habitat Present	Rationale
MAMMALS					
Vulpes macrotis mutica	San Joaquin kit fox	FE, CT	Grasslands or grassy open stages of vegetation dominated by scattered brush, shrubs, and scrub	Possible	Vegetation height onsite does not favor a resident population or SJKF
Taxidea taxus	American badger	CSC	Open grassland with ground squirrel burrows	Yes	Potential habitat present adjacent to John Smith Road

[1] Status:

FE = Federal Endangered
FT = Federal Threatened
FC = Federal Candidate
CSC = California Species of Concern
CE = California State Endangered
CT = California State Threatened
WL = Watch List

Source: CNDDB, 2011.

4.4.1.8 Nuisance Species Abatement Procedures

Nuisance species, such as gulls, corvids, rodents and mosquitoes are often attracted to activities at landfills. Currently, separated scrap metal is properly contained in bins to prevent habitation by nuisance species per the approved SWFP. Gulls and corvids that loiter near the active working face of the landfill are often disturbed and scatter when operation equipment approaches. Although immediate implementation of a nuisance species abatement plan is not envisioned at the JSRL, this environmental document considers the potential, future implementation of a nuisance species abatement plan, which may include, but is not limited to, reducing availability of food supply at the JSRL by maintaining a small working face; use of blank firing guns and other pyrotechnics, paintball guns, trained falcons, trucks/all-terrain vehicles, and propane cannons by JSRL personnel to minimize birds' desire to land at the landfill; compaction and daily cover of refuse with soil to eliminate the potential of rodents and/or flies; and installation of a network of overhead wires suspended in a lattice formation to deter avian species from using this site.

4.4.2 Regulatory Setting

This section describes federal, state and local laws, regulations and policies pertaining to biological resources with potential applicability to the proposed project.

4.4.2.1 Federal Regulations

The following Federal regulations may apply to resources within the study area. These regulations are briefly described below.

4.4.2.1.1 Federal Endangered Species Act

The federal Endangered Species Act (ESA), administered by the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries, defines "take" (Section 9) and generally prohibits the "taking" of a species listed as endangered or threatened (16 USC. 1532, 50 CFR 17.3). Under the ESA, the "take" of a federally listed species is deemed to occur when an intentional or negligent act or omission causes the agent of the action "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The term "harm" includes acts that actually kill or injure wildlife. Such acts may include significant habitat modification or degradation when it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 7 of the ESA requires federal agencies, in consultation with the Secretary of the Interior, to ensure that their actions do not jeopardize the continued existence of endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat for these species.

Section 10(a) of the ESA allows for consultation between a project proponent and USFWS/NOAA Fisheries in the absence of a "federal nexus". Under Section 10(a), the project proponent and USFWS/NOAA Fisheries will discuss the potential adverse effects of the project on federally listed species and discuss measures to avoid, minimize, and mitigate for those effects. Section 10(a) requires preparation and approval (by USFWS/NOAA Fisheries) of a Habitat Conservation Plan before USFWS/NOAA Fisheries can authorize the project or issue an Incidental Take Permit.

4.4.2.1.2 Section 404, Clean Water Act

The objective of the Clean Water Act (CWA 1977, as amended) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands, is regulated by the Corps under Section 404 of the CWA (33 USC 1251-1376). Corps regulations implementing Section 404 define waters of the United States to include intrastate waters, including lakes, rivers, streams, wetlands, and natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce. Wetlands are defined for regulatory purposes as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3; 40 CFR 230.3). To comply with the Section 404 policy that there be no net loss of wetland function, discharge into wetlands must be avoided and minimized to the maximum extent practicable. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland functions in the watershed.

The placement of structures in, under, or over "navigable waters of the United States" is also regulated by the Corps under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 401 et seq.). Projects are permitted under either individual or general (i.e., nationwide) permits. The specific applicability of the permit types is determined by the Corps on a case-by-case basis.

4.4.2.1.3 Migratory Bird Treaty Act

The USFWS administers the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711) and the Bald Eagle and Golden Eagle Protection Act (16 USC 668-688). The MBTA prevents the removal of trees, shrubs, and other structures containing active nests of migratory bird species that may result in the loss of eggs or nestlings. Adherence to construction windows either before the initiation of breeding activities or after young birds have fledged is a typical step to protect migratory birds and comply with the MBTA. The Bald Eagle and Golden Eagle Protection Act prohibits the taking or possession of bald and golden eagles, their eggs, or their nests without a permit from the USFWS.

4.4.2.2 State Regulations

The following State of California regulations may apply to resources within the study area. These regulations are briefly described below.

California Endangered Species Act

Under the California Endangered Species Act (CESA), the CDFG is responsible for maintaining a list of endangered and threatened species (California Fish and Game Code 2050 et seq.). The CDFG also maintains a list of "candidate species," which are species that the CDFG formally notices as being under review for addition to the list of endangered or threatened species. The CDFG also maintains lists of "species of special concern," which serve as species "watch lists."

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the project area and determine whether the proposed project could have a significant impact on such species. In addition, the CDFG encourages informal consultation on any proposed project that may affect a candidate species.

Project-related impacts to species listed as threatened or endangered under the CESA would be considered significant. State-listed species are regulated consistent with the requirements of the CESA. "Take" of protected species incidental to otherwise lawful management activities may be authorized under California Fish and Game Code Section 2081. Authorization from the CDFG would be in the form of an Incidental Take Permit.

Streambed Alteration Agreement (Sections 1600-1616 of the California Fish and Game Code)

Pursuant to Section 1602 of the Fish & Game Code, a Lake or Streambed Alteration Agreement (LSAA) between the CDFG and state or local governmental agency, public utility, or private citizen is required before the initiation of a construction project that will: (1) divert, obstruct, or change the natural flow or the bed, channel, or bank of a river, stream, or lake; (2) use materials from a streambed; or (3) result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake.

Native Plant Protection Act

The Native Plant Protection Act (California Fish and Game Code Sections 1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered, as defined by the CDFG.

Bird Nests and Eggs

Section 3503 of the California Fish & Game Code specify that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.

Birds of Prey

Under Section 3503.5 of the California Fish and Game Code, it is unlawful to take, possess, or destroy any birds in the orders of Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird, except as otherwise provided by this code or any regulation adopted pursuant thereto.

Migratory Birds

The State Fish and Game Code Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the federal MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

Section 401 Water Quality Certification

The Regional Water Quality Control Board (RWQCB) is responsible for enforcing and protecting water resources with the State of California. The RWQCB also regulates the discharge of wastes to surface waters through the NPDES permit process. Waste Discharge Requirements are established in National Pollutant Discharge Elimination System (NPDES) permits to protect beneficial uses.

Pursuant to Section 401 of the Clean Water Act, the Corps cannot issue a federal permit until the State of California first issues a water quality certification to ensure that a project will comply with state water quality standards. The authority to issue water quality certifications in the project area is vested with the Central Coast RWQCB.

4.4.2.3 Local Policies

4.4.2.3.1 San Benito County General Plan

The San Benito County General Plan contains goals and policies relevant to biological resources issues. Policies applicable to the land use designation and zoning change and the proposed landfill expansion are outlined below.

Land Use Element (Overall County)

Policy 32 Specific development sites shall be free from the hazards identified within the Open Space and Conservation Element Maps (e.g. faults, landslides, hillsides over 30% slope, flood plains). The site shall also be on soil suitable for building and maintaining well and septic systems (i.e. avoid impervious soils, high percolation or high groundwater areas, set back from creeks). Absent adequate mitigation, development shall not be located on environmentally sensitive lands (wetlands, erodable soil, archaeological resources, important plant and animal communities).

Policy 33 Specific development sites shall avoid, when possible, locating in an environmentally sensitive area (wetlands, erodable soils, important plant and animal communities, archaeological resources).

Open Space and Conservation Element

Policy 1 Major subdivisions or intense development shall not be allowed within potential habitat of Federal or State listed rare, threatened, or endangered plant or animal species until said development(s) prepares habitat plans for the species unless an interim measure has been taken to mitigate the effect of development.

Policy 3 Mitigation for wetland development. Development shall be sited to avoid encroachment on wetlands. Mitigation shall be required for any development proposals that have the potential to reduce wetland habitat from primary or secondary effects of the development.

Policy 4 Avoid loss of habitat from other mitigation measures. Mitigation measures to reduce other environmental hazards (e.g. fire hazard, flood hazard, soil erosion) shall not be acceptable if they will significantly degrade existing habitat, riparian areas, or isolate habitat.

Policy 7 Grading, erosion, and native tree removal. It is the policy of the County to minimize erosion resulting from grading and cutting and native tree removal for all development proposals.

Policy 18 Protect rural atmosphere and natural resources. General Plan Amendments, Specific Plans, Area Plans, and Area of Special Study that result in a net increase in general plan buildout (Table 1 of the Land Use Element), shall include methods to conserve open space for natural resources including agriculture, wildlife habitat, and water (e.g. conservation easements and/or other similar resource protection measures). Proposed development areas shall also include measures to protect resources on-site and contiguous to the project with the use of clustering, conservation easements, and other similar programs.

4.4.3 Methods and Significance Criteria

Impacts on biological resources in natural or semi-natural areas due to development can be direct or indirect. Direct impacts include habitat loss and fragmentation, and conversion of native communities to developed conditions. Indirect impacts include invasion of non-native plants into natural areas, noise disturbances, and declines in air and water quality.

Impacts to biological resources are considered significant if the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG, USFWS, or NMFS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulation, or by the CDFG, USFWS, or NMFS.
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery site.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.
- Conflict with any San Benito County polices or ordinances protecting biological resources.
- Substantially degrade the quality of the environment, substantially reduce the habitat of a fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of an endangered, rare or threatened species.
- Cause a fish or wildlife population to drop below self-sustaining levels.
- Threaten to eliminate a plant or animal community.
- Substantially reduce the number or restrict the range of an endangered, rare or threatened species.

4.4.4 Potential Environmental Effects

a) *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

Less Than Significant With Mitigation Incorporation. The project area is located within the USGS 7.5' Tres Pinos quadrangle, and according to the USFWS, several special-status species have the potential to occur within the USGS 7.5' Tres Pinos quadrangle (USFWS, 2011). Based on the literature review and consultation with resource agencies (USFWS, 2011), a list of special-status species that have been reported in the vicinity of the project site (Tres Pinos and Hollister quadrangles), or within San Benito County, has been compiled (**Table 22**). A large number of special-status species have been reported from this general area; however, only one species (San Joaquin kit fox) has been recorded within one mile of the project site (**Figure 9**). While, the likelihood of sensitive species occurrence has been determined to be low, the incorporation of habitat site assessment, resource agency coordination and remedial action (if necessary) measures will ensure that significant impacts to these resources are avoided.

<u>California Tiger Salamander</u>
The proposed project area does not support breeding habitat for CTS and is not located within Critical Habitat for the species; however, the site is located approximately one mile from designated CTS Critical Habitat. Based on an analysis of aerial photography, the nearest aquatic breeding habitat (pond) is approximately 0.75-mile from the site; however, there could be other ephemeral pools not evident on the aerial mapping. Implementation of the project would not result in the loss or disturbance of breeding ponds; however, due to the presence of aquatic habitat within two kilometers of the project site, the project site is within the dispersal range of suitable aquatic habitat and could provide upland habitat for CTS. Construction activities and long-term operational activities at the proposed project site would create a potential for impacts to this species. Implementation of **Mitigation Measure 1** would reduce this impact to ***less than significant***.

Mitigation Measure 1: The County, as owner of the project area, shall implement the following impact minimization and avoidance measures to reduce or compensate for impacts to CTS.

MM 1(a). *A Habitat Site Assessment shall be conducted for the project site and shall be submitted to the CDFG and USFWS. If the Habitat Site Assessment determines that no impacts to CTS would result from project implementation and CDFG and USFWS concur, then no further action is required and impacts are less than significant.*

MM 1(b). *If, based on the Habitat Site Assessment, the USFWS and CDFG determines that potential impacts could result from project implementation, the*

County, as owner of the project area, shall consult with USFWS and CDFG through the permit application process to secure proper authorization under FESA and CESA, respectively. Avoidance and minimization measures are likely to include pre-construction surveys, seasonal construction restrictions, erection of protective barriers, collection and relocation of individuals, environmental training of workers, site monitoring during construction, site restoration, and implementation of construction practices that would avoid specific areas. Loss of CTS habitat may be compensated through a combination of: 1) creation of replacement habitat; 2) habitat preservation through transfer of fee title or Conservation Easement; 3) acquisition of credits at an approved mitigation bank; 4) in-lieu contribution to a regional habitat restoration fund; and/or 5) other compensatory measures that are deemed acceptable by the USFWS and CDFG.

<u>California Red-legged Frog</u>
The project site does not support breeding habitat for CRLF and is not located within an area designated as Critical Habitat for the species. Based on an analysis of aerial photography, the nearest potential aquatic breeding habitat (pond) is approximately 0.75-mile from the site. Implementation of the proposed project would not result in the loss or disturbance of aquatic habitat; however, due to the presence of aquatic habitat within one mile of the project site, the project site has the potential to provide upland habitat for CRLF because it is within the dispersal range of suitable aquatic habitat. Construction activities and long-term operational activities at the proposed project site would create a potential for impacts to CRLF. Implementation of **Mitigation Measure 2** would reduce this impact to ***less than significant***.

Mitigation Measure 2: The County, as owner of the project area, shall implement the following impact minimization and avoidance measures to reduce or compensate for impacts to CRLF.

MM 2(a). *A Habitat Site Assessment shall be conducted for the project site and shall be submitted to the USFWS. If the Habitat Site Assessment determines that no impacts to CRLF would result from implementation of the proposed project and USFWS concurs, then no further action is required and impacts are less than significant.*

MM 2(b). *If, based on the Habitat Site Assessment, the USFWS and CDFG determines that potential impacts could result from implementation of the proposed project, the County shall consult with USFWS through the permit application process to secure proper authorization under FESA. Avoidance and minimization measures are likely to include pre-construction surveys, seasonal construction restrictions, erection of protective barriers, collection and relocation of individuals, environmental training of workers, site monitoring during construction, site restoration, and implementation of construction practices that would avoid specific areas. Loss of CRLF habitat may be compensated through a combination of: 1) creation of replacement habitat; 2) habitat preservation through Conservation Easement; 3) acquisition of credits at an approved mitigation bank; 4) in-lieu* *contribution to a regional habitat restoration fund; and/or 5) other compensatory measures that are deemed acceptable by the USFWS and CDFG.*

<u>San Joaquin Kit Fox</u>
The SJKF has been known to occur in the project vicinity. There was no evidence of SJKF observed at the project site during biological surveys, but due to the presence of annual grassland habitat and ground squirrel burrows, there is potential that the project site could provide SJKF habitat. The nearest recorded kit fox occurrences include one occurrence within one mile of the site and three within two miles of the site. However, none of these are contemporary occurrences and all are from 1975 earlier. In 2004, a SJKF pre-construction survey was conducted for the John Smith Road Landfill lateral expansion. No SJKF were observed during the pre-construction survey, although potential SJKF foraging and denning habitat was observed. Due to the known range of the SJKF and the high density of occurrences in surrounding areas there is potential for SJKF to occur on the project site. Implementation of **Mitigation Measure 3** would reduce this potential impact to a ***less-than-significant*** level.

Mitigation Measure 3: The County, as owner of the project area, shall implement the following impact minimization and avoidance measures to minimize impacts to San Joaquin kit fox.

MM 3(a). *To determine if there is the potential for SJKF to be present on the project site, the Early Evaluation Requirements included in the USFWS San Joaquin Kit Fox Survey Protocol for the Northern Range shall be met. Transect surveys shall be conducted, habitat suitability analysis shall be conducted, and a report for submittal to the USFWS and CDFG shall be prepared.*

MM 3(b). *If the project site is determined to be potential habitat, protocol-level surveys will be required by the USFWS and CDFG to determine presence/absence of SJKF dens on the project site. If SJKF are determined to occur on the project site, take authorization will be necessary to comply with FESA and CESA. Compensatory mitigation shall be developed in coordination with the USFWS and CDFG to assure that it meets permit issuance criteria, and may require a minimum habitat replacement ratio of 3:1. In addition, avoidance and minimization measures shall be implemented in coordination with the USFWS and CDFG to avoid the take of SJKF during construction activities. Acquisition or set-aside of upland habitat for SJKF mitigation may satisfy habitat mitigation for other species if required, including western burrowing owl, American badger, and/or CTS or CRLF upland habitat replacement.*

MM 3(c). *If SJKF is not determined to occupy the project site, the annual grassland could provide foraging habitat for the SJKF denning in the vicinity of the project site. Implementation of the proposed project would not result in a substantial loss of foraging habitat due to the abundance of annual grasslands surrounding the project site to the east, south and west; however, if the site is determined to provide foraging habitat, the loss of foraging habitat will require mitigation. If project activities result* *in the loss of SJKF foraging habitat, the project shall pay the kit fox habitat impact fee per County Ordinance 541* (San Benito County Code, Chapter 19.19).

Western Burrowing Owl
Development of the proposed project would result in the loss of annual grassland habitat, which could provide suitable habitat for the western burrowing owl. Burrowing owls were not observed during field surveys; however, the occurrence of annual grassland habitat and the presence of ground squirrel burrows provides potential habitat for this species. Construction activities and long-term operational activities of the proposed project could create a potential for impacts to western burrowing owl. Implementation of **Mitigation Measure 4** would reduce this impact to ***less than significant***.

Mitigation Measure 4: The County, as owner of the project area, shall implement the following impact minimization and avoidance measures, based on the proposed Burrowing Owl Survey Protocol and Mitigation Guidelines from the Burrowing Owl Consortium (1993) to assure no impact to burrowing owls.

MM 4(a). *A burrowing owl habitat assessment survey shall be conducted for the project site in accordance with the Phase I Habitat Assessment and Phase II Burrow Survey components outlined in the Burrowing Owl Survey Protocol and Mitigation Guidelines. In the event suitable burrows are located, evidence of burrowing owl occupancy is observed, or burrowing owls are present, implementation of the Phase III Burrowing Owl Surveys, Census and Mapping Procedures may be required by CDFG.*

MM 4(b). *If, based on the Phase I and Phase II habitat assessments, burrowing owls are not determined to occur on the project site but potential habitat does occur on the project site, pre-construction surveys may be required by CDFG within 30 days prior to project implementation to ensure that burrowing owls have not inhabited the project site between completion of the protocol surveys and project implementation.*

MM 4(c). *If, based on the habitat assessments, burrowing owls are determined to be present on the project site, burrowing owls within the impact area can be passively relocated (with the use of one-way doors) during the non-breeding season (September 1 through January 31). Passive relocation shall be conducted by a qualified biologist in coordination with CDFG. A burrowing owl burrow excavation and/or relocation plan shall be subject to CDFG review and approval prior to implementation.*

MM 4(d). *If burrowing owl occurs on the project site and are not passively relocated prior to the initiation of nesting season (February 1), then occupied burrows shall not be disturbed until the young have fledged the nest and a 250-foot buffer shall be established around the occupied burrow to prevent the encroachment of construction activities on the burrowing owl nest.*

Special-Status Reptile and Amphibian Species

Development of the proposed project would not result in the loss or disturbance of aquatic habitat for special-status reptile or amphibian species; however, due to the occurrence of potential aquatic habitat within one mile of the project site, the site could provide potential upland or dispersal habitat for western spadefoot toad and NPPT. Construction activities and long-term operational activities of the proposed project could create a potential for impacts to western spadefoot toad and NPPT. Implementation of **Mitigation Measure 5** would reduce this impact to ***less than significant***.

Mitigation Measure 5: The County, as owner of the project area, shall implement the following impact minimization and avoidance measures, subject to the approval and amendment by the USFWS and CDFG, to reduce or compensate for potential impacts to special-status reptile and amphibian species.

MM 5(a). *Wetted areas and other environmentally sensitive areas near the work area shall be staked and flagged to prevent equipment encroachment, and a barrier shall be erected to eliminate wildlife entrance to the work zone;*

MM 5(b). *A qualified biologist shall conduct pre-construction surveys of the project site; prepare and present a worker environmental awareness training for construction workers; and direct the installation of fencing or protective barriers to prevent species from entering work areas;*

MM 5(c). *If individual special-status reptile and amphibians are found in construction areas, all work in the vicinity of the species shall be halted until a qualified biologist relocates the animal to a site approved by the CDFG or USFWS. The CDFG and/or USFWS shall be consulted for additional mitigation measures;*

MM 5(d). *During project construction activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas;*

MM 5(e). *All refueling, maintenance, and staging of equipment and vehicles shall occur at least 60 feet from riparian habitat or water bodies and not in a location from where a spill would drain directly toward aquatic habitat. Prior to the onset of work, the County shall ensure that a plan is in place for prompt and effective response to any accidental spills. All workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur;*

MM 5(f). *The number of access routes, size of staging areas, and the total area of construction activities shall be minimized. Environmentally Sensitive Areas shall be established to confine access routes and construction areas to the minimum area necessary to complete construction, and minimize the impact to sensitive habitats; this goal includes locating access routes and construction areas outside of wetlands and riparian areas to the maximum extent practicable;*

MM 5(g). *To control sedimentation during and after project development, the County and its contractors shall implement Best Management Practices outlined in any authorizations or permits, issued under the authorities of the Clean Water Act. If best management practices are ineffective, the County shall attempt to remedy the situation immediately, in consultation with the USFWS and CDFG.*

<u>San Joaquin Whipsnake</u>
Although the project site provides marginal habitat for the San Joaquin whipsnake, the annual grassland cover could provide potential habitat for this species. Construction and long-term operational activities of the proposed project could impact the San Joaquin whipsnake if present on the project site. Implementation of **Mitigation Measure 6** would reduce this impact to ***less than significant***.

Mitigation Measure 6: Pre-construction surveys for the San Joaquin whipsnake shall be conducted by a qualified biologist.

Pre-construction surveys for San Joaquin whipsnake can be conducted in coordination with pre-construction surveys for other species.

If San Joaquin whipsnakes are found during pre-construction surveys of the project site, they shall be moved to suitable habitat at least 500 feet outside the construction impact area. If a whipsnake nest is found during pre-construction surveys, a 100-foot buffer shall be established to prevent construction disturbance until the eggs have hatched.

The San Joaquin whipsnake shall be included in the Worker Environmental Awareness Training Program to be presented to all workers prior to project implementation.

<u>American Badger</u>
American badger is known to occur in the vicinity of the proposed project site and the site provides potential habitat for the badger. Development of the proposed project could impact the American badger if this species is present in dens onsite during construction. Construction and operation of the project could result in direct impacts including destruction of a breeding den during earth-moving activities, or could result in indirect impacts including den abandonment due to noise or ground disturbance in the vicinity of a breeding den. Implementation of **Mitigation Measure 7** would reduce this impact to ***less than significant***.

Mitigation Measure 7: Pre-construction surveys for American badger dens shall be conducted.

To determine if active badger dens are present on the project site, pre-construction surveys for badger dens shall be conducted. Pre-construction badger den surveys can be conducted concurrently with kit fox and burrowing owl surveys as outlined in Mitigation Measures 3 and 4 above.

If active badger dens are present on or adjacent to the project site, an avoidance buffer shall be maintained between the den and construction activities during pupping season (i.e., February 15 through July 1 or as otherwise determined through surveys and monitoring of the den). The appropriate buffer size shall be determined in consultation with the CDFG. Any active dens that cannot be avoided may be vacated during the non-pupping season by a qualified biologist in consultation with CDFG. Appropriate compensatory mitigation shall be determined in consultation with CDFG, as needed.

b) *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*

No Impact. The project would not have an adverse effect on riparian habitat or any sensitive natural communities as identified by the CDFG or USFWS. The project area is comprised of annual grassland and ruderal vegetation. No riparian habitat or sensitive natural communities are present within the project area.

c) *Would the project have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal wetlands, etc.), through direct removal, filling, hydrological interruption or other means?*

Less Than Significant. USFWS wetland mapping indicates that an approximately 0.45 acre freshwater pond is present within the closed Class I footprint; however, historic aerial imagery dating back to 1998 does not indicate the presence of water at that location. As indicated on **Figure 6**, a stormwater detention basin is located in the southwest portion of the project area; however, the proposed project would not impact the stormwater detention basin. Therefore, this impact is considered less than significant.

d) *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*

Less Than Significant. The proposed project area does not contain any water features that allow for the movement of migratory fish. The grassland area within proposed project footprint is utilized for foraging by a herd of deer. The deer are not deterred by the existing operations onsite and because equipment operation would remain constant, it is anticipated that implementation of the proposed project would not result in displacement of the deer. This impact is considered less than significant.

e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

Less Than Significant. The San Benito County General Plan Open Space and Conservation Element contains a number of policies that when implemented, protect biological resources. The proposed project would not conflict with the General Plan policies.

f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan?*

No Impact. No habitat conservation plans (HCP), or natural community conservation plans (NCCP) are in effect for this project. In April 1988, the County of San Benito adopted Ordinance No. 541 (San Benito County Code, Chapter 19.19) which established a habitat conservation plan study area for the San Joaquin kit fox and set interim mitigation fees for the preparation and adoption of a HCP. As of the time of preparation of this document, the HCP has not yet been prepared or adopted by the County.

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4.5 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?		✓		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?		✓		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		✓		
d) Disturb any human remains, including those interred outside of formal cemeteries?		✓		

4.5.1 Environmental Setting

The existing landfill footprint has been previously graded and is the site of existing landfilling operations. In January 2012, Pacific Legacy conducted a pedestrian archaeological survey of the proposed lateral expansion area. A record search was conducted through the North West Information Center (NWIC), one of the regional information centers of the California Historical Resources Information System (CHRIS) on January 12, 2012 for the project area and a ½-mile radius around the project area. In addition, records and maps of previously recorded prehistoric and historic sites were reviewed, as well as maps of previous cultural resources surveys in the region. In the APE, there are no previously recorded archaeological resources.

A letter was sent to the Native American Heritage Commission (NAHC) on January 12, 2012 requesting to search their Sacred Lands Inventory File and to provide a list of Native American representatives for the project area. The NAHC responded on January 24, 2012 that no sacred lands were present within the project area and provided a list of interested Native American tribes near the project area. A letter was sent to all tribes on the NAHC list on January 26, 2012. Follow up phone calls were conducted on February 2nd. No written responses were received within 30 days of transmittal of the letters to the tribes; therefore, consultation is considered complete.

Pacific Legacy archaeologists conducted a pedestrian survey for cultural resources on January 25, 2012. The surface of the proposed project area was inspected by walking 15 meter transects. The survey was designed to identify both historic and prehistoric cultural resources present within the project area. The survey was conducted to meet the standards set by the Secretary of the Interior (United States Department of the Interior, National Park Service 1983; 1990). No historic era or ancestral Native American cultural resources were identified as a result of this cultural resources survey.

4.5.2 Regulatory Setting

4.5.2.1 Federal Laws and Regulations

Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470f, as amended, Pub. L. 89-515) and its implementing regulations (36 C.F.R. Part 800) protect properties that are significant at local, state and national levels. It also requires that public agencies provide the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on actions that will directly affect properties included in or eligible for inclusion in the National Register of Historic Places. Section 106 of the NHPA applies only to projects that are federally funded, regulated, or permitted; however, the criteria for evaluating eligibility for the National Register may be used in a CEQA context to help determine the significance of a cultural resource site.

The criteria for evaluating National Register eligibility or significance of historic properties are as follows. Properties are significant if they:

- are associated with events that have made a significant contribution to the broad patterns of our history; or
- are associated with the lives of persons significant in our past; or
- embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- have yielded, or may be likely to yield, information important in prehistory or history.

4.5.2.2 State Laws and Regulations

Section 5020 et seq. of the California Public Resources Code establishes the California Register of Historic Resources, a listing of significant historic resources in the State similar to the National Register of Historic Places at the national level. National Register of Historic Places listed or eligible properties located in California are automatically listed in the California Register of Historic Resources. To be eligible for the California Register, an historical resource must be significant at the local, state, or national level under one or more of the following criteria:

- It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States; or

- It is associated with the lives of persons important to local, California, or national history; or
- It embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values; or
- It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

The principal State regulations relating to preserving historic and archaeological properties are Public Resources Code Section 5020 et seq., CEQA Sections 21083.2 and 21084.1, and CEQA Guidelines Section 15064.5. For purposes of CEQA, "historical resources" include:

- A resource listed in, or determined eligible for listing in, the California Register of Historical Resources (CRHR);
- A resource included in a local register of historical resources adopted pursuant to a local ordinance or resolution, or included in a historical resource survey, meeting the requirements of California Public Resource Code Section 5024.1(g); or
- Any resource that the lead agency deems to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.

CEQA also applies to effects on archaeological resources that are historical resources. For purposes of CEQA analysis of significant effects on the environment, an archaeological resource that is not also a historical resource must be "unique" – i.e., there must be a high probability that it: (1) contains information needed to answer important scientific research questions, and that it is the subject of demonstrable public interest; (2) has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) is directly associated with a scientifically recognized prehistoric or historic event or person.[8]

CEQA specifies that a project that may cause a substantial adverse change in a significance of a historical resource may have a significant effect on the environment.[9] A substantial adverse change includes physical demolition, destruction, relocation or alteration of the resource such that the significance of a resource is materially impaired.[10]

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[8] California Pub. Res. Code Section 21083.2(a) and (g)

[9] California Pub. Res. Code Section 21084.1

[10] 14 CCR Section 15064.5(b)

A lead agency must identify potentially feasible measures to mitigate significant adverse changes in the significance of a historical resource.[11] Generally, mitigation measures for reducing or avoiding historic resource impacts are contained in the *Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings*.

CEQA also applies to significant effects on "unique" archaeological resources. If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require that reasonable efforts be made to leave the resource in place, or may require other mitigation subject to certain financial and timing limitations set forth by CEQA.[12] Impacts on non-unique archaeological resources need not be evaluated under CEQA.

4.5.2.3 Public Resources Code 5020 and 5024

- Properties that are listed in or eligible for listing in the National Register of Historic Places are considered eligible for listing in the CRHR, and thus are significant historical resources for the purpose of CEQA (Public Resources Code section 5024.1(d)(1)).
- The resource is included in a local register of historic resources, as defined in Sec. 5020.1(k) of the Public Resources Code, or is identified as significant in a historical resources survey that meets the requirements of Section 5024.1(g) of the Public Resources Code (unless the preponderance of evidence demonstrates that the resource is not historically or culturally significant).
- The lead agency determines the resource to be significant as supported by substantial evidence in light of the whole record.
- The lead agency determines that the resource may be a historical resource as defined in Public Resources Code sec. 5020.1(j) or 5024.1.

4.5.2.4 Local Policies

San Benito County General Plan

The San Benito County General Plan contains the following policies addressing cultural resources within the County:

Land Use Element (Overall County)

Policy 33 Specific development sites shall avoid, when possible, locating in an environmentally sensitive area (wetlands, erodable soils, important plant and animal communities, archaeological resources).

[11] 14 CCR Section 15064.5(b)(4)

[12] California Pub. Res. Code Section 21083.2(b) through (e)

Open Space and Conservation Element

Policy 54 Prohibit unauthorized grading of resources. It is the policy of the County to prohibit unauthorized grading, collection, or degradation of Native American, archaeological, or paleontological resources.

4.5.3 Methods and Significance Criteria

When determining the significance of a particular resource, criteria for eligibility under the NRHP and the CRHR may be used. The two programs are similar but not exactly the same, and a resource that may be found to be eligible under the state program but not necessarily eligible under the federal program.

In addition to the criteria for eligibility, a resource must also maintain integrity – the authenticity of an historical resource's physical identity as evidenced by the survival of characteristics that existed for listing during the resource's period of significance. Integrity is evaluated in regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Substantial adverse changes to a significant cultural resource would be a significant impact under CEQA. Substantial adverse changes to a significant resource include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings. Mitigation of a substantial adverse change to reduce or avoid the physical impacts typically include the following options:

- Avoidance and/or preservation in place; or
- Reduction of the adverse impact through data recovery, including a complete description of the resource, and appropriate curation of the information.

Avoidance and preservation of cultural resources are generally preferable wherever possible. Construction of the Project may adversely affect the recorded rock walls. However, no resources identified through this study or previous investigations were determined to be significant as that term is used to determine eligibility for the National Register and California Register and under CEQA. Therefore, no resource-specific mitigation measures are recommended.

4.5.4 Potential Environmental Effects

a) *Would the project cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?*

Less Than Significant with Mitigation Incorporation. Based on the January 2012 archaeological evaluations of the project area, no known historic resources are located within the proposed project area. However, there is always the potential to disturb unknown historic resources during construction activities. Implementation of **Mitigation Measure 8** would ensure that the proposed project would result in a less than significant impact to historic resources.

Mitigation Measure 8. If cultural resources, such as lithic materials or ground stone, historic debris, building foundations, or bone are discovered during ground-disturbance activities, work shall be stopped within 20 meters (66 feet) of the discovery, per the requirements of CEQA (January 1999 Revised Guidelines, Title 14 CCR 15064.5 (f)). If the proposed project receives federal funding, it may be considered a federal undertaking triggering the necessity to comply with Section 106 of the National Historic Preservation Act of 1966 as amended (NHPA). Inadvertent discoveries shall be treated as outlined in 43 CFR 10.4 and 36 CFR 800.13 (b) (2).

Work near the archaeological finds shall not resume until a professional archaeologist, who meets the *Secretary of the Interior's Standards and Guidelines*, has evaluated the materials and offered recommendations for further action.

Prehistoric materials which could be encountered include: obsidian and chert debitage or formal tools, grinding implements, (e.g., pestles, handstones, bowl mortars, slabs), locally darkened midden, deposits of shell, faunal remains, and human burials. Historic materials which could be encountered include: ceramics/pottery, glass, metal, cut bone, building pads, trails/roads, etc.

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?*

Less Than Significant with Mitigation Incorporation. Based on the January 2012 archaeological evaluations of the project area, no known archaeological resources are located within the proposed project area. There is always the potential to disturb unknown archaeological resources during construction activities; therefore, implementation of **Mitigation Measure 8** would ensure that the proposed project would result in a less than significant impact to prehistoric and historic resources.

c) *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geological feature?*

Less Than Significant with Mitigation Incorporation. The online database of the University of California Museum of Paleontology (UCMP) revealed that although 677 fossils have been collected from San Benito County, the vast majority of these (565) are microfossils. Some invertebrate fossils have been found, namely gastropods and bivalves. The 13 reported vertebrate fossils, including several species of large Pleistocene mammals, are mostly from locations in the central and southern portions of the county. No vertebrate fossils could be sourced to the project vicinity (UCMP, 2012). However, there is always the potential to disturb unknown paleontologic resources during construction activities. Implementation of **Mitigation Measure 8** would ensure that the proposed project would result in a less than significant impact to paleontologic resources.

d) *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

Less Than Significant with Mitigation Incorporation. It is not anticipated that any human remains would be encountered during construction of the proposed project; There is always the potential to disturb unknown human remains during construction activities; therefore, implementation of **Mitigation Measure 9** would ensure that the proposed project would result in a less than significant impact to potential human remain disturbance.

Mitigation Measure 9. If human remains are discovered during project construction, work shall stop at the discovery location, within 20 meters (66 feet), and any nearby area reasonably suspected to overlie adjacent to human remains (Public Resources Code, Section 7050.5). The San Benito County coroner shall be contacted to determine if the cause of death must be investigated. If the coroner determines that the remains are of Native American origin, it is necessary to comply with state laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (Public Resources Code, Section 5097). The coroner shall contact the NAHC. The descendants or most likely descendants of the deceased shall be contacted, and work shall not resume until they have made a recommendation to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in Public Resources Code, Section 5097.98. Work may resume if NAHC is unable to identify a descendant or the descendant failed to make a recommendation.

The following details procedures for treatment of an inadvertent discovery of human remains:

- Immediately following discovery of known or potential human remains all ground-disturbing activities at the point of discovery shall be halted.
- No material remains shall be removed from the discovery site, a reasonable exclusion zone shall be cordoned off.
- The Project Manager and property owner shall be notified and the Project Manager shall contact the County Coroner.
- The County of San Benito shall retain the services of a professional archaeologist to immediately examine the find and assist the process.
- The discovery site shall be secured to protect the remains from desecration or disturbance, with 24-hour surveillance, if prudent.
- Discovery of Native American remains is a very sensitive issue, and all project personnel shall hold any information about such a discovery in confidence and divulge it only on a need-to-know basis.
- The Coroner has two working days to examine the remains after being notified. If the remains are Native American, the Coroner has 24 hours to notify the NAHC in Sacramento (telephone (916) 653-4082).
- The NAHC is responsible for identifying and immediately notifying the Most Likely Descendant (MLD) of the deceased Native American.
- Within 24 hours of their notification by the NAHC, the MLD shall be granted permission by the landowner's authorized representative to inspect the

discovery site, if they so choose.

- Within 24 hours of their notification by the NAHC, the MLD shall recommend to the landowner and Project Manager means for treating or disposing, with appropriate dignity, the human remains and any associated grave goods. The recommendation may include the scientific removal and non-destructive or destructive analysis of human remains and items associated with Native American burials.
- Whenever the NAHC is unable to identify a MLD, or the MLD identified fails to make a recommendation, or the landowner or his/her authorized representative rejects the recommendation of the MLD and mediation between the parties by the NAHC fails to provide measures acceptable to the landowner, the landowner or his/her authorized representatives shall re-inter the human remains and associated grave offerings with appropriate dignity on the property in a location not subject to further subsurface disturbance.
- Following final treatment measures, the County of San Benito shall ensure that a report is prepared that describes the circumstances, nature and location of the discovery, its treatment, including results of analysis (if permitted), and final disposition, including a confidential map showing the reburial location. Appended to the report shall be a formal record about the discovery site prepared to current California standards on DPR 523 form(s). The County of San Benito shall ensure that report copies are distributed to the NWIC, NAHC and MLD.

4.6 Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			✓	
ii) Strong seismic ground shaking?			✓	
iii) Seismic-related ground failure, including liquefaction?			✓	
iv) Landslides?			✓	
b) Result in substantial soil erosion or the loss of topsoil?			✓	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		✓		
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			✓	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?			✓	

4.6.1 Environmental Setting

Regional Geology

The project area is located within the Coast Ranges geomorphic province of California. The Coast Ranges stretch approximately 600 miles from the Oregon border to the Santa Ynez River and fall into two sub-provinces: the ranges north of San Francisco Bay and those from the San Francisco Bay south to Santa Barbara County. The northern ranges lie east of the San Andreas Fault Zone, whereas most of the southern ranges are to the west. The province contains many elongate ranges and narrow valleys that are approximately parallel to the coast, although the coast usually shows a somewhat more northerly trend than do the ridges and valleys. Thus, some valleys intersect the shore at acute angles and some mountains terminate abruptly at the sea (Norris and Webb, 1990).

The dominant characteristic of the Coast Ranges is its division into elongate topographic and lithographic strips underlain by discrete basement rocks that are separated by profound structural discontinuities. The pattern extends east and probably also west onto the sea floor. On the east, concealed beneath the Central Valley, is the enigmatic boundary between the Sierra Nevada basement and the Coast Range Franciscan. Most of the boundary between the Sierran and Franciscan basement lies beneath several thousand feet of late Mesozoic and Cenozoic sedimentary rocks in the Salinas Valley. North of Red Bluff, the boundary emerges as the South Fork Mountain Thrust, separating the Klamath Mountains from the Coast Ranges. Westward, the next major boundary is the San Andreas Fault Zone, which separates Franciscan basement from the granitic-metamorphic basement of the Salinian Block. South of Monterey, the Sur-Naciemento Fault Zone separates Salinian rocks from more Franciscan basement to the southwest. Another boundary should occur farther west, offshore, where Franciscan basement is replaced by normal oceanic crust.

Site Geology

The project site lies within the Santa Clara Valley and is bounded by the Gabilan Range on the southwest and the Diablo Range northeast. Quaternary (Pleistocene/Holocene) nonmarine terrace deposits underline the project site (California Geological Survey Geologic Map of California, Santa Cruz Sheet, 1958, fifth printing 1992). Three major geologic units have been mapped at the John Smith Road Landfill, the Cretaceous age Panoche Formation, Pleistocene age older terrace deposits, and Quaternary age surficial deposits. The Panoche Formation is composed of interbedded marine sandstones, siltstones, claystones, and shales with bedding thicknesses ranging from less than 1-inch to several feet (Golder Associates, January 2012).

Fault Systems

The Earthquake Fault Zone (EFZ) maps issued by the California Geological Survey (CGS, formerly the California Division of Mines and Geology) were reviewed, and the project site is not located within the boundaries of an Alquist-Priolo Earthquake Fault Zone, and no active faults are known to cross the project area (Jennings, 2010).

Of the numerous faults known to exist in the project vicinity, the San Andreas, Quien Sabe, Calaveras and small segments of the Tres Pinos faults are classified by the California Geologic Survey as active or potentially active locally (**Figure 8**). The San Andreas fault passes through the Gabilan Mountains about six miles to the southwest of the project site. The Calaveras fault is located approximately three miles west of the project site. The Quien Sabe fault crosses the edge of the Hollister Valley at the base of the Diablo Range about 1.5 miles to the northeast. The Tres Pinos fault crosses the southern edge of the Hollister Valley, with several splays extending out into the valley, is the closest at approximately 1.2 miles south-southwest of the project site.

The project site is in an area of high seismicity and earthquakes strong enough to cause damage to occur frequently in the Hollister area.

In their review of the design reports for Module 2 and Module 3A, the Central Coast RWQCB required that the excavated surface be geologically mapped for the presence of faults. In response, Golder Associates performed additional geologic mapping and found no evidence of active faults beneath either Module. Similarly for Module 3B, no faults were found by RMC Geoscience, Inc. According to the 2009 JTD (pages 1-9) with regard to the Module 2 mapping, "the additional mapping did not differ from the general understanding of the site geology described above" (SWT Engineering, 2009).

<u>Soils</u>

According to the United States Department of Agriculture, Soil Conservation Service's, Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/), the project site consists of San Benito clay loam (SbE2), 15 to 30 percent slopes and San Benito clay loam (SbF2), 30 to 50 percent slopes (**Figure 10**). The soils are well drained, have medium to very rapid runoff and have moderately slow permeability. A detailed description of the soils mapping units is provided below.

San Benito clay loam, 15 to 30 percent slopes, eroded (SbE2)

This soil mapping unit is a well drained soil. It formed in residuum weathered from sandstone and shale. Typically, the surface layer is clay loam down to 48 inches below which lies weathered bedrock from 48 to 60 inches. Several inclusions may occur at varying percentages within this mapping unit. Available water capacity of the San Benito clay loam is high. Depth to restrictive feature is 40 to 60 inches and depth to the water table is greater than 80 inches. This is the dominant soil mapping unit within the project site occupying everything except the western portion of the project site. According to the *Field Office Official List of Hydric Soil Map Units For San Benito County, California* (U.S. Department of Agriculture, 1992), this soil is not a hydric soil.

San Benito clay loam, 30 to 50 percent slopes, eroded (SbF2)

This soil mapping unit is a well drained soil. It formed in residuum weathered from sandstone and shale. Typically, the surface layer is clay loam down to 48 inches below which lies weathered bedrock from 48 to 60 inches. Several inclusions may occur at varying percentages within this mapping unit. Available water capacity of the San Benito clay loam is high. Depth to restrictive feature is 40 to 60 inches and depth to the water table is greater than 80 inches. This mapping unit occurs only within a small area of the western portion of the project site. According to the *Field Office Official List of Hydric Soil Map Units For San Benito County, California* (U.S. Department of Agriculture, 1992), this soil is not a hydric soil.

4.6.1.1 Stockpiling Operations

Soils excavated from onsite are stored in stockpiles within perimeter and interior areas of the existing landfill footprint. The soils are utilized for daily and intermediate cover. With implementation of the proposed project, the Class I facility would be regraded to allow for temporary stockpiling during the operational life of the Class III facility. Soil for the closure cap would be obtained from the soil stockpile within the Class I area, leaving the minimum amount of soil required for the Class I area to drain by gravity.

4.6.2 Regulatory Setting

4.6.2.1 State Regulations

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (1972) provides for a statewide seismic hazard mapping and technical advisory program to assist cities and counties in fulfilling their responsibilities for protecting the public health and safety from the effects of surface faulting. The purpose of the Act is to prevent the construction of buildings used for human occupancy on or near the surface trace of active faults. Under the statute, the state Division of Mines and Geology (California Geological Survey) maintains a mapping program that delineates all active fault traces in the state (CDC, 2007). These maps are used by professional geologists performing earthquake hazard assessments.

Seismic Hazards Mapping Act

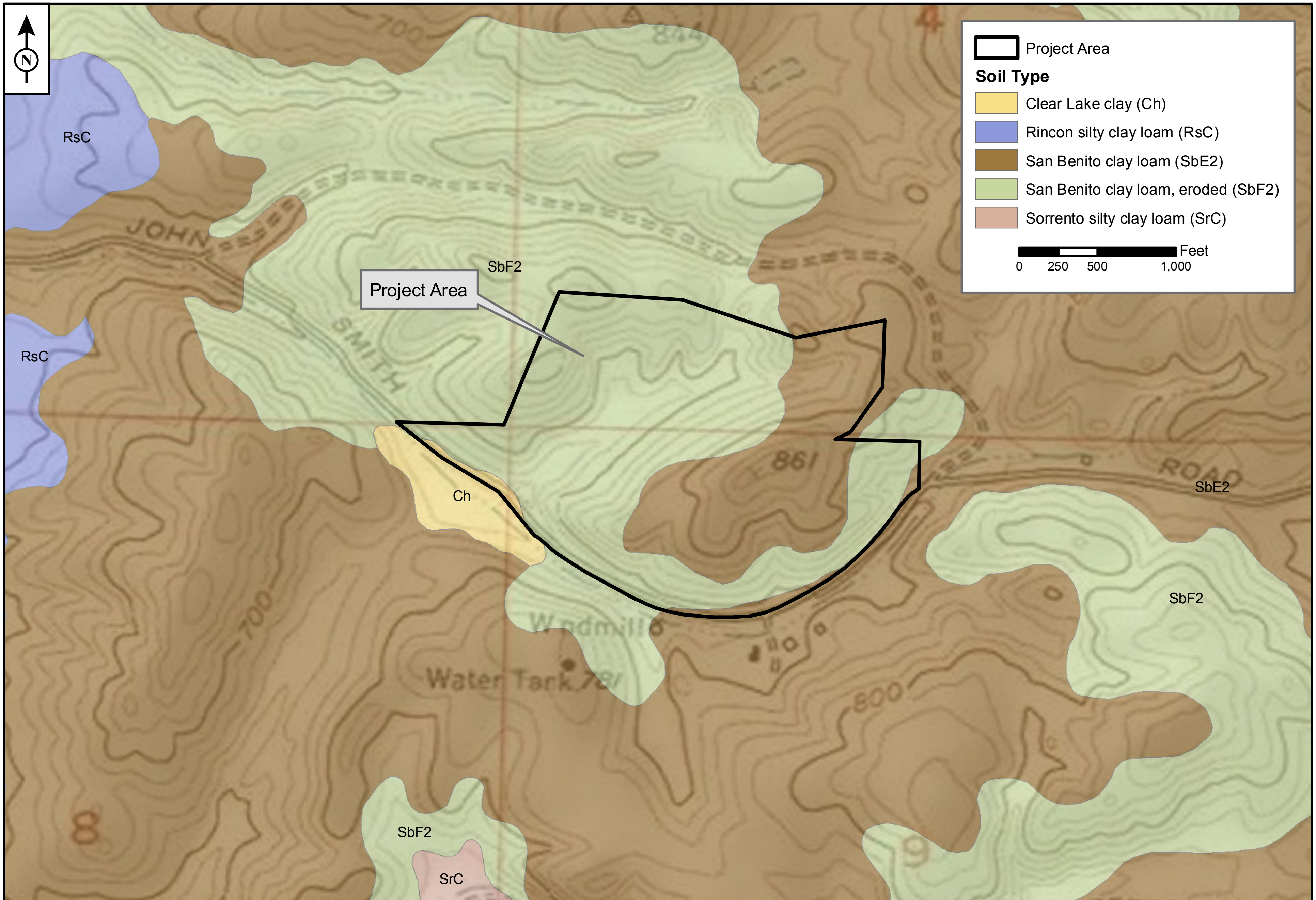
The Seismic Hazards Mapping Act (1990) addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides. The act requires the state geologist to delineate seismic hazard zones; counties and cities, which may incorporate this information in their general plans, are required to regulate development in seismic hazard zones.

California Building Code

The California Building Code (CA Code of Regulations, Title 24, Part 2) sets requirements and standards for building standards. The California Building Code incorporates by reference the Uniform Building Code (UBC), which is a widely adopted as a model building code in the United States. The California Building Code is adapted for the earthquake hazard zones within the state.

San Benito County General Plan

The San Benito County General Plan contains the following policies with regard to geologic hazards:



Source: ESP 2012, ESRI 2012, L&A 2012, NRCS 2009.

Figure 10. Soil Types in the Vicinity

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

Land Use Element (Overall County)

Policy 32 Specific development sites shall be free from the hazards identified within the Open Space and Conservation Element Maps (e.g. faults, landslides, hillsides over 30% slope, flood plains). The site shall also be on soil suitable for building and maintaining well and septic systems (i.e. avoid impervious soils, high percolation or high groundwater areas, set back from creeks). Absent adequate mitigation, development shall not be located on environmentally sensitive lands (wetlands, erodable soil, archaeological resources, important plant and animal communities).

Policy 33 Specific development sites shall avoid, when possible, locating in an environmentally sensitive area (wetlands, erodable soils, important plant and animal communities, archaeological resources).

Policy 36 The County should maintain high standards of siting and design in the development of all land uses. Standards and criteria shall be established by the County.

Open Space and Conservation Element

Policy 7 Grading, erosion, and native tree removal. It is the policy of the County to minimize erosion resulting from grading and cutting and native tree removal for all development proposals.

4.6.3 Methods and Significance Criteria

Field review, aerial photographs and topographic maps were used in a geographic information system (GIS) context to locate and characterize site conditions. This Initial Study relies on information contained within the data provided by Golder Associates (2012) and Lawrence & Associates (2012), as well as a literature review of available maps.

The following thresholds for measuring a project's environmental impacts are based on the CEQA Guidelines and generally accepted standards for environmental documents prepared pursuant to CEQA. For the purposes of this Initial Study, impacts are considered to be significant if any of the following would result from implementation of the proposed project:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving,
- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault;
- Strong seismic ground shaking;
- Seismic-related ground failure including liquefaction; or,

- Landslides;
- Result in a substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on an expansive soil, as defined in the current California and Uniform Building Codes, creating substantial risks to life or property; and/or,
- Have soils incapable of adequately supporting the use of septic tanks or alternative waste disposal systems where sewers are not available for the disposal of wastewater.

4.6.4 Potential Environmental Effects

a) *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death, involving:*

i) *Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?*

Less Than Significant. As discussed above, the San Andreas, Quien Sabe, Calaveras and small segments of the Tres Pinos faults are located within close proximity to the proposed project site. Title 27 CCR requires that landfills be designed so that they have a factor of safety of 1.5 under the seismic acceleration from a "Maximum Probable Earthquake" (MPE). An MPE as defined by the California Division of Mines and Geology (CDMG) is an earthquake that is likely to occur in 100 years but it is not to be smaller than the largest historical earthquake. For the purposes of global design for the JSRL, RMC Geoscience characterized the MPE as an event with an approximate 1/3 chance of occurrence in 100 years.

A factor of safety is defined as forces that tend to resist a slope failure (e.g., friction at the base of the waste) divided by forces tend to create a slope failure (e.g., the weight of the landfill pushing down the slope). A slope that has a factor of safety of one is just barely stable. A slope with a factor of safety of less than 1 is unstable and likely to fail. A slope with a factor of safety greater than 1 is considered stable. The "dynamic" (under seismic acceleration) factor of safety of 1.5 contains a significant safety factor. For those sites that cannot achieve a factor of safety of 1.5 under dynamic conditions, a "displacement" analysis can be performed to estimate the permanent displacement at the base of a landslide that will occur as a result of the design earthquake. Typically the displacement shall not exceed 6 to 12 inches and shall not disrupt the function of control systems such as the LCRS.

Slope-stability analyses are typically performed (1) "globally" to evaluate the stability of an overall design at buildout, or (2) specifically such as when designing a new module to confirm that the temporary slopes between the module are stable. Specific slope stability analyses are performed during the design of each module and are described in the design report for that module. Global analyses are performed when large-scale changes to the facility are planned to confirm that the planned configuration will be stable, typically at closure.

To evaluate whether the proposed project is globally stable, RMC Geoscience performed a slope stability analysis of the combination of base liner and closure cap configuration of the entire landfill after the lateral and vertical expansions have been incorporated into the design. RMC analyzed critical slopes for slope stability under both static (without seismic acceleration) and dynamic conditions (also called pseudostatic conditions). Critical slopes are those that are the steepest, longest and/or most likely to fail. If the critical slopes are stable, then other flatter or shorter slopes are less likely to fail. Because of the relatively close proximity to nearby faults (**Figure 8**), RMC performed a displacement analysis and found that the displacement from a design earthquake was well within acceptable displacement limits (RMC Geoscience, 2011). This impact is considered less than significant.

ii) *Strong seismic ground shaking?*

Less than Significant. As discussed above, the San Andreas, Quien Sabe, Calaveras and small segments of the Tres Pinos faults are located within close proximity to the proposed project site. Because the RMC displacement analysis found that the displacement from a design earthquake was well within acceptable displacement limits and that the proposed project would be constructed in accordance with applicable seismic standards, this impact is considered less than significant.

iii) *Seismic-related ground failure, including liquefaction?*

Less Than Significant. Liquefaction is most likely to occur in deposits of water-saturated alluvium or similar deposits of artificial fill. Quaternary age surficial alluvium is present in the lower portion of the Class III drainage and it forms the valley fill in the field across from the site entrance. The valley-fill alluvium is composed primarily of clayey silts and silty clays with some silty sands. The proposed project would be construction in accordance with applicable seismic standards and would not increase the exposure of people and/or structures to seismic hazards.

iv) *Landslides?*

Less Than Significant. Construction and operational measures would be implemented to reduce the potential for slope runoff, erosion and sloughing of material. Implementation of such measures would reduce the potential for landslide occurrence. This impact is considered less than significant.

b) *Would the project result in substantial soil erosion or the loss of topsoil?*

Less Than Significant. Construction and operational activities associated with landfill expansion could increase soil erosion and loss of topsoil because of vegetation removal associated with site grading. In addition, wind and water erosion of landfill slopes and soil stockpiles during the operating and post-closure life of the landfill would increase with the greater total surface area of the landfill mound. Stockpiling would occur in compliance with Title 27 CCR, Section 20650. Construction and ground-disturbing activities typically accelerate the natural ongoing soil erosion process by exposing loosened and disturbed solids to the elements. Erosion and runoff of material from graded or disturbed areas tend to increase with periods of precipitation or extreme winds, resulting in sedimentation in storm drains or natural watercourses. Potential impacts associated with increased erosion at the site would be considered significant; however, the proposed project would comply with the drainage and erosion control requirements of Title 27 CCR, Sections 20365, 20190, 21150, and 21750 as discussed in Section 3.3 of this Initial Study. This impact is considered less than significant.

c) *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Less Than Significant with Mitigation Incorporation. The Stability Evaluation prepared by RMC Geoscience (2011) indicates that the proposed expansion would be statically and seismically stable; however, the evaluation notes that calculated safety factor for any landfill final cover is highly dependent on the strength of the different layers of cover. Therefore, the potential exists for the final cover to not meet stability requirements. Potential impacts associated with soil instability would be considered significant. Implementation of **Mitigation Measure 10** would reduce this impact to ***less than significant***.

Mitigation Measure 10: A laboratory testing program shall be conducted as part of the final cover construction phase using actual construction materials to confirm the stability of the final cover.

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

Less Than Significant. Expansive soils are soils that increase in volume when they absorb water and shrink when they dry out. The San Benito soil series, which is present within the project area, is identified by moderate to high shrink-swell potential. The expansion (or swell) of soils can exert pressures against base elements, while shrinking can result in consolidation beneath base elements. Development on foundations that are not designed for such soil movements can be deformed and damaged. Potential impacts associated with expansive soils at the site would be considered significant; however, as discussed in Section 3.3 of this Initial Study, the proposed project would be required to develop a geotechnical report evaluating the soils characteristics which would identify any expansive soil-related measures. Such measures would be required to be addressed in project engineering designs and implemented during facility construction. This impact is considered less than significant.

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

Less Than Significant. Neither septic tanks nor alternative wastewater disposal systems are part of the proposed project. This impact is considered less than significant.

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4.7 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			✓	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				✓
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				✓
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			✓	
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			✓	

4.7.1 Environmental Setting

A material is considered hazardous if it appears on a list of hazardous materials prepared by a Federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22 CCR as follows:

> *A substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed*. (California Code of Regulations, Title 22, Section 66261.10)

Chemical and physical properties cause a substance to be considered hazardous. Such properties include toxicity, ignitability, corrosivity, and reactivity. CCR, Title 22, Sections 66261.20-66261.24 define the aforementioned properties. The release of hazardous materials into the environment could potentially contaminate soils, surface water, and groundwater supplies.

Under Government Code Section 65962.5, the California Department of Toxic Substances Control (DTSC) maintains a list of hazardous substance sites. This list, referred to as the "Cortese List", includes CALSITE hazardous material sites, sites with leaking underground storage tanks, and landfills with evidence of groundwater contamination.

San Benito County Environmental Health Division (SBCEHD) has been designated the lead agency for CUPA (Certified Unified Program Agency) or hazardous materials programs and acts as the single point of contact for issuance of permits. Site inspections of all hazardous materials programs (i.e., aboveground tanks and underground tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management plans, etc.) are consolidated and accomplished by a single inspection.

The program provides emergency response to chemical events to furnish substance identification; health and environment risk assessment; air, soil, water and waste sample collection; incident mitigation and cleanup feasibility options and on-scene coordination for state superfund incidents. The program also provides for the oversight, investigation and remediation of unauthorized releases from underground tanks.

Environmental Data Resources, Inc. (EDR) performed a search of regulatory agency databases to determine if soil or groundwater contamination had or could occur at the site. The John Smith Road Landfill was listed on the following databases:

- Hazardous Waste Information System (HAZNET)
- Land Disposal Site Listing (LDS)
- Solid Waste Facility/Landfill (Solid Waste Information System) (SWF/LF)

- Financial Assurance
- California Waste Discharge System (CA WDS)
- National Pollutant Discharge Elimination System (NPDES)
- Aboveground Storage Tank Deed Restriction Listing (AST DEED), and
- ENVIROSTOR.

4.7.1.1 Landfill History

As discussed in **Section 3** of this document, the JSRL Class I, also known as a Hazardous Waste Management Facility (HWMF) primarily received pesticide rinse water into two surface impoundments, each of which are less than 0.5 acre in size. In 1984, liquids from the site surface impoundments were removed. Hydrogeologic investigations determined that approximately one foot of waste residue was left in Impoundment One. The DTSC approved the Closure Plan for the HWMF in 1992, which included the waste residue remaining in the HWMF. Closure was completed in 1993 and included installation of a cover system, construction of surface water drainage ditches and erosion control measures, and hydraulic containment of releases to groundwater from the municipal solid waste landfill (Class III) for off-site treatment at the City of Hollister Publicly Owned Treatment Works (POTW).

A post-closure permit application was submitted to DTSC in 1993. The first post-closure permit was issued in 1996. The post-closure permit outlines the procedures to fulfill the regulatory requirements, which consist of three primary functions: 1) maintenance and operation of closure structures and treatment systems, 2) environmental monitoring, and 3) maintenance of financial mechanisms to fund the post-closure activities. Based on data collected from the groundwater monitoring program there is no evidence of releases from the HWMF portion of the John Smith Road Landfill Facility (CalEPA, DTSC, Permit Number: 03-SAC-006).

Both waste management units at the JSRL (Class I and Class III) are required to conduct water quality monitoring consistent with the following monitoring programs and permits:

- Revised Monitoring and Reporting Program (MRP) R-3 2010-0021 (May 13, 2010);
- Post Closure Permit No. 03-SAC-006;
- Waste Water Discharge Permit #92-02 and amendments;
- Monterey Bay Unified Air Pollution Control District Permit to Operate 14070; and
- NPDES General Permit # CAS00001.

The following information is available from the monitoring report titled, Third and Fourth Quarter 2011 Semi-Annual Monitoring Report and 2011 Annual Summary Class I and Class III Areas John Smith Road Landfill, San Benito County, California (Golder Associates, Inc., 2012).

A summary of the findings and conclusions from the report are presented below:

- Groundwater monitoring during the 2011 monitoring year was conducted consistent with the requirements contained in revised MRP 2010-0021;

- There was no evidence of waste or waste liquids leaving the site and the drainage systems were operating as designed;

- The groundwater flow interpretation has not changed significantly and groundwater beneath the Class III area flows to the west and southwest at seepage velocities varying from approximately 3 to 2,400 feet per year;

- The landfill gas extraction system removed approximately 46,614,000 standard cubic feet of landfill gas (including methane) and destroyed approximately 167 kilograms of volatile organic compounds (VOCs) between July 1 and December 31, 2011;

- During the third quarter, the methane concentration in all soil-gas probes except GP-2AG was less than 5 percent; GP-2AG was reported with 6.4 percent methane;

- With the exception of a trace concentration of dichloromethane in the sample from well E-15, no VOCs were detected in samples from the Class III detection monitoring wells and none of the inorganic constituents exceeded their concentration limits;

- Samples from the three on-site groundwater extraction system wells contained detectable VOCs at concentrations ranging from 0.13 (trace) to 21 μg/L. Three VOCs exceeded their MCL cleanup criterion; and

- No VOCs exceeded their MCL cleanup criterion in the off-site extraction wells during the third or the fourth quarter.

4.7.1.2 Household Hazardous Waste Facility

Household hazardous waste (HHW) programs typically accept wastes that can be categorized into one of four U.S. Department of Transportation (DOT) hazard categories:

- Flammables, including paints (dry or wet), petroleum-based products, and polishes
- Corrosives, including acids, bases, batteries, and drain clog remover
- Toxics, including poisons, pesticides, gardening chemicals, ammonia, and solvents
- Oxidizers, including pool chemicals, hydrogen peroxide, iodine, and perchlorates

Disposing of e-waste, also known as Universal Waste, in landfills has the potential to cause severe human and environmental health impacts. To avoid these risks, California's Electronic Waste Recycling Act (Senate Bill 50) was signed into law in 2004. SB 50 established and funded a program for consumers to return, recycle, and ensure safe and environmentally sound disposal of equipment, such as outdated computers, televisions, stereo equipment and cellular telephones. Electronic waste is accepted daily and collected in a trailer for recycling and is shipped off site to a certified processor.

The HHW collection facility at JSRL is located adjacent to the landfill entrance and serves the County of San Benito and the cities of Hollister and San Juan Bautista. The facility consists of two trailers, one to store collected HHW and the second to store supplies required during collections days (on the third Saturday of each month). The HHW collection facility meets applicable permitting requirements of the CUPA. Although the HHW collection facility is open the third Saturday of each month, it will open additional days, based on community need, as approved by the CUPA. Approximately 600 tons of household hazardous wastes and e-wastes are diverted in San Benito County annually. Although the total amount of these materials is not large, they are toxic and require special handling.

4.7.1.3 Stockpiling Operations

Soils excavated from onsite are stored in stockpiles within the existing landfill footprint and south of the existing footprint. The soils are utilized for daily and intermediate cover. With implementation of the proposed project, the Class I facility would be regraded to allow for temporary stockpiling during the operational life of the Class III facility. Soil for the Class III facility closure cap would be obtained from the soil stockpile within the Class I area, leaving the minimum amount of soil required for the Class I area to drain by gravity.

4.7.2 Regulatory Setting

4.7.2.1 Federal Regulations

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the EPA for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the “cradle to grave” system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), commonly known as the Superfund, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled revision of the National Contingency Plan (NCP), which provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

4.7.2.2 State Regulations

The California Hazardous Waste Control Law (HWCL) is administered by the California EPA to regulate hazardous wastes. While the HWCL is generally more stringent than the RCRA, until the EPA approves the California program, both state and federal laws apply in California. The HWCL lists 791 chemicals and approximately 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

Hazardous materials are defined by ignitability, corrosivity, or reactivity. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, or contaminated or is being stored prior to proper disposal.

If any soil is excavated from a site containing hazardous materials, it would be considered a hazardous waste if it exceeded specific Title 22 criteria. Remediation of hazardous wastes found at a site is required if excavation of these materials is performed; it may also be required if certain other activities are proposed. Even if soil or groundwater at a contaminated site does not have the characteristics required to be defined as hazardous waste, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

4.7.2.3 Department of Toxic Substances Control

The California DTSC is charged with the task of restoring, protecting, and enhancing the environment; ensuring public health, environmental quality, and economic vitality by regulating hazardous waste; conducting and overseeing cleanups; and developing and promoting pollution prevention. DTSC meets these goals through implementing programs aimed at overseeing cleanups; preventing releases by ensuring waste is properly generated, handled, transported, stored and disposed of; enforcing laws against those who inappropriately manage hazardous wastes; promoting pollution reduction; encouraging reuse and recycling; performing toxicological evaluations on a site; and involving the public in DTSC's decision making.

4.7.2.4 California Government Code

Government Code Section 65962.5 requires the DTSC, the State Department of Health Services, the State Water Resources Control Board (SWRCB), and CalRecycle to compile and annually update lists of hazardous waste sites and land designated as hazardous waste property throughout the state. The Secretary for Environmental Protection consolidates the information submitted by these agencies and distributes it to each city and county where sites on the lists are located. Before the lead agency accepts an application for any development project as complete, the applicant must consult these lists to determine if the proposed project site is included.

4.7.2.5 California Public Resources Code

CEQA Statute (California PRC, Division 13 Environmental Protection) Section 21092.6, "Location of Projects on Hazardous Waste Sites List," directs the lead agency to consult the lists compiled pursuant to Section 65962.5 of the Government Code to determine whether a project and any alternatives are located on a site that is included on any list.

4.7.2.6 Local Regulations

San Benito County Environmental Health Division (SBCEHD)

SBCEHD has been designated the lead agency for CUPA or hazardous materials programs and acts as the single point of contact for issuance of permits. Site inspections of all hazardous materials programs (i.e., aboveground tanks and underground tanks, hazardous waste treatment, hazardous waste generators, hazardous materials management plans, etc.) are consolidated and accomplished by a single inspection.

The program provides emergency response to chemical events to furnish substance identification; health and environment risk assessment; air, soil, water and waste sample collection; incident mitigation and cleanup feasibility options and on-scene coordination for state superfund incidents. The program also provides for the oversight, investigation and remediation of unauthorized releases from underground tanks.

San Benito County General Plan

Land Use Element (Overall County)

Policy 32 Specific development sites shall be free from the hazards identified within the Open Space and Conservation Element Maps (e.g. faults, landslides, hillsides over 30% slope, flood plains). The site shall also be on soil suitable for building and maintaining well and septic systems (i.e. avoid impervious soils, high percolation or high groundwater areas, set back from creeks). Absent adequate mitigation, development shall not be located on environmentally sensitive lands (wetlands, erodable soil, archaeological resources, important plant and animal communities).

Policy 33 Specific development sites shall avoid, when possible, locating in an environmentally sensitive area (wetlands, erodable soils, important plant and animal communities, archaeological resources).

Policy 36 The County should maintain high standards of siting and design in the development of all land uses. Standards and criteria shall be established by the County.

Policy 41 Fire safety. New development will not be allowed where access is a fire safety risk.

Potential impacts associated with the proposed project were identified through assessment of existing hazardous materials present within the project area (as discussed above in **Section 4.8.1**) and consideration of potential project disturbance to such hazardous materials and resulting effects on area populations, as well as consideration of the potential uses and disposal of hazardous materials that may be present during construction and operation of the proposed project.

The following thresholds for measuring a project's environmental impacts are based upon the CEQA Guidelines and standards used by San Benito County. For the purposes of this Initial Study, impacts are considered significant if the following could result from implementation of the proposed project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment (during operation or construction);
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result would create a significant hazard to the public or the environment;
- Be located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public or private airport, public use airport, or private airstrip, and thus result in a safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or,
- Expose people or structures to a significant risk or loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

4.7.3 Potential Environmental Effects

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?*

Less Than Significant. The existing HHW collection facility at the JSRL accepts household hazardous materials. Vehicles transporting HHW to the collection facility bypass the scalehouse and are directed to the HHW collection facility location on-site. Currently, the County contracts for operation of the HHW collection facility.

Collected HHW is handled and transported off-site for treatment/disposal within the acceptable timeframes required by the LEA.

The load checking program implemented by landfill personnel minimizes the improper disposal of hazardous materials. Household hazardous materials inadvertently transported to the landfill would therefore be sorted and removed prior to disposal.

Small amounts of hazardous materials would be used during construction activities (i.e., equipment maintenance, fuel, solvents, roadway resurfacing and striping materials). Hazardous materials would only be used during construction of the project, and any hazardous material uses would be required to comply with all applicable local, state and federal standards associated with the handling and storage of hazardous materials. Therefore, this impact is considered less than significant.

b) *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

Less Than Significant. As discussed above, the existing HHW collection facility accepts household hazardous waste from the public. The transport of household hazardous materials to the JSRL would have the potential to result in the risk of public exposure due to accidents. However, the JSRL would not have control over the vehicular operation of private vehicles on area roadways. It is anticipated that motor vehicle operators would drive at safe speeds, obey traffic laws and properly secure the contents they are transporting; therefore, this impact is considered less than significant.

c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?*

No Impact. Calvary Christian School and Meadowlark Preschool are located approximately 2.6 miles and 2.4 miles west of the proposed project area, respectively. The proposed project would not result in hazardous emissions that would have the potential to impact existing or proposed schools.

d) *Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?*

Less Than Significant. The John Smith Road Landfill is included as ENVIROSTOR Identification No. 80001507 on the ENVIROSTOR database for corrective action. As discussed in **Section 3** of this document, the Class III corrective action monitoring program is designed to evaluate the effectiveness of the onsite groundwater extraction system at controlling migration of VOCs from the site, and the effectiveness of the off-site groundwater extraction system at stopping down-gradient migration of VOCs.

VOCs were detected in eight of the twelve samples from on-site Class III area corrective action monitoring wells during the fourth quarter 2011 sampling event. The detected VOCs were below the maximum contaminant level (MCL) cleanup criteria for the site in five of these eight wells. Wells W-5, WA-12, and G-33 (all on-site corrective action monitoring wells) yielded samples that reported VOCs at concentrations above the MCL during the fourth quarter 2011 sampling event. The maximum VOC concentration in the WA-12 sample was 8.6 micrograms per liter (µg/L) for *cis*-1,2-dichloroethene, while the MCL is 6.0 µg/L. No VOCs exceeded their MCL cleanup criterion in the off-site extraction wells during the third or fourth quarter.

The proposed project includes re-grading of the Class I facility to allow for temporary soil stockpiling of borrow soil (cleanfill) during the operational life of the Class III facility. Re-grading of the Class I facility and a lot line adjustment would require coordination with DTSC for a Post-Closure permit modification in accordance with California Health & Safety Code Title 22. Re-grading and stockpiling activities would occur in compliance with all applicable permits and regulations; therefore, this impact is considered less than significant.

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

No Impact. The project is not located within an Airport Land Use Plan area or in the vicinity of an airport. The nearest public airport is the Hollister Municipal Airport, which is located approximately 5.8 miles northwest of the proposed project area.

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

No Impact. The project is not located within the vicinity of a private airstrip. The nearest private airstrip is Christensen Ranch, which is located approximately 3.1 miles north of the project area.

g) *Would the project impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?*

Less Than Significant. The existing landfill implements a Health and Safety Plan, which addresses proper waste handling procedures, equipment safety protocols, monitoring requirements, general safety procedures, and the site's emergency response plan. The proposed project would continue to implement the site's Health and Safety Plan. This impact is considered less than significant.

h) *Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

Less Than Significant. According to Figure 11-11 "Fire Hazard Severity Zones in San Benito County" from the Administrative Draft Background Report for the County General Plan Update, the project is in an area dominated by fuels classified as "moderate" in terms of wildland fire risk. However, the construction and operation of the proposed project is not anticipated to result in a new or increased exposure of people or structures to a significant risk of loss, injury or death involving wildland fires. In the event of fire at the facility, landfill personnel have received emergency preparedness training, in the event of a fire, flood, earthquake, bomb threat, or explosion.

Project implementation would increase the volume and duration of landfill gas generation which could increase the potential risk of fire or explosion. Implementing the proposed project would increase the volume and duration of landfill gas generation by extending the footprint and active life of the landfill.

The nearest offsite property boundary to the currently placed wastes is located approximately 300 feet west of the landfill. The nearest permanent residence is approximately 0.4 miles west-northwest of the facility's western property boundary.

The landfill gas control system installed at the site would be expanded to control the increased landfill gas generated by the proposed project. In addition, the extension of the landfill base liner system into the proposed expansion area would, when coupled with the gas control system, provide additional landfill gas migration control. The base liner system contains the landfill gas within the waste mound where it can be captured by the landfill gas control system. The methane component of the landfill gas is of greatest concern with respect to the potential for occurrence of fire, gas explosions in confined spaces or asphyxiation for building occupants.

The landfill gas collection system substantially reduces emissions of methane gas, lessening the potential risk of fire or asphyxiation. Continued implementation of the existing landfill gas migration control and monitoring system, and compliance with methane gas concentration limits also reduces the risk of explosion or fire at the site. However, the potential risk of a fire, explosion or asphyxiation hazards associated with the increased generation of landfill gas anticipated with project implementation would be considered a significant impact; however, the proposed project would be required to comply with CCR Title 27 (specifically Sections 20923 and 20937) and AB 32. Therefore, this impact is considered less than significant.

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4.8 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?			✓	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				✓
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?			✓	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?			✓	
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			✓	
f) Otherwise substantially degrade water quality?			✓	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				✓
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				✓
j) Inundation by seiche, tsunami, or mudflow?				✓

4.8.1 Environmental Setting

4.8.1.1 Groundwater

Groundwater beneath and near the site occurs within the Cretaceous age Panoche Formation, Pleistocene age older terrace deposits, and Quaternary age surficial deposits. In locations where the upper portion of the Panoche Formation is overlain by terrace deposits or younger alluvium, a hydraulic connection exists and the units behave as a single aquifer. Within the Panoche Formation, flow occurs primarily along fractures. Within the terrace deposits and younger alluvium, groundwater flow is through the matrix.

Aquifer hydraulic parameters have been determined at the site for use in developing groundwater monitoring programs and developing effective corrective action strategies. Hydraulic conductivity (permeability) values for valley-fill alluvium range from 3.1×10^{-3} to 4.8×10^{-5} centimeters per second (cm/sec), while hydraulic conductivity values for the Panoche Formation range from 1.4×10^{-3} to 1.0×10^{-5} cm/sec. Effective porosity, the volume of pore space that will drain in a reasonable timeframe under the influence of gravity, was also determined for the aquifer. An effective porosity value of 0.03 (3 percent) was obtained for the valley-fill alluvium and a range of values between 0.09 to 0.10 (9 to 10 percent) were obtained for the Panoche Formation. The differences in hydraulic conductivity and effective porosity in the aquifer reflect differences in grain size and degree of fracturing, with higher values associated with coarse or more fractured materials.

Groundwater beneath the site flows from areas of higher elevations to areas of lower elevations at velocities ranging from approximately 5 to 2,500 feet per year. These velocities are calculated using the aquifer hydraulic properties described above along with the gradient of the water table. The water table surface in the aquifer, which has a shape that is similar to the ground surface, occurs at elevations ranging from approximately 740 feet above MSL in the northeast corner of the Class I facility to approximately 630 feet MSL near the site entrance. In the field across from the site entrance, the groundwater surface occurs at elevations ranging from approximately 630 to 600 feet MSL and drops to below 580 feet MSL down canyon. These conditions are shown on **Figure 11**.

Groundwater elevations have varied with time and respond to both seasonal and longer term rainfall patterns; the flow directions and groundwater velocities, however, remain about the same. The seasonal variations are generally less than 5 feet and the longer term variations have been between 5 and 20 feet. Highest seasonal water levels for most of the bedrock wells in the project vicinity typically occur in the second or third quarter, when recharge of the previous wet season rain reaches the aquifer, and the lowest seasonal water levels typically occur in the fourth to first quarter before the new rain begins to recharge the aquifer. Water levels in the alluvial wells respond more quickly and seasonal highs typically occur in March, April, and May.

Source: ESP 2012, ESRI 2012, L&A 2012, Golder 2012.

Figure 11. Groundwater Contours, Q4 2011

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The El Niño event during the winter of 1997-1998 produced the most rain in the region in any year since record keeping began in 1874. Based on 25 years of groundwater-elevation records at the project site, the single biggest effect was the El Niño event in 1997-1998, and water levels in most wells reached their historical high in response to the heavy El Niño rains. The highest water levels generally occurred between April and July 1998.

Groundwater near the John Smith Road Landfill is regulated by the State through Waste Discharge Requirements that are administered by the Regional Water Quality Control Board. Groundwater beneath the landfill site flows to the west and is routinely monitored at 23 locations including upgradient and downgradient locations along the groundwater flow path (see **Figure 11**). Samples are analyzed for constituents the State has determined to be appropriate to detect a release from the landfill at the earliest possible time. Groundwater is sampled every six months, and that frequency is based on the groundwater flow rate in the John Smith Road valley to ensure that groundwater cannot pass wells along the flow path without being sampled and analyzed. Background water quality has been established during the 25 years of monitoring, and results from each event are compared to background conditions to determine whether water quality has been affected by site operations. Detailed assessments are prepared every 6 months and submitted to the Regional Water Quality Control Board. Groundwater monitoring is also conducted to ensure that the groundwater extraction system is capturing the legacy release of contaminants to groundwater from landfill operations in the 1970s and 1980s.

4.8.1.2 Surface Water

There are no naturally occurring surface water bodies on the landfill site, but there are two stormwater detention sediment retention basins as shown on **Figure 6**. As filling of the landfill progresses, the drainage routes and receiving basin will vary to accommodate stormwater runoff onsite.

Surface water from the east, north, and west sides of Module 1 is routed via benches and downdrains to the perimeter road and into the western basin. To the greatest extent possible, runoff from the south side of Module 1 and Modules 2 through 6 is gravity drained towards the western basin. Because the bottoms of the modules are below grade, runoff that drains into the excavation is collected in the temporary stormwater basin located east of and adjacent to Module 3A (**Figure 6**). The water is pumped out of the temporary basin and into the roadside swale south of Module 3A, where it flows to the western basin. The southern basin collects runoff from portions of the soil stockpiles and surrounding undisturbed areas.

Runoff from the northerly and westerly portions of the landfill flows to an existing drainage ditch along the landfill access road. The drainage ditch directs runoff to the detention basin where it discharges to an intermittent drainageway along John Smith Road.

4.8.1.3 Drainage

Seasonal drainages generally drain to the west. The JSRL is located between seasonal drainages that are tributary to Santa Ana Creek. Santa Ana Creek drains into the Pajaro River via Tequisquito Slough. The Pajaro River drains to the San Benito Valley and is tributary to Monterey Bay. The landfill is not located within a flood plain.

Calculations conducted by Lawrence & Associates (2011) indicate that the existing basins have adequate capacity to detain proposed stormwater.

4.8.1.4 Flood Hazards

According to the Federal Emergency Management Agency (FEMA) Map, (Community Panel Number: 06069C0205D, Effective Date April 16, 2009) the project area is located in an area determined to be outside of the 0.2 percent annual chance floodplain (Zone X).

4.8.1.5 Springs

There are no known springs within the site boundary. Two springs within ½ mile have been identified northwest of the landfill entrance, along John Smith Road. At the time the springs were identified, one was active and one was inactive. The springs are identified on **Figure 12.**

4.8.2 Regulatory Setting

4.8.2.1 Federal and State Laws and Regulations

The U.S. EPA is the federal agency responsible for water quality management and administration of the federal CWA. The objective of the Clean Water Act (CWA 1977, as amended) is to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands, is regulated by the Corps under Section 404 of the CWA (33 USC 1251-1376). Corps regulations implementing Section 404 define waters of the United States to include intrastate waters, including lakes, rivers, streams, wetlands, and natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce. Wetlands are defined for regulatory purposes as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3; 40 CFR 230.3). To comply with the Section 404 policy that there be no net loss of wetland function, discharge into wetlands must be avoided and minimized to the maximum extent practicable. For unavoidable impacts, compensatory mitigation is required to replace the loss of wetland functions in the watershed.

The placement of structures in, under, or over "navigable waters of the United States" is also regulated by the Corps under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 401 et seq.). Projects are permitted under either individual or general (i.e., nationwide) permits. The specific applicability of the permit types is determined by the Corps on a case-by-case basis.

Source: ESP 2012, ESRI 2012, L&A 2012, San Benito County 2010.

Figure 12. Water Resources in the Vicinity

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The U.S. EPA has delegated most of the administration of the CWA in California to the SWRCB.

The SWRCB was established through the California Porter-Cologne Water Quality Act of 1969, which is the State's primary water quality statute. The SWRCB is the primary State agency responsible for water quality management issues in California. Responsibility for implementation of the SWRCB's policies is delegated to nine RWQCBs. For this project, the RWQCB is responsible for enforcing and protecting water resources with the State of California. The RWQCB also regulates the discharge of wastes to surface waters through the NPDES permit process. Waste Discharge Requirements are established in NPDES permits to protect beneficial uses.

Pursuant to Section 401 of the Clean Water Act, the Corps cannot issue a federal permit until the State of California first issues a water quality certification to ensure that a project will comply with state water quality standards. The project study area is within the jurisdiction of the Central Coast RWQCB.

Section 303(d) of the CWA requires each state to list impaired water bodies in the state and determine total maximum daily loads (TMDLs) for pollutants or other stressors impacting water quality.

Section 402 of the CWA established the NPDES to regulate discharges into "navigable waters" of the United States. EPA authorized the SWRCB to issue NPDES permits in the California in 1974. Individual stormwater NPDES permits are required for specific industrial activities and for construction sites greater than five acres. State-wide general stormwater NPDES permits have been developed to expedite discharge applications. These permits include the state-wide industrial permit and the state-wide construction permit. An applicant may apply for coverage under one of these permits through the preparation of a stormwater pollution prevention plan (SWPPP).

4.8.2.2 Local Policies

4.8.2.2.1 San Benito County General Plan

The following policies from the San Benito County General Plan are applicable to the proposed landfill expansion with regard to potential hydrology impacts:

Land Use Element (Overall County)

Policy 33 Specific development sites shall avoid, when possible, locating in an environmentally sensitive area (wetlands, erodable soils, important plant and animal communities, archaeological resources).

Open Space and Conservation Element

Policy 4 Avoid loss of habitat from other mitigation measures. Mitigation measures to reduce other environmental hazards (e.g. fire hazard, flood hazard, soil erosion) shall not be acceptable if they will significantly degrade existing habitat, riparian areas, or isolate habitat.

Policy 18 Protect rural atmosphere and natural resources. General Plan Amendments, Specific Plans, Area Plans, and Area of Special Study that result in a net increase in general plan buildout (Table 1 of the Land Use Element), shall include methods to conserve open space for natural resources including agriculture, wildlife habitat, and water (e.g. conservation easements and/or other similar resource protection measures). Proposed development areas shall also include measures to protect resources on-site and contiguous to the project with the use of clustering, conservation easements, and other similar programs.

Policy 34 Evidence water quality and quantity for development. Approval of new developments shall not be allowed without evidence of adequate water quality and quantity.

4.8.3 Methods and Significance Criteria

This assessment uses standard hydrologic analysis methods to assess the risk of stormwater runoff and water quality impacts. The Basin Plan is used to define the limiting water quality concerns associated with the proposed project (CVRWQCB 2006). This assessment used existing and site-specific data sources to analyze the climatic and hydrologic conditions described above. Aerial photographs and topographic maps were used with GIS to locate and characterize site conditions.

The following thresholds for measuring a project's environmental impacts are based on CEQA Guidelines and generally accepted standards for environmental documents prepared pursuant to CEQA and standards utilized by San Benito County. An impact to surface hydrology or water quality is considered significant if implementation of the proposed project would result in any of the following:

- Violate any water quality standards or waste discharge requirements;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in, or contribute to, flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Substantially degrade surface water quality due to erosion, urban runoff, on-site sewage treatment and disposal system, or other factors, as a result of either construction activities or daily operation;
- Expose people or structures to flood hazards as a result of development within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or place

within a 100-year flood hazard area structures which would impede or redirect flood flows;

- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
- Inundation by seiche, tsunami, or mudflow.

4.8.4 Potential Environmental Effects

a) *Would the project violate any water quality standards or waste discharge requirements?*

Less Than Significant. The operation of landfills involves construction of new cells, the stockpiling of large volumes of soil, the placement of interim/final soil cover, and the processing of a wide variety of waste materials. These operations would be expected to cause significant water quality impacts. The management of water quality at the site, as described below, is intended to ensure water quality is not adversely degraded. However, based on the lifespan of the proposed project and the continual nature and intensive use of the site for solid waste disposal activities, potential surface water quality impacts would be considered significant.

California regulations at 27 CCR set to detailed prescriptive and performance standards implementing the federal Subtitle D regulations (40 CFR Part 258) for design and construction of municipal solid waste landfills and their containment systems to prevent impairment of groundwater resources and the environment. 27 CRR Section 20340 requires installation of Leachate Collection and Removal Systems (LCRS) for Class III landfills that have a liner or that accept sewage or water treatment sludge and outlines specific design requirements for the LCRS. In addition, 27 CCR Title Section 20415 requires establishment of a groundwater monitoring system for landfills, and outlines specific requirements of the system. The groundwater monitoring system is designed to detect the presence of any potential impacted groundwater as a result of solid waste landfill operations, and facilitate remedial actions.

The proposed project includes the following water quality protection, control and monitoring systems.

Composite Liner System: Liquid within the landfill mass (known as leachate) is absorbed by the waste, metabolized by bacteria in the waste, or extracted as water vapor by the landfill gas (LFG) extraction system. In addition, there is the potential for some liquids to migrate through the landfill mass and be captured in the containment system. These liquids would be intercepted by the composite liner system, which is designed for this purpose. The composite liner system features a LCRS, which would remove liquids from the landfill wastes. The entire system is designed to keep liquids within the landfill containment system and drain by gravity flow to a sump at low points in the landfill, where it would then either drain by gravity, or be pumped into a leachate collection storage unit. Leachate effluent from the tank would be used for dust control, or re-introduced into the lined landfill areas, in accordance with Title 27 regulations and Regional Water Quality Control Board (RWQCB) approvals. The project's composite liner system will be consistent with the prescriptive and performance design requirements of Title 27 CCR. The composite liner system and LCRS function together as an effective overall containment system to prevent impairment of groundwater resources.

Groundwater Monitoring. The groundwater monitoring program at the site would be further developed in accordance with the Title 27 regulations for the detection monitoring system. Existing infrastructure for groundwater monitoring on-site includes approximately 30 groundwater monitoring wells installed as part of the current site operations. Monitoring points would be sampled and analyzed in accordance with RWQCB waste discharge requirements. The groundwater monitoring program purpose and goal will be to identify changes in water quality associated with landfill operations. If it is found that groundwater is being impacted, corrective action would take place in accordance with applicable local and state requirements.

Compliance with 27 CCR would ensure this potential impact would remain less than significant.

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

No Impact. The landfill obtains water from a fire hydrant from the Sunnyslope County Water District and the water is trucked to the site and stored. Therefore, the project would not deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Therefore, no impact to groundwater supplies would result from the proposed project.

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

Less Than Significant. There are no waterways onsite that would be altered as a result of the proposed landfill expansion. As discussed in **Section 4.9.1.2**, there is also a temporary stormwater retention basin east of Module 3A. As filling of the landfill progresses, the drainage routes and receiving basin will vary to accommodate stormwater runoff onsite. The modified drainage routes and receiving basin would result in a less-than-significant impact to the existing drainage pattern of the site or area and would not result in substantial erosion or siltation on- or off-site.

d) *Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?*

Less Than Significant. The proposed project has been designed to direct runoff to the stormwater detention basins. The calculations conducted by Lawrence & Associates (2011) indicate that the existing basins have adequate capacity to detain proposed stormwater to a similar level as they do now. This impact is considered less than significant.

e) *Would the project create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?*

Less Than Significant. The calculations conducted by Lawrence & Associates (2011) indicate that the existing basins have adequate capacity to detain proposed stormwater to a similar level as they do now; therefore, the proposed project would result in a less than significant impact on stormwater drainage systems.

f) *Would the project otherwise substantially degrade water quality?*

Less Than Significant. The operation of landfills involves construction of new cells, the stockpiling of large volumes of soil, the placement of interim/final soil cover, and the processing of a wide variety of waste materials. These operations would be expected to cause significant water quality impacts. The management of water quality at the site, as described below, is intended to ensure water quality is not adversely degraded. However, based on the lifespan of the proposed project and the continual nature and intensive use of the site for solid waste disposal activities, potential surface water quality impacts would be considered significant.

The area of disturbed soil is controlled by building increments of landfill cells, limiting the size of soil stockpiles, and maintaining a vegetative growth over interim closed areas of the landfill, final closed areas and stockpiles. Vegetation is highly effective in stabilizing soil surfaces and minimizing soil loss.

Contact water usually occurs in the active landfill cell and most often at the active face. Once contact with refuse occurs, the surface water is handled as leachate meaning that the contact water would be discharged to lined surface impoundments or a sanitary sewer as discharge from leachate surface impoundments to surface water is not permitted.

During the active life of the landfill, areas of disturbed soil would be sloped to drain into siltation control basins. Temporary drainage ditches and berms would be placed where needed to intercept and divert surface runoff away from the active working areas. The uppermost surfaces of the completed landfill would be graded to maintain a minimum slope of 5 percent to facilitate surface runoff after anticipated settlement of the fill. All surfaces (including critical interim exposed areas) would be seeded to control erosion.

As discussed in Impact 4.8.4(a) above, compliance with 27 CCR would ensure this potential impact would remain less than significant.

g) *Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?*

No Impact. The proposed project is a landfill expansion project and no housing development is associated with the project.

h) *Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?*

No Impact. The project is not located within or adjacent to any dams, levees, or mapped 100-year floodplains. The nearest 100-year floodplain is located approximately 0.9 miles north of the project area. Existing conditions onsite provide sufficient stormwater runoff facilities so as not to impede or redirect stormwater flows.

i) *Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of a failure of a levee or dam?*

No Impact. The project is not located within or adjacent to any dams, levees, or mapped 100-year floodplains.

j) *Would the project be subject to inundation by seiche, tsunami or mudflow?*

No Impact. The proposed project is not in the near vicinity of the ocean, and the proposed landfill expansion would not be impacted by a seiche, tsunami, or mudflow. Therefore, there will be no seiche-, tsunami-, or mudflow-related impact associated with the proposed project.

4.9 Land Use and Planning

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?				✓
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			✓	
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				✓

4.9.1 Environmental Setting

The project site is located approximately 2.5 miles southeast of the City of Hollister in north, central San Benito County (**Figure 1**). The proposed project area is located on a 65-acre area, consisting of the existing landfill facility, the closed Class I facility, and an additional 33.81 acres for the proposed landfill expansion area. This is discussed in more detail in **Section 3** of this document.)

4.9.1.1 Surrounding Land Uses

Surrounding land uses and structures are rural in character and include agricultural and grazing lands. The nearest permanent residence is approximately 0.4 miles west-northwest of the facility's western property boundary.

The San Benito County General Plan Land Use Element (San Benito County, 1992) designates land uses for the San Benito County General Plan Area. Designated land uses within the County's jurisdiction and surrounding the project area include: "Agricultural Productive" (to the west and south) and "Agricultural Rangeland" (to the east).

4.9.2 Regulatory Setting

The primary land use regulations within the project study area are County General Plan land use designations, policies and County zoning ordinances. This section provides definitions of the applicable land use designations within the project area and discusses policies relevant to the land use assessment of the proposed landfill expansion.

San Benito County General Plan Land Use Designations

Two General Plan land use designations apply within the project study area. As shown on **Figure 13,** the project area is comprised of lands designated as Public/Quasi-Public and Agricultural Rangeland. As shown on **Figure 14**, the proposed project includes a land use designation change of the expansion area from Agricultural Rangeland to Public/Quasi-Public. A definition of this land use designation is provided below:

> **Public/Quasi-Public:** This land use designation applies to public and quasi-public facilities and land uses including the following: schools, landfills, government lands, sewage treatment plants, County facilities, fire stations, police stations/substations, jails, religious meeting areas, libraries, energy distribution, water distribution, and public meeting halls.

Figure 15 provides a comparison of the existing and proposed zoning designations. As shown on **Figure 15**, a majority of the existing zoning designation is Agricultural Rangeland, with the westernmost tip of the project area zoned Agricultural Productive. With the proposed project, the zoning designation would be modified to Heavy Industrial.

San Benito County General Plan Policies

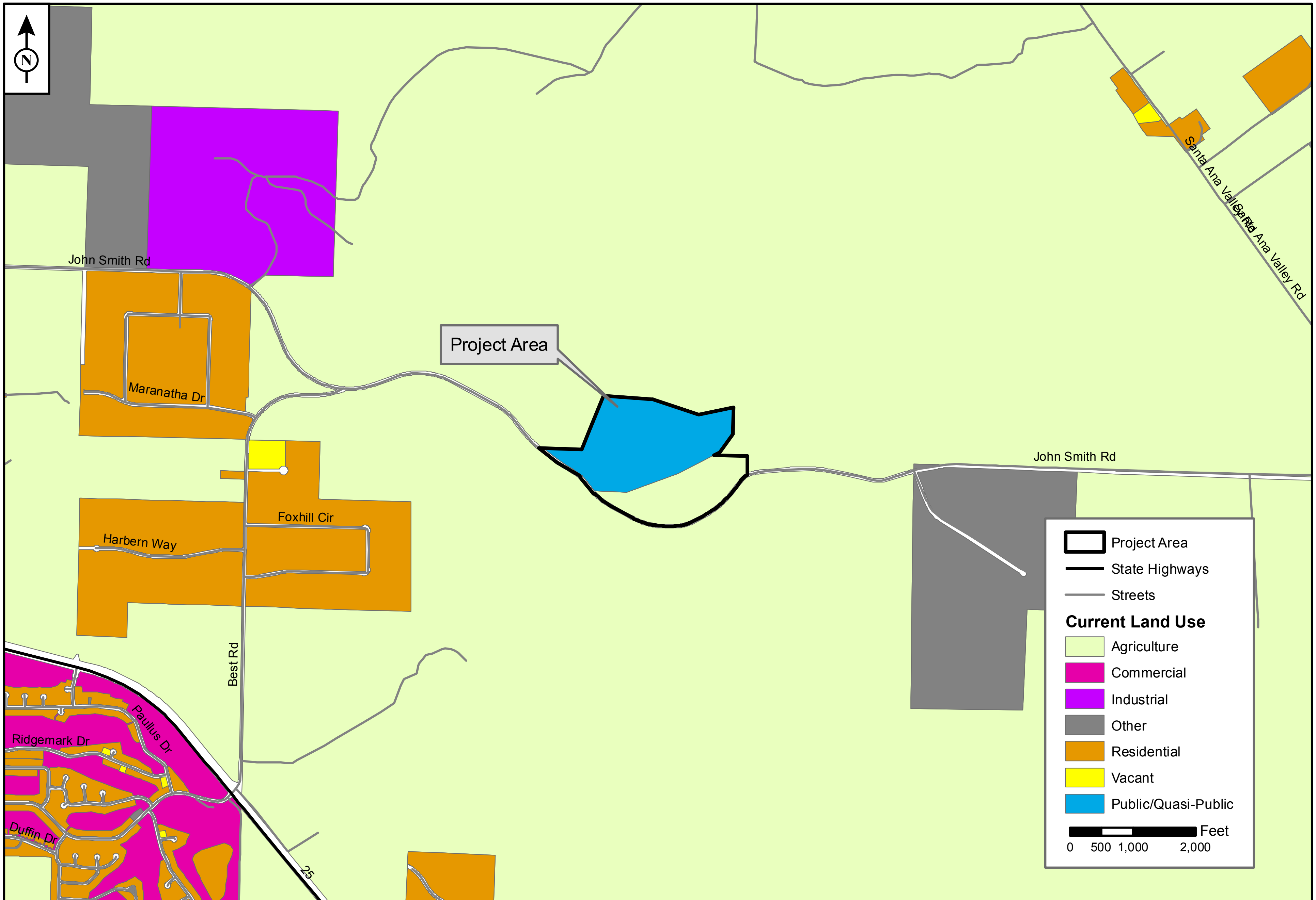
The primary land use planning document applicable to the project area is the *1992 San Benito County General Plan* (San Benito County, 1992). San Benito County initiated the General Plan update process in early 2009. It is anticipated that the updated General Plan will be adopted by the County in 2012. The General Plan provides for long-range direction and policy for the use of land within the County and establishes the County's goals, policies and objectives as embodied in seven functional plan elements addressing the following: Land Use; Transportation; Housing; Open Space and Conservation; Noise; Seismic and Safety; and Scenic Roads and Highways.

Land Use Element (Overall County)

Policy 32 Specific development sites shall be free from the hazards identified within the Open Space and Conservation Element Maps (e.g. faults, landslides, hillsides over 30% slope, flood plains). The site shall also be on soil suitable for building and maintaining well and septic systems (i.e. avoid impervious soils, high percolation or high groundwater areas, set back from creeks). Absent adequate mitigation, development shall not be located on environmentally sensitive lands (wetlands, erodable soil, archaeological resources, important plant and animal communities).

Policy 33 Specific development sites shall avoid, when possible, locating in an environmentally sensitive area (wetlands, erodable soils, important plant and animal communities, archaeological resources).

Policy 36 The County should maintain high standards of siting and design in the development of all land uses. Standards and criteria shall be established by the County.



Source: ESP 2012, L&A 2012, San Benito County 2010.

Figure 13. Land Uses within the Project Vicinity

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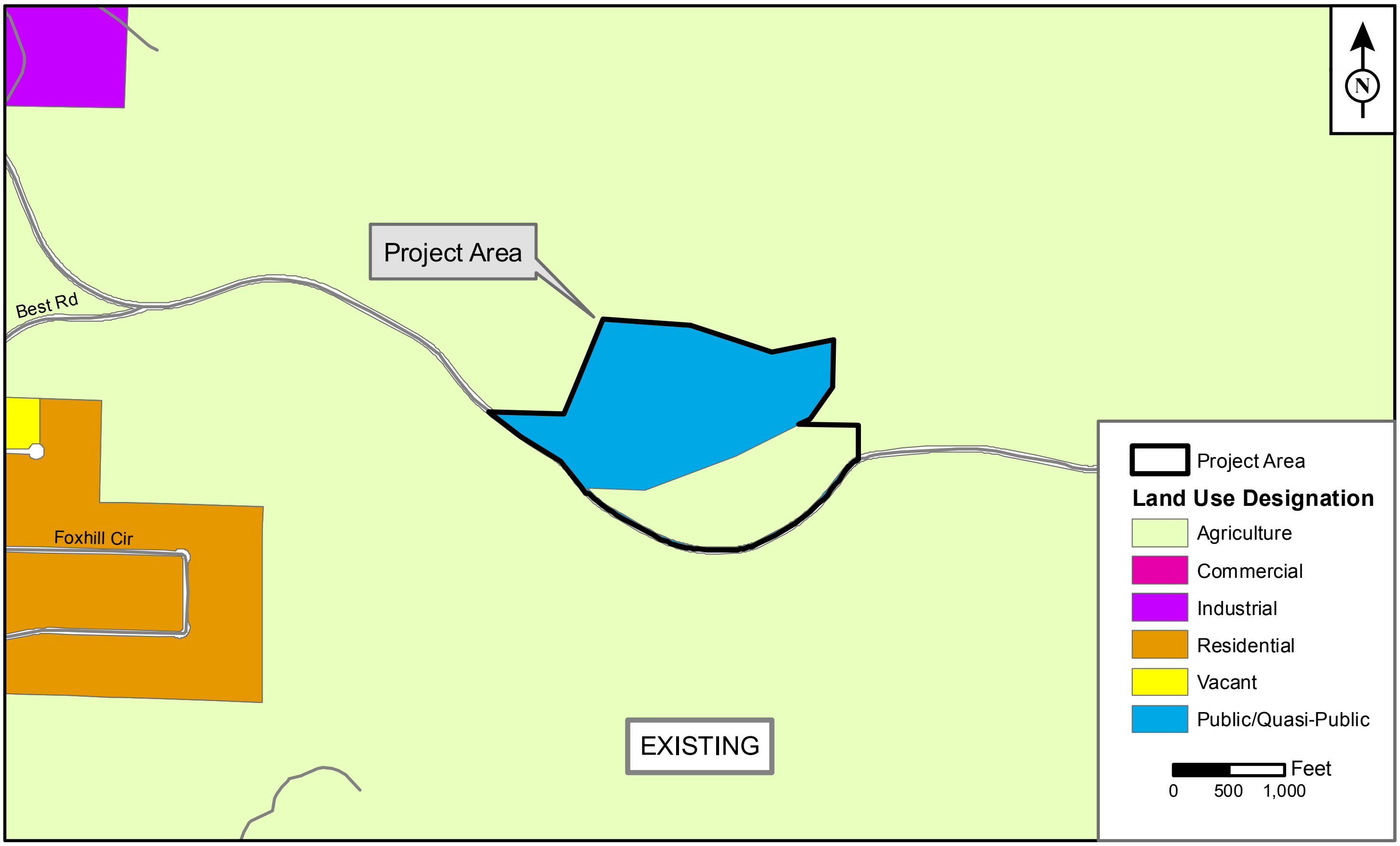

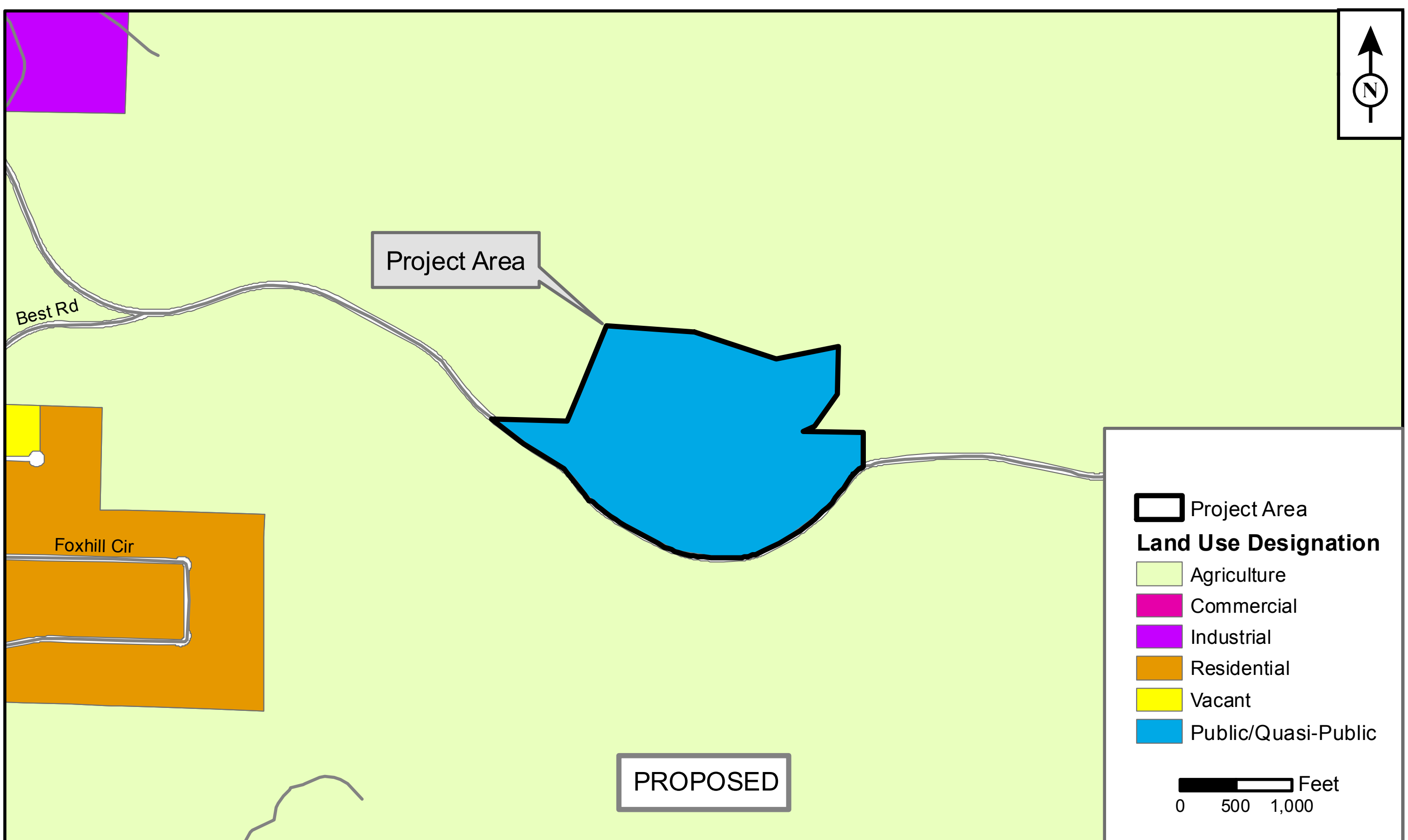

Source: ESP 2012, L&A 2012, San Benito County 2010.

Figure 14. Existing and Proposed Land Use Designations

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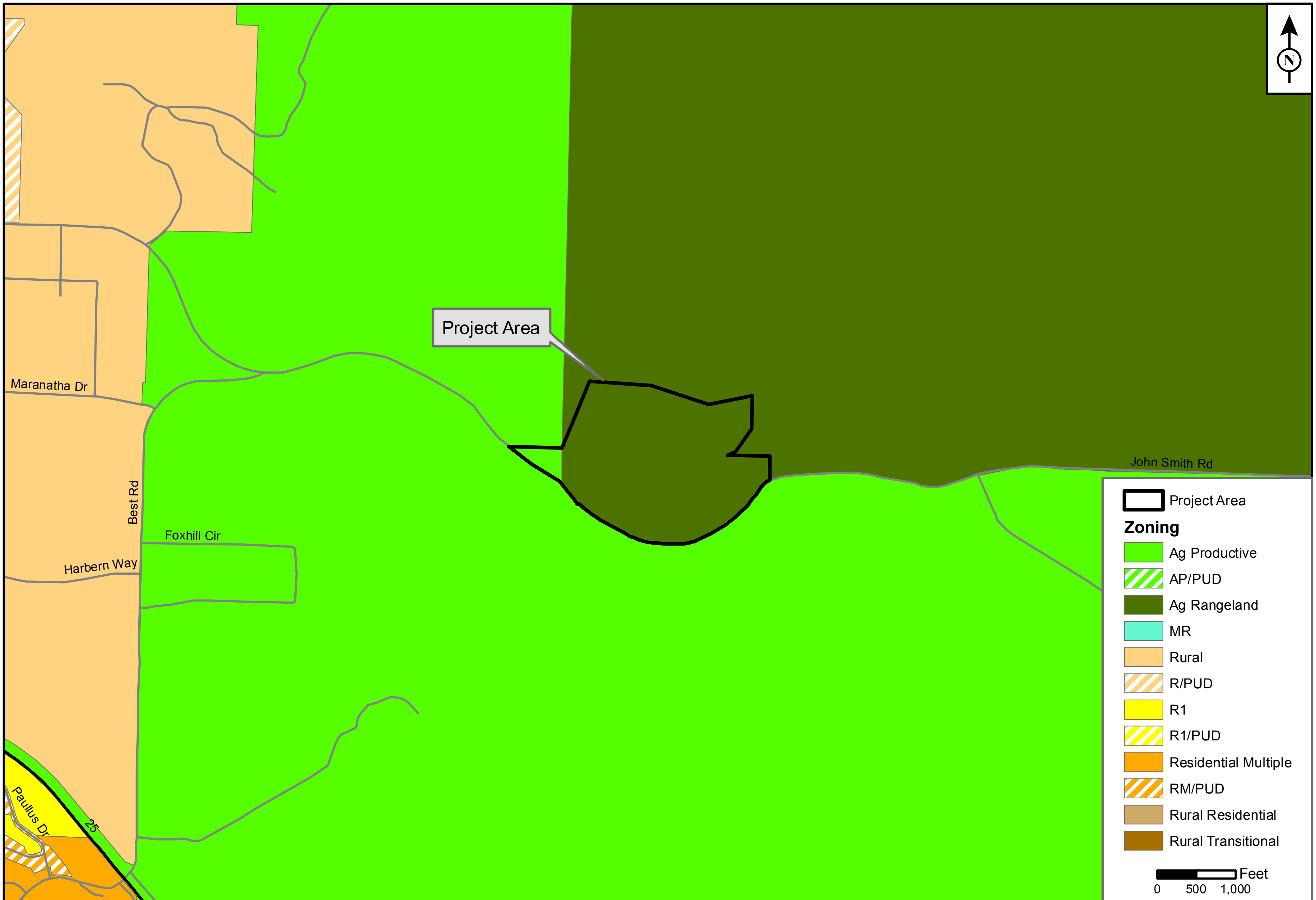

Source: ESP 2012, L&A 2012, San Benito County 2010.

Figure 15. Existing Zoning Classifications

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Open Space and Conservation Element

The following policies from the Open Space and Conservation Element of the San Benito County General Plan are applicable to the proposed project:

Policy 1 Major subdivisions or intense development shall not be allowed within potential habitat of Federal or State listed rare, threatened, or endangered plant or animal species until said development(s) prepares habitat plans for the species unless an interim measure has been taken to mitigate the effect of development.

Policy 3 Mitigation for wetland development. Development shall be sited to avoid encroachment on wetlands. Mitigation shall be required for any development proposals that have the potential to reduce wetland habitat from primary or secondary effects of the development.

Policy 4 Avoid loss of habitat from other mitigation measures. Mitigation measures to reduce other environmental hazards (e.g. fire hazard, flood hazard, soil erosion) shall not be acceptable if they will significantly degrade existing habitat, riparian areas, or isolate habitat.

Policy 7 Grading, erosion, and native tree removal. It is the policy of the County to minimize erosion resulting from grading and cutting and native tree removal for all development proposals.

Policy 10 Air quality. The County recognizes air as a natural resource and will strive to maintain air quality through proper land use planning. It shall be the County's policy to utilize land use and transportation controls for the protection and enhancement of air quality. Finally, it will be the County's policy to review public and private development proposals in light of possible recreational and open space potential.

Policy 18 Protect rural atmosphere and natural resources. General Plan Amendments, Specific Plans, Area Plans, and Area of Special Study that result in a net increase in general plan buildout (Table 1 of the Land Use Element), shall include methods to conserve open space for natural resources including agriculture, wildlife habitat, and water (e.g. conservation easements and/or other similar resource protection measures). Proposed development areas shall also include measures to protect resources on-site and contiguous to the project with the use of clustering, conservation easements, and other similar programs.

Policy 34 Evidence water quality and quantity for development. Approval of new developments shall not be allowed without evidence of adequate water quality and quantity.

Policy 40 Development in State Responsibility Areas. All new development shall be required to conform to the standards and recommendations for applicable fire protection agency to an acceptable fire protection risk level (CDF, County, incorporated city).

Policy 41 Fire safety. New development will not be allowed where access is a fire safety risk.

Policy 54 Prohibit unauthorized grading of resources. It is the policy of the County to prohibit unauthorized grading, collection, or degradation of Native American, archaeological, or paleontological resources.

Noise Element

The following policies from the Noise Element of the San Benito County General Plan are applicable to the proposed project:

Goal 2, Policy 1 To route heavily traveled transportation routes to insure minimum noise encroachment upon residential and other noise sensitive land uses.

Goal 2, Policy 2 That county vehicles and equipment should be maintained in such condition so as to assure minimum noise emissions.

Goal 2, Policy 3 To provide for enforcement of existing statewide vehicle noise of the regulations by local authorities, specifically those sections of the California Vehicle Code which pertain to illegal or faulty exhaust systems, speed laws and operation of excessive noise.

Goal 2, Policy 4 To keep the number of truck routes in the County at a minimum and locate said routes in such a manner as to avoid impacts on those areas identified as noise sensitive. Wherever possible, trucks should be routed onto freeways and non-residential arterials, even where such routing is not the shortest distance between points.

Goal 2, Policy 6 To encourage County Roads Department and California Department of Transportation to utilize noise attenuation features in the design of new County roadways.

Goal 4, Policy 1 It will be the County's continuing policy to control the operation of construction equipment at specific sound intensities and frequencies during specified hours.

Goal 4, Policy 2 The County will encourage the use of barriers or enclosures for equipment having high noise emissions.

Scenic Roads and Highways Element

The following policies from the Scenic Roads and Highways Element of the San Benito County General Plan are applicable to the proposed project:

Policy 1 It is the policy of San Benito County to provide for the protection of certain transportation corridors which are recognized as having unusual or outstanding scenic qualities.

Transportation Element

The following policies from the Transportation Element of the San Benito County General Plan are applicable to the proposed project:

Policy 4 A level of service of C shall be used for the accepted minimum standard of operation for intersections and roadways.

Policy 10 Road and private access road development in hillside areas shall minimize cut and fill and shall follow the natural contours of the land as much as possible.

Policy 12 Road development shall minimize the extent of building in hazardous areas (e.g. faults, flood plains, landslide areas, fire hazard areas).

Policy 33 Require adequate loading facilities in developments requiring frequent loading and unloading of goods.

4.9.3 Methods and Significance Criteria

Land use impacts were assessed by evaluating the potential for the project to conflict with existing and future land uses based on existing uses and current land use designations and zoning. The evaluation also considers the proposed project's consistency with specific policies of the County General Plan. State law requires that the General Plan be internally consistent (i.e., the various elements and policies of the General Plan can not be inconsistent with one another).

To determine impact significance pursuant to CEQA, potential land use impacts are considered significant if the project would:

- Physically divide an established community;
- Conflict with policies of the 1992 San Benito County General Plan adopted for the purpose of avoiding or mitigating an environmental effect; or
- Result in land use conflicts any applicable habitat conservation plan or natural community conservation plan.

4.9.4 Potential Environmental Effects

a) *Would the project physically divide an established community?*

No Impact. The existing landfill is located adjacent to lands designated as "Agricultural Productive" and "Agricultural Rangeland", and the nearest permanent residence is approximately 0.4 miles west-northwest of the facility's western property boundary. The proposed project would not physically divide an established community.

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

Less Than Significant. The proposed project would not conflict with any 1992 General Plan goals, policies or objectives intended to mitigate potential environmental effects (refer to the responses to 4.4(e) above and 4.16(b) below). Project design and implementation of the project-specific mitigation measures identified within this Initial Study would ensure the proposed project would not conflict with 1992 General Plan goals, policies and/or objectives.

The proposed project would require a lot line adjustment which adds 33.81 acres to the existing John Smith Road Landfill (JSRL) Class III permitted facility area, and a General Plan Amendment to change the adjusted acreage designation from Agricultural Rangeland to Public/Quasi Public. With implementation of the General Plan goals, policies and objectives and the project mitigation measures, this impact is considered less than significant.

c) *Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?*

No Impact. No HCPs or NCCPs are in effect for this project. In April 1988, the County of San Benito adopted Ordinance No. 541 (San Benito County Code, Chapter 19.19) which established a habitat conservation plan study area for the San Joaquin kit fox and set interim mitigation fees for the preparation and adoption of a HCP. As of the time of preparation of this document, the HCP has not yet been prepared or adopted by the County.

4.10 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				✓

4.10.1 Environmental Setting

Mineral resources in San Benito County include significant aggregate resources in the northern part of the County that have been classified and mapped by the Department of Conservation through the authority of the Surface Mining and Reclamation Act (SMARA). These resources include sand and gravel in the San Benito River and the San Andreas Fault zone. Tres Pinos Creek helps recharge sand and gravel in the San Benito River, and extraction of these resources has taken place on Tres Pinos Creek south of the project area.

4.10.2 Regulatory Setting

4.10.2.1 State

Surface Mining and Reclamation Act of 1975

SMARA requires that the State Mining and Geology Board (SMGB) map areas throughout the State of California that contain regionally significant mineral resources. Aggregate mineral resources within the state are classified by the SMGB through application of the Mineral Resource Zone (MRZ) system. The MRZ system is used to map all mineral commodities within identified jurisdictional boundaries. The MRZ system classifies lands that contain mineral deposits and identifies the presence or absence of substantial sand and gravel deposits and crushed rock source areas (i.e., commodities used as, or in the production of, construction materials). The State Geologist classifies MRZs within a region based on the following factors:

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates that significant mineral

deposits are present, or where it is judged that a high likelihood exists for their presence.

- MRZ-3: Areas containing mineral deposits for which the significance cannot be determined from available data.
- MRZ-4: Areas where available information is inadequate for assignment of any other MRZ category.

Mining operations and mine reclamation activities are required to be performed in accordance with laws and regulations adopted by the SMGB. The State Department of Conservation's Office of Mine Reclamation (OMR) oversees reclamation requirements.

Division of Oil, Gas, and Geothermal Resources

The California State Department of Conservation maintains the Division of Oil, Gas, and Geothermal Resources (DOGGR). The DOGGR is responsible for monitoring the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells with the intention of environmental protection, public health and safety, and general environmental conservation methods. The DOGGR is also responsible for collecting groundwater, oil, gas, and geothermal resource data for maintaining a record of all drilled and abandoned well locations.

Division of Mines and Geology

The CDMG operates within the Department of Conservation. The CDMG is responsible for assisting in the utilization of mineral deposits and the identification of geological hazards.

4.10.2.2 San Benito County General Plan

The San Benito County General Plan Open Space and Conservation Element Update (1995) contains a number of goals, objectives, and policies which serve to protect mineral resources within the County.

Goal 3	Natural Resources. To provide for the conservation, development, and utilization of natural resources, including water and its hydraulic force, water quality, forests, soils, rivers and other waters, fisheries, wildlife, minerals, energy and other natural resources.
Objective 3	Prevent land use conflicts within the vicinity of open space, mineral, off-road vehicle, fire hazard areas, and agricultural uses.
Objective 4	The protection of prime agricultural areas to preserve them for present and future agricultural production vital to the County.
Objective 5	Identify and inventory mineral resources requiring protection.
Policy 20	Significant mineral resources. It is the policy of the County to recognize areas classified Mineral Resource Zone 2 (MRZ-2) or Scientific Zone (SZ) pursuant to the Guidelines for Classification and Designation of Mineral

> Lands as mineral resources of statewide and regional significance. Strategies shall be developed to protect these mineral resources from premature development incompatible with mining.

4.10.3 Methods and Significance Criteria

The following significance criteria for mineral resources were derived from the Environmental Checklist in the CEQA Guidelines, Appendix G. An impact of the proposed project would be considered significant and would require mitigation if it would:

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

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

4.10.4 Potential Environmental Effects

a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

No Impact. The proposed project would be located on an undeveloped area adjacent to the landfill, and would not be located in the vicinity of mineral extraction sites. The project would not have a significant effect on gravel resources in the area. Therefore, the project would not result in impacts to mineral resources.

b) *Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?*

No Impact. The project would not result in a s significant impact from the loss of availability of a known mineral resource.

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4.11 Noise

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			✓	
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				✓
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				✓

4.11.1 Environmental Setting

Sources of ambient noise in the project vicinity are primarily associated with operations at the John Smith Road Landfill and truck traffic along the local roadway network.

4.11.1.1 Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective: one person's music is another's headache.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment. All noise levels reported in this Initial Study are in terms of A-weighted levels, but are expressed as dB, unless otherwise noted.

The decibel scale is logarithmic, not linear. In other words, two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70 dBA sound is half as loud as an 80 dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (L_{dn}) is based upon the average noise level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 23 lists several examples of the noise levels associated with common situations.

Table 23. Typical Noise Levels		
Common Outdoor Activities	**Noise Level (dBA)**	**Common Indoor Activities**
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft)	--100--	
Gas Lawn Mower at 1 m (3 ft)	--90--	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	--80--	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	--70--	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	--60--	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing
Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. November 2009.		

4.11.1.2 Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6 dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

4.11.1.3 Existing Noise Receptors

Some land uses are considered more sensitive to ambient noise levels than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries and hospitals. Sensitive noise receptors may also include threatened or endangered noise sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, the primary noise sensitive land uses include large lot single family residences and residences within subdivisions. These residences are located to the east and west of the project site along John Smith Road and Best Road. To a lesser extent, residences along Fairview Road and Airline Highway are also potentially impacted by increased truck traffic noise.

4.11.1.4 Existing Ambient Daytime Noise Levels

To generally quantify existing ambient noise levels in the project vicinity, continuous (24-hour) and short-term ambient noise measurements were conducted by j.c. brennan & associates, Inc. in 2010 at various locations in the project vicinity. The ambient noise measurement locations are shown on **Figure 16**.

Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Source: ESP 2012, ESRI 2012, L&A 2012, jc brennan 2012.

Figure 16. Noise Measurement Sites

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The sound level meters were programmed to record the maximum and average noise level at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. **Table 24** shows the summary of the noise measurement data. The results of the continuous measurements are included in **Appendix C** of this Initial Study.

Table 24.

Summary of Existing Background Noise Measurement Data

Site	Date	Notes	Measured Noise Levels, dB						
				Daytime (7am-10pm)			Nighttime (10pm-7am)		
			L_{dn}	L_{eq}	L_{max}	L_{50}	L_{eq}	L_{max}	L_{50}
D	April 14-15, 2010	630 Heatherwood Estates	62	56.6	72.0	47	55.2	63.7	45
E	April 14-15, 2010	On Project Site @ 200 feet from John Smith Rd	51	49.0	65.1	44	43.2	55.7	30
F	April 15, 2010	2000 John Smith Rd	NA	43.5	61.1	40	@ 2:20 p.m.		
G	April 14, 2010	1796 John Smith Rd	NA	42.5	53.2	40	@ 11:30 a.m.		

Source: j.c. brennan & associates, Inc., 2010

4.11.1.5 On-Site Noise Levels

To determine existing noise levels associated with on-site operations at the landfill, three sets of continuous hourly noise measurements were conducted on February 21-22, 2012. **Figure 16** shows the locations of the existing landfill operations noise monitoring sites.

One set of noise measurements was conducted at a distance of 400 feet from the "green waste" area. The primary noise sources at the "green waste" area included a tub grinder, bulldozer, and excavator. The primary operations at this location include a bulldozer, which moves green waste or wood products into large piles, while an excavator loads the tub grinder.

Two other sets of noise measurements were conducted at the perimeter of Module 3 of the landfill, which is the currently active module. The noise measurements included the delivery of waste to the facility, bulldozers moving the waste, and a compactor which is used for compacting waste. At the end of the day, a soil cover or a tarp is spread over the daily waste.

Table 25. Summary of Existing Landfill Operations Noise Levels									
			Measured Noise Levels, dBA						
				Daytime (7am-10pm)			Nighttime (10pm-7am)		
Site	**Date**	**Location**	L_{dn}	L_{eq}	L_{max}	L_{50}	L_{eq}	L_{max}	L_{50}
A	2/21-22/12	400' from Grinder Operations	54.4	56.4	63.0	43	32.8	47.4	26
B	2/21-22/12	225' to center of Module 3	60.1	61.9	70.4	56	41.1	50.6	41
C	2/21-22/12	300' to center of Module 3	62.2	64.0	72.8	58	42.4	52.0	42
Source: j.c. brennan & associates, Inc., 2012									

4.11.1.6 Landfill Equipment Backup Alarm Noise Levels

Backup alarms associated with operation of on-site equipment contribute to existing noise levels. Traditional backup alarms are generally tonal in nature, and are inherently annoying. The California Code of Regulations for back-up alarms or warning devices states the following (*Barclays California Code of Regulations, Section 3661. Brakes and Warning Devices*):

> *(c) Every industrial truck and industrial tow tractor, except those guided or controlled by a walking operator, shall be equipped with a warning horn, whistle, gong, or other device which can be heard clearly above the normal industrial noises in the places of employment. Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3 Labor Code.*

The majority of on-site equipment currently used at the JSRL are equipped with Brigade Broadband Sound back-up alarms. The alarms are noted to be broad-band, and have a distinct sound other than any other operations at the facility. Noise measurements at the facility indicated that the Brigade Broadband back-up alarms produced noise levels of approximately 93 dBA, at a distance of 50 feet, inside of the facility, when the back of the equipment such as bulldozers or loaders was facing the sound level meter.

Overall sound level measurements were conducted for the landfill operations, at a distance of approximately 200 feet. The measurements were conducted using an LDL Model 824 precision integrating sound level meter, which was equipped with 1/3 octave band filters. During the measurements, the broad band back-up alarms were in use.

The California Office of Noise Control, Department of Health developed a Model Noise Control Ordinance. In that ordinance, a definition for a tone, such that a backup alarm would produce, was developed. The following is the definition of a tone:

A pure tone shall exist if the one-third octave band sound pressure level in the and with the tone exceeds the arithmetic average of the sound pressure levels of the two contiguous one-third octave bands by 5 dB for center frequencies of 500 Hz and above, and by 8 dB for center frequencies between 160 and 400 Hz, and by 15 dB for center frequencies less than or equal to 125 Hz.

Based upon evaluation of the noise measurements collected on-site (**Appendix C**), the background one-third octave band noise measurements do not meet the test of a pure tone.

4.11.1.7 Existing Roadway Noise Levels

To predict existing noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference noise factors for automobiles, medium trucks, and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions.

Traffic volumes for existing conditions were obtained from KD Anderson Transportation Engineers in the form of peak hour intersection movements. The p.m. peak hour traffic volumes were compiled into segment volumes and converted into daily traffic volumes using a factor of 10. Truck usage and vehicle speeds on the local area roadways were estimated from field observations.

Table 26 shows the existing traffic noise levels in terms of L_{dn} at a reference distance of 75 feet from the centerlines of the existing project-area roadways identified in the traffic study (existing conditions). This table also shows the distances to existing traffic noise contours. A complete listing of the FHWA Model input data is contained in **Appendix C**.

Table 26.
Existing Traffic Noise Levels and Distances to Contours

Roadway	Segment	L_{dn} @ 50 Feet (dBA)	Distance to Contours (feet)		
			70 dBA	65 dBA	60 dBA
John Smith Road	Fairview Road to Best Road	60 dBA	11	23	49
John Smith Road	Best Road to Landfill Entrance	59 dBA	9	20	42
John Smith Road	Landfill Entrance to Santa Ana Valley Road	50 dBA	2	5	10
Best Road	South of John Smith Road	51 dBA	3	5	12
Airline Highway	West of Fairview Road	67 dBA	29	63	136

Notes: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
Source: FHWA-RD-77-108 with inputs from KD Anderson, and j.c. brennan & associates, Inc. 2012.

4.11.1.8 Vibration

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

4.11.1.9 Nuisance Species Abatement

Nuisance species, such as gulls, corvids, rodents and mosquitoes are often attracted to activities at landfills. Currently, separated scrap metal is properly contained in bins to prevent habitation by nuisance species per the approved SWFP. Although immediate implementation of a nuisance species abatement plan is not envisioned at the JSRL, this environmental document considers the potential, future implementation of a nuisance species abatement plan, which may include, but is not limited to, noise-generating activities such as use of blank firing guns and other pyrotechnics, paintball guns, trained falcons, trucks/all-terrain vehicles, and propane cannons by JSRL personnel to minimize birds' desire to land at the landfill; and compaction and daily cover of refuse with soil to eliminate the potential of rodents and/or flies.

4.11.2 Regulatory Setting

The primary regulatory requirements associated with noise related to the proposed landfill expansion project are associated with noise standards of the San Benito County General Plan. The General Plan Noise Element and applicable noise standards are discussed below.

4.11.2.1 San Benito County General Plan

Presently, San Benito County is updating its General Plan. To date, updated Noise Element policies are not available. The Noise Element of the current County's General Plan sets forth noise compatibility standards for various land uses. For residential uses, noise levels up to 60 dB CNEL/Ldn are "clearly acceptable," and noise levels of up to 65 dB CNEL/Ldn are "normally acceptable." Based upon a typical exterior to interior noise reduction from a common building construction, exterior noise levels within the "normally acceptable" range (65 dB CNEL/Ldn) would provide a sufficient noise level reduction to ensure that interior noise levels remain within acceptable levels. For less noise-sensitive land uses, such as commercial uses, noise levels of up to 75 dBA CNEL/Ldn are considered "normally acceptable". In addition, the Noise Element contains the following applicable policies:

Goal 2, Policy 1	To route heavily traveled transportation routes to insure minimum noise encroachment upon residential and other noise sensitive land uses.
Goal 2, Policy 2	That county vehicles and equipment should be maintained in such condition so as to assure minimum noise emissions.
Goal 2, Policy 3	To provide for enforcement of existing statewide vehicle noise of the regulations by local authorities, specifically those sections of the California Vehicle Code which pertain to illegal or faulty exhaust systems, speed laws and operation of excessive noise.
Goal 2, Policy 4	To keep the number of truck routes in the County at a minimum and locate said routes in such a manner as to avoid impacts on those areas identified as noise sensitive. Wherever possible, trucks should be routed onto freeways and non-residential arterials, even where such routing is not the shortest distance between points.
Goal 2, Policy 6	To encourage County Roads Department and California Department of Transportation to utilize noise attenuation features in the design of new County roadways.
Goal 3, Policy 5	That new industrial developments shall not be permitted in areas designated as noise sensitive unless it can be demonstrated that they will not result in an appreciable increase in the ambient noise level.
Goal 4, Policy 1	It will be the County's continuing policy to control the operation of construction equipment at specific sound intensities and frequencies during specified hours.
Goal 4, Policy 2	The County will encourage the use of barriers or enclosures for equipment having high noise emissions.

4.11.2.2 San Benito County Zoning Ordinance

The San Benito County Zoning Ordinance (San Benito County Code, Title 25), Chapters 25.37.035, Article III, Section 25.37.035 specifies exterior noise level standards (hourly average L_{eq}) for non-transportation noise sources, based on land use designations. The County's stationary noise source standards are shown in **Table 27**.

Table 27. Stationary Noise Source Standards

Land Use Designation Land Use	Average Hourly Noise Level (L_{eq}) Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Rural Residential	45	35
Residential	50	40
Commercial	65	55
Industrial	70	60

Note:
Noise standards identify maximum acceptable noise from any source, as it affects surrounding properties, measured at the property line of the noise generating use. Exemptions:

- Safety signals, warning devices, emergency vehicle sirens.
- Temporary construction, demolition, or maintenance of structures between the hours of 7 a.m. and 7 p.m., except Sundays and Federal Holidays.
- Agricultural equipment, including but not limited to water well pumps, pest repelling devices, and other related necessary and agricultural oriented uses.
- Yard maintenance equipment operated between the hours of 7 a.m. and 7 p.m.

Source: j.c. brennan & associates, Inc., 2012

4.11.2.3 Vibration Standards

San Benito County does not contain specific policies pertaining to vibration levels. However, vibration levels associated with construction activities are discussed in this section.

Table 28, which was developed by the California Department of Transportation, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second (in/sec).

Table 28 indicates that the threshold for damage to structures ranges from 2 to 6 in/sec. One-half this minimum threshold or 1 in/sec peak particle velocity (ppv) is considered a safe criterion that would protect against architectural or structural damage. The general threshold at which human annoyance could occur is noted as 0.1 in/sec ppv (j.c. brennan & associates, Inc., 2012).

Table 28. Effects of Vibration on People and Buildings			
Peak Particle Velocity (inches/second)	**Peak Particle Velocity (mm/second)**	**Human Reaction**	**Effect on Buildings**
0-0.006	0.15	Imperceptible by people	Vibrations unlikely to cause damage of any type
0.006-0.02	0.5	Range of Threshold of perception	Vibrations unlikely to cause damage of any type
0.08	2.0	Vibrations clearly perceptible	Recommended upper level of which ruins and ancient monuments should be subjected
0.1	2.54	Level at which continuous vibrations begin to annoy people	Virtually no risk of architectural damage to normal buildings
0.2	5.0	Vibrations annoying to people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
1.0	25.4		Architectural Damage
2.0	50.4		Structural Damage to Residential Buildings
6.0	151.0		Structural Damage to Commercial Buildings
Source: Survey of Earth-borne Vibrations due to Highway Construction and Highway Traffic, Caltrans 1976.			

4.11.3 Methods and Significance Criteria

Potential construction-related noise impacts were determined by considering typical construction activities and equipment noise levels and the potential for substantial increases in noise at adjacent noise-sensitive receptors. Long-term noise impacts of the project could occur as a result of changes in traffic patterns and traffic noise. As discussed, j.c. brennan & associates, Inc. conducted a Technical Noise Analysis (j.c. brennan & associates, Inc., 2010) for the project to determine potential increases in traffic noise at sensitive receptor locations adjacent to the project area.

Traffic Noise Impact Assessment Methodology

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at a representative distance for existing and future without project and future with project conditions. Noise impacts are identified at existing noise-sensitive areas if the noise level increases, which result from the project or alternative, exceed the County's significance threshold.

To describe existing and projected noise levels due to traffic, the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used. The model is based upon the Calveno reference emissions noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn}, it is necessary to adjust the input volume to account for the day/night distribution of traffic.

The trip generation and heavy truck trips provided by KD Anderson Traffic Engineers were used to determine the overall traffic volumes for John Smith Road, Best Road and the Airline Highway. Based upon the traffic study provided by the traffic consultant, a fraction of the traffic accesses John Smith Road from Best Road, and none of the traffic from Santa Ana Valley Road. It was estimated that less than 1 percent of the traffic comes from the Santa Ana Valley Road to the east, and only 2 percent to 3 percent of the traffic access the site from Best Road. This analysis evaluates the changes in traffic noise levels along John Smith Road, Best Road and Airline Highway. Truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for future conditions which would result from the project are provided in terms of L_{dn} at a standard distance of 50 feet from the centerlines of the project-area roadway.

Construction Noise Impact Methodology

Most construction falls into two categories: base-liner (Module) construction, and closure cap construction. Each type of construction requires different equipment. There are eight remaining Modules to be constructed. Construction would typically be performed once every two to three years, and each Module would require would require approximately 65 construction days. Construction noise was analyzed using data compiled by the U.S. EPA that lists typical noise levels at 50 feet for construction equipment and various construction activities.

Noise would also be generated during the construction phase by increased truck traffic on area roadways and on-site grading. A significant project-generated noise source would include truck traffic associated with transport of heavy materials and equipment to and from construction sites and the movement of heavy construction equipment on the project site, especially during site grading. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction Vibration Impact Methodology

The types of construction vibration impact include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural. **Table 29** shows the typical vibration levels produced by construction equipment.

Table 29. Vibration Levels for Varying Construction Equipment		
Type of Equipment	**Peak Particle Velocity @ 25 feet**	**Approximate Velocity Level @ 25 feet**
Large Bulldozer	0.089 (inches/second)	87 (VdB)
Loaded Trucks	0.076 (inches/second)	86 (VdB)
Small Bulldozer	0.003 (inches/second)	58 (VdB)
Auger/drill Rigs	0.089 (inches/second)	87 (VdB)
Jackhammer	0.035 (inches/second)	79 (VdB)
Vibratory Hammer	0.070 (inches/second)	85 (VdB)
Vibratory Compactor/roller	0.210 (inches/second)	94 (VdB)
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006		

On-Site Activity Noise Impact Methodology

As a means of determining the potential noise impacts associated with the on-site activities, the CadnaA Noise Prediction Model was used. The CadnaA Model is capable of developing noise contours for multiple noise sources, while accounting for noise source frequency content, noise source heights, intervening topography, and atmospheric conditions. Direct inputs to the CadnaA Model included measured noise levels associated with existing operations, an assumed increase in noise of 3 dBA for future operations, which assumes a doubling of waste delivered to the site, topography of the initial operations in the expansion area, and future topography nearing the end of the lifespan of the landfill.

Nuisance Species Abatement Noise Impact Methodology

Nuisance species, such as gulls, corvids, rodents and mosquitoes are often attracted to activities at landfills. Although immediate implementation of a nuisance species abatement plan is not envisioned at the JSRL, this analysis includes evaluation of methods such as the use of raptors and discharge of blank firearms and propane cannons. Information used includes noise level data provided for differing firearms, as well as practices using falcons or raptors for scaring nuisance species.

The project would have a significant noise impact if it would result in:

- A substantial temporary or periodic increase in ambient noise levels at sensitive receptors above levels existing without the project;
- Exposure of persons to, or generation of, noise levels in excess of standards established in the San Benito County General Plan Noise Element or the San Benito County Zoning Ordinance;
- A permanent increase in ambient noise levels at sensitive receptors above levels existing without the project; or

- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

4.11.4 Potential Environmental Effects

a) *Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?*

Construction-Related Noise

Less Than Significant. Noise from construction activities would add to the noise environment in the immediate project vicinity. Activities involved in typical construction would generate maximum noise levels, as indicated in **Table 30**, ranging from 80 to 89 dB at a distance of 50 feet. Most construction falls into two categories: base-liner (Module) construction, and closure cap construction. Each type of construction requires different equipment. Construction of the remaining modules would typically be performed once every two to three years, and each Module would require approximately 65 construction days.

Table 30.
Noise Levels of Typical Construction Equipment

Equipment Type	Typical Equipment Level (dBA)- 50 ft from Source
Air Compressor	81
Backhoe	85
Concrete Pump	82
Concrete Breaker	82
Truck Crane	88
Dozer	87
Generator	78
Loader	84
Paver	88
Pneumatic Tools	85
Water Pump	76
Power Hand Saw	78
Shovel	82
Trucks	88

Source: Bolt, Beranek and Newman, Noise from Construction Equipment and Operations, Building Equipment and Home Appliances, U.S. EPA, 1971.

The San Benito County zoning ordinance exempts construction activities from the specified noise ordinance standards during the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday. Generally, if a construction project adheres to the construction times identified in the zoning ordinance, construction noise is exempted. Construction of the proposed project would occur in accordance with the San Benito

County zoning ordinance; therefore, construction-related noise impacts are considered less than significant.

Traffic-Related Noise

The proposed project would result in additional traffic along the primary roadway (John Smith Road). The heavy truck traffic is the primary noise source associated with the increase in roadway traffic. Table 31 shows the predicted increases in traffic noise levels along John Smith Road for cumulative plus project conditions. **Table 31** also provides the day/night average (L_{dn}) at a standard distance of 50 feet from the centerline of John Smith Road. **Appendix C** provides the complete inputs and results of the FHWA traffic noise prediction model.

Table 31. Predicted Cumulative No Project and Cumulative Plus Project Traffic Noise Levels, John Smith Road Landfill Expansion Project

Roadway	Segment	Distance	Traffic Noise Levels (L_{dn} dBA)			Distance to Contours (feet) Future No Project			Distance to Contours (feet) Future Plus Project		
			Future No Project	Future Plus Project	Change	70 L_{dn}	65 L_{dn}	60 L_{dn}	70 L_{dn}	65 L_{dn}	60 L_{dn}
John Smith Rd	Fairview Rd to Best Rd	50’	62 dBA	62 dBA	0	14	30	64	16	34	73
John Smith Rd	Best Rd to Landfill Entrance	50’	59 dBA	60 dBA	+ 1 dBA	10	21	46	11	23	50
John Smith Rd	Landfill Entrance to Santa Ana Valley	50’	50 dBA	51 dBA	+ 1 dBA	2	5	12	3	6	13
Best Road	S. of John Smith Rd	50'	51 dBA	51 dBA	0	3	5	12	3	6	12
Airline Highway	West of Fairview	50'	72 dBA	72 dBA	0	64	137	295	64	137	296

Notes: Distances to traffic noise contours are measured in feet from the centerlines of the roadways.
Source: FHWA-RD-77-108 with inputs from KD Anderson, and j.c. brennan & associates, Inc. 2012.

Based upon the analysis, the project would not result in an increase in overall traffic noise levels of more than 1 dBA L_{dn}. In addition, no residences would be exposed to traffic noise levels which exceed 65 dBA L_{dn} as a result of the project, which is considered to be “normally acceptable” under the General Plan Noise Element. Therefore, there would not be an exceedance of the County exterior noise level criteria. This impact is considered less than significant.

<u>On-Site Operations Noise</u>

As a means of predicting noise levels associated with the proposed on-site activities and noise sources, j.c. brennan & associates, Inc. used the computer based "CadnaA Noise Prediction Model. The CadnaA Model is capable of projecting the locations of noise contours for multiple noise sources, while accounting for natural topography, ground type, atmospheric conditions, noise source directionality, height of the noise sources, and frequency content of the noise sources.

Inputs to the CadnaA Model were obtained from base maps for the site. Noise level and sound power level data were based upon the noise measurement data described earlier. Direct outputs from the CadnaA Model are noise contours which show the cumulative noise levels from operations at the site. These assume all activities operating simultaneously on the project site.

Figure 17 shows the results of the CadnaA Model for existing Landfill conditions. The existing conditions assume all refuse delivery, spreading and compacting of refuse operations occurring in Module 3. In addition, the analysis assumes operations at the "green waste" area, including loading and operations of the tub grinder, and moving materials with the bulldozer.

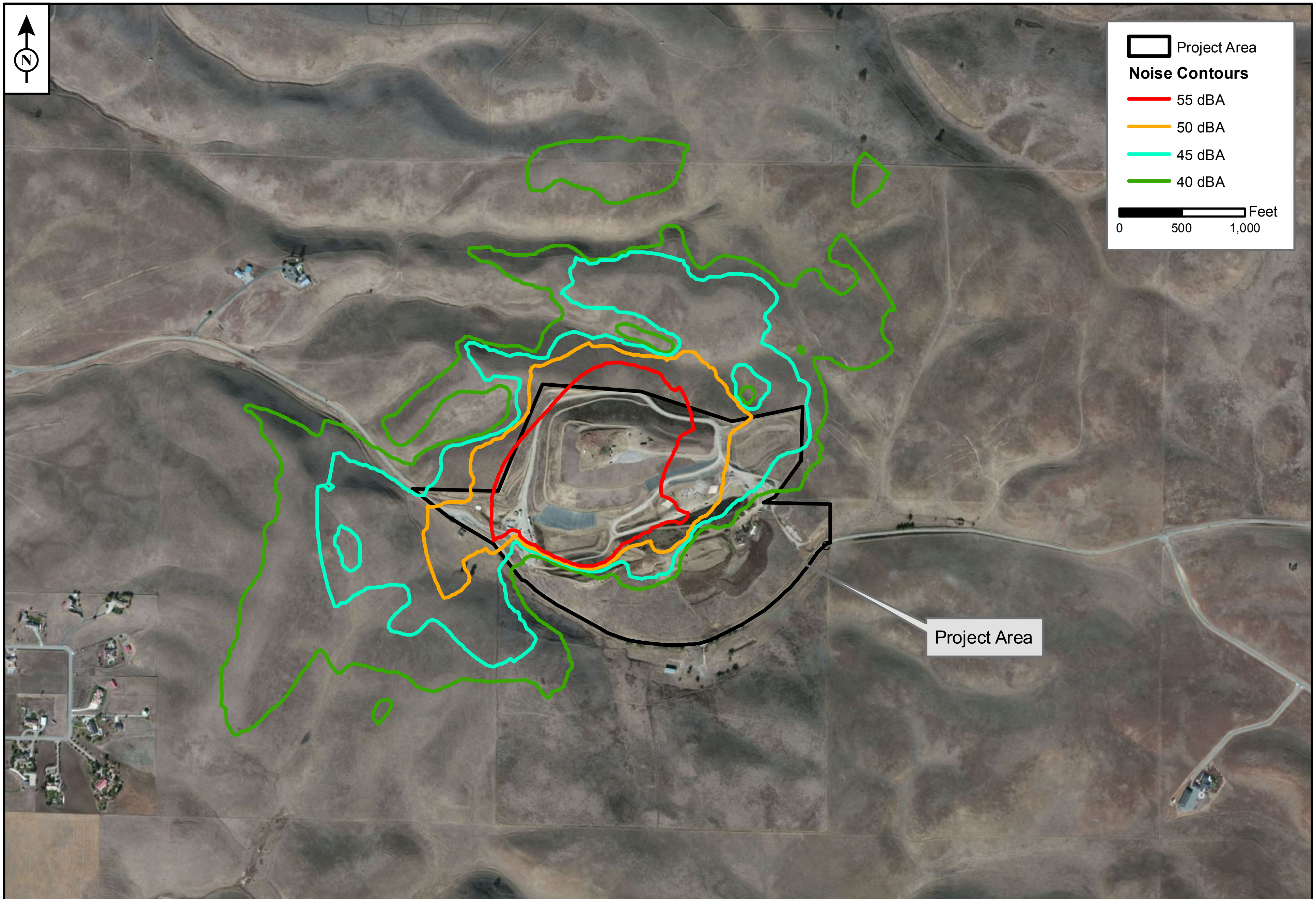
Figure 18 shows the results of the CadnaA Model for future conditions with landfill operations occurring in Module 9 and the equipment operating at the ultimate elevation. This analysis also assumes operations in the existing "green waste" area. This analysis assumes a 3 dB increase in overall noise levels at the expansion area of the landfill to account for a potential doubling of operations.

The locations of the noise contours shown in **Figures 17** and **18** indicate that the JSRL operations do not currently exceed the daytime noise level criterion of 70 dB L_{eq} (for Industrial uses) and would not exceed the daytime noise level criterion of 70 dB L_{eq} in the future, at the property line of the landfill.

Figures 17 and **18** also indicate that the JSRL operations do not currently exceed the daytime noise level criterion of 45 dBA L_{eq} (for Rural Residential uses) and would not exceed the daytime noise level criterion of 45 dBA L_{eq} in the future, at the property lines of at any residential or noise-sensitive uses.

It is expected that the noise contours under future operations may shift to the east and west somewhat, depending on which landfill module is being utilized. However, based upon the location of the future 40 dBA and 45 dBA L_{eq} noise level contours, it is expected that residences would be exposed to landfill operations of less than 40 dBA L_{eq}. Therefore, operations of the landfill are expected to be a less than significant impact.

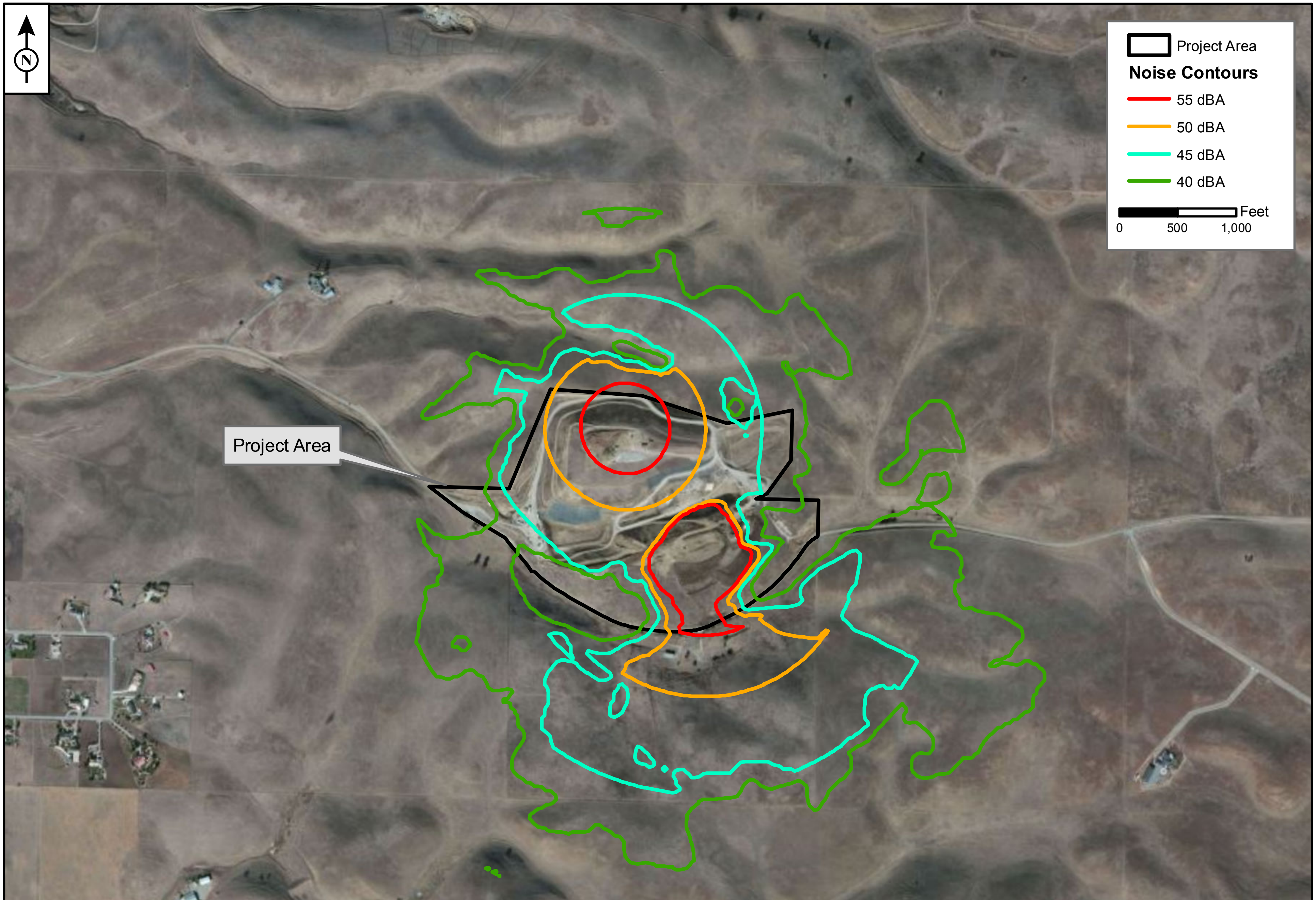
b) *Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*



Source: ESP 2012, ESRI 2012, L&A 2012, jc brennan 2012.

Figure 17. Existing Noise Contours

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Source: ESP 2012, ESRI 2012, L&A 2012, jc brennan 2012.

Figure 18. Noise Contours after Proposed Project

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

Construction-Related Vibration

Less Than Significant. The primary construction activities associated with the project would occur during base liner installation and during cap closure. However, these activities would occur at considerable distances from existing occupied residences. Comparing **Table 28** which contains the criteria for acceptable vibration levels to **Table 30**, which shows potential vibration impacts, it is not expected that structural damage or annoyances at nearby residences would result from construction-related vibration. This impact is considered to be less than significant.

c) *Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?*

Less Than Significant. As discussed above in Item 4.12.3(a), the proposed project would not result in a substantial permanent increase in ambient noise levels. The proposed project would not result in an increase in overall traffic noise levels of more than 1 dBA L_{dn}. In addition, no residences would be exposed to traffic noise levels which exceed 65 dBA L_{dn} as a result of the project, which is considered to be "normally acceptable" under the General Plan Noise Element.

Additionally, the proposed project would not exceed the daytime noise level criterion of 70 dB L_{eq} (for Industrial uses) at the property line of the landfill nor would it exceed the daytime noise level criterion of 45 dBA L_{eq} (for Rural Residential uses) at the property lines of at any residential or noise-sensitive uses. Therefore, this impact is considered less than significant.

Nuisance Species Abatement

Less Than Significant. The proposed project includes nuisance species abatement, which could employ the use of raptors, discharge of blank firearms, or use propane cannons. The loudest type of nuisance abatement would be the use of propane cannons. An example of a propane cannon is the ZON Gun which produces a periodic loud explosion, based upon a timer setting. Its primary use is to frighten birds and to prevent them from feeding in the agricultural fields, or in this case refuse at the project site.

Short-term noise level measurements of a ZON Gun were conducted to quantify individual "firings" of the gun. The ZON Gun was found to fire once every three minutes. The gun can be set to produce anywhere from 100 to 125 dBA at the muzzle. Table 32 shows a summary of the short-term noise measurement results.

Table 32. **Short-Term Event Noise Levels**					
Location	**Description**	**Distance (ft)**	**Time**	**Sound Measurements (dBA)**	
				SEL	**L_{max}**
Side Exposure	ZON Gun	40	9:02 a.m.	93	94
Front Exposure	ZON Gun	100	9:08 a.m.	85	86
Source: j.c. brennan & associates, Inc., 2009, Williams, California					

Based upon the data shown in **Table 32**, the resulting hourly L_{eq} can be calculated using the following equation:

$$L_{eq} = \text{SEL} + 10 \log N_{eq} - 35.6, \text{ dBA where:}$$

SEL is the mean SEL of the event, N_{eq} is the sum of the number of hourly events, and 35.6 is 10 times the logarithm of the number of seconds in an hour.

Assuming 20 events per hour, the hourly L_{eq} at a distance of 100 feet would be 62.4 dBA. Predicted noise levels at the nearest residences are expected to be approximately 33 dBA L_{eq}.

The San Benito County zoning ordinance exempts "pest repelling devices"; therefore, nuisance species abatement noise would be a less than significant impact.

d) *Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

As discussed above in Item 4.12.3(a), the proposed project would not result in a substantial temporary or periodic increase in ambient noise levels. Because construction of the proposed project would occur in accordance with the San Benito County zoning ordinance, which exempts construction activities from the specified noise ordinance standards during the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday, this impact is considered less than significant.

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

No Impact. The project is not located within an Airport Land Use Plan area or in the vicinity of an airport. The nearest public airport is the Hollister Municipal Airport, which is located approximately 5.8 miles northwest of the proposed project area.

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

No Impact. The project is not located within the vicinity of a private airstrip. The nearest private airstrip is Christensen Ranch, which is located approximately 3.1 miles north of the project area.

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4.12 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			✓	
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

4.12.1 Environmental Setting

Surrounding land uses and structures are rural in character and include agricultural and grazing lands. The nearest permanent residence is approximately 0.4 miles west-northwest of the facility's western property boundary. Approximately one residence is located within 0.5 mile of the project area, and approximately 37 residences are located within one mile of the project area.

There are approximately eight staff members at the JSRL: one (1) Operations Manager, two (2) scalehouse attendants, and five (5) operations employees. JSRL staff conducts disposal operations, landfill construction, and site maintenance operations at the current inflow rate. As discussed in **Section 3** of this document, the development of the proposed JSRL expansion could result in the employment of up to 10 staff members.

4.12.2 Regulatory Setting

San Benito County General Plan

The San Benito County General Plan Housing Element Update (1994) contains a number of goals, objectives, and policies which serve to provide citizens and public officials with the understanding of the housing needs of the community.

4.12.3 Methods and Significance Criteria

The following significance criteria for population and housing were derived from the Environmental Checklist in CEQA Appendix G. An impact of the proposed project would be considered significant if it would:

- Induce substantial population growth in an area, either directly or indirectly.
- Displace substantial numbers of people and/or existing housing, necessitating the construction of replacement housing elsewhere.

4.12.4 Potential Environmental Effects

a) *Would the project induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?*

Less Than Significant. The project does not propose construction or replacement of new homes or businesses, would not affect the current distribution of homes and businesses, and does not propose extension of infrastructure that could support substantial population growth. For the proposed landfill expansion project, it is assumed that temporary workers associated with construction or permanent employees associated with operation would commute from their existing residences and the scope of the project modification would not include the construction of additional housing for workers either during construction or as part of operation of the landfill. Therefore, this impact is considered less than significant.

b) *Would the project displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?*

No Impact. The project does not involve the displacement of any housing.

c) *Would the project displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?*

No Impact. The project does not involve the displacement of people.

4.13 Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?				✓
Police protection?				✓
Schools?				✓
Parks?				✓
Other public facilities?				✓

4.13.1 Environmental Setting

Fire Protection

The California Department of Forestry and Fire Protection (CalFire) is currently responsible for providing structural fire protection and emergency response throughout the unincorporated County. The County Fire Department consists of a contract with CalFire to manage and provide these services. The nearest CalFire station is located on Fairview Road, approximately 2.5 miles northwest of the project site. The station is staffed by two full-time fire fighters and supplemented by 25 on-call volunteer fighters (County of San Benito Fire Department, 2008). Fire Department apparatus includes four fire engines and one water tender.

Police Protection

The San Benito County Sheriff's Department currently operates from its headquarters at 451 Fourth Street in Hollister, approximately five miles northwest of the project site. The Sheriff's Department provides law enforcement services throughout the County including the project site.

Schools

The schools sited most closely to the proposed project area are Calvary Christian School and Meadowlark Preschool, which are located approximately 2.6 miles and 2.4 miles west of the proposed project area, respectively.

Parks

The nearest public park is Cerra Vista School Park, which is located approximately 2.4 miles west of the project area.

4.13.2 Methods and Significance Criteria

Potential effects on public services were determined through identifying existing services and considering the potential for interference with or increased requirements for such services that would occur as a result of project construction and/or operation.

Impacts on public services are considered significant under CEQA if the project would:

- Interfere with emergency response (police, fire, or medical services) through project-related traffic delays or restrictions to emergency vehicle movement within the project area, or otherwise substantially affect emergency response activities;
- Create an increase in demand for public services not anticipated in current public services service projections and capacity.

4.13.3 Potential Environmental Effects

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

a) *Fire protection?*

No Impact. The proposed project would not include elements that would increase human presence in the area; therefore, there would be no need for additional governmental facilities to provide fire protection.

b) *Police protection?*

No Impact. The proposed project would not include elements that would increase human presence in the area; therefore, there would be no need for additional governmental facilities to provide police protection.

c) *Schools?*

No Impact. The proposed project would not include elements that would increase population in the area and would not result in an increased demand for schools.

d) *Parks?*

No Impact. The proposed project would not include elements that would increase human presence in the area; therefore, the project would not result in an increased demand for parks or governmental facilities to maintain parks.

e) *Other public facilities?*

No Impact. The proposed project would not include residential or commercial components that would result in increased human presence in the area; therefore, the project would have no impact on other public facilities.

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4.14 Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓

4.14.1 Environmental Setting

There are no recreation facilities within or adjacent to the proposed project area. The nearest recreational area is the Ridgemark Golf and Country Club, located approximately 1.5 miles southwest of the project area. The nearest public park is Cerra Vista School Park, which is located approximately 2.4 miles west of the project area.

4.14.2 Regulatory Setting

San Benito County General Plan

The San Benito County General Plan Open Space and Conservation Element (1995) contains a number of goals, objectives, and policies which guide the development and preservation of recreational facilities throughout the County.

4.14.3 Methods and Significance Criteria

The following significance criteria for recreation were derived from the Environmental Checklist in CEQA, Appendix G. An impact of the proposed project would be considered significant if it would:

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

- Include recreational facilities, or require the construction or expansion of existing facilities, which might have an adverse physical effect on the environment.

4.14.4 Potential Environmental Effects

a) *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*

No Impact. The project would not increase the use of existing parks in the area and does not include the construction of any recreational facilities.

b) *Does the project include recreational facilities, or require the construction or expansion of existing facilities, which might have an adverse physical effect on the environment?*

No Impact. The project does not include the construction of any recreational facilities and would not require the expansion of existing recreational facilities.

4.15 Transportation/Traffic

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			✓	
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?			✓	
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
e) Result in inadequate emergency access?			✓	
f) Result in inadequate parking capacity?				✓
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				✓

4.15.1 Environmental Setting

4.15.1.1 Study Area

This study addresses traffic conditions in the vicinity of the JSRL project site, including along John Smith Road between Fairview Road and Santa Ana Valley Road and along Airline Highway west of Fairview Road. In addition, five intersections providing access to the landfill were also evaluated. The text that follows describes the facilities included in this analysis.

John Smith Road. John Smith Road is a two-lane rural county road without shoulders. The road is designated as a minor collector. The County conducted daily volume counts east of Fairview Road and east of Best Road in March 2010. The counts were conducted over a period of seven days at Fairview Road and four days at Best Road. The midweek daily counts show an average daily traffic (ADT) volume of 951 vehicles per day (vpd) and a weekend volume of 1084 vpd. East of Best Road the volumes show an ADT of 452 vpd during the midweek and 491 vpd on the weekend. New daily traffic counts were conducted in January 2012 west of Santa Ana Valley Road and show the ADT to be 158 vpd.

Airline Highway (State Route (SR) 25). Airline Highway is a state route running generally in a north-south direction. SR 25 passes through Hollister to the north as a multi-lane roadway. South of Sunset Drive Airline Road becomes a two-lane arterial roadway with left turn lanes at key intersections. Daily counts were conducted in January 2012 west of Fairview Road. The counts show that Airline Highway carries about 8,068 vpd.

4.15.1.2 Study Area Intersections

The quality of traffic flow is typically governed by the operation of major intersections. For this study, six intersections serving this site were identified for evaluation. Peak hour counts were conducted at each of the intersections. The a.m. peak hour counts were conducted by the County in March 2010 at three locations along John Smith Road: at Fairview Road, Best Road and at the Landfill Access Road. The p.m. peak hour counts were conducted in January 2012 at these three intersections, and a.m. and p.m. counts were conducted at the remaining three intersections described below. The study locations include:

John Smith Road / Fairview Road intersection is an unsignalized tee intersection. Stop control is provided along John Smith Road. Each approach consists of a single lane. The John Smith Road leg approaches the intersection at a skew to the north. This allows traffic to and from the north to complete turns easily; however, vehicles coming to and from the south have to make tighter turns in order to complete the intended movement.

John Smith Road / Best Road is an unsignalized tee intersection. Stop control is provided along Best Road with each approach consisting of a single lane. The Best Road leg approaches the intersection at a skew to the east. This allows traffic to and from the east to complete turns easily. Vehicle movements to and from the west have to make tighter turns in order to complete the intended movement.

Airline Highway (State Route (SR) 25) / Fairview Road – Ridgemark Drive. The Airline Highway / Fairview Road – Ridgemark Drive intersection is an all-way stop controlled tee intersection. Airline Highway runs east-west through the intersection while Fairview Road approaches from the north and Ridgemark Drive approaches from the south. Both approaches along Airline Highway include left, through and right turn lanes. The Fairview Road and Ridgemark Drive approaches also include left, through and right lanes; however, the Ridgemark Drive right turn lane is long enough to allow a single vehicle to queue.

Airline Highway (SR 25) / Best Road – South Ridgemark Drive intersection is a minor leg stop controlled four-way intersection. Stop control is provided along Best Road and South Ridgemark Drive. The eastbound Airline Highway approach consists of single left, through and right lanes while the westbound approach includes a left turn lane and a through-right lane. The approaches along Best Road and South Ridgemark Drive include single lanes.

John Smith Road / Santa Ana Valley Road intersection is an unsignalized tee intersection. Stop control is provided along John Smith Road. Each approach consists of a single lane. The intersection is located along a curve with the John Smith Road approach on the inside of the curve.

John Smith Road / Landfill Access Road intersection is an unsignalized tee intersection. Stop control is provided along the landfill access road. Each approach consists of a single lane. The landfill access road approach includes a sharp curve directly off of John Smith Road and to the east where the road parallels John Smith Road to the entrance of the landfill. A raised median exists along the landfill road to direct inbound and outbound traffic. This is likely used to discourage motorists from cutting the corner when turning left from the landfill access road.

4.15.1.3 Non-Automobile Transportation

Public Transit. San Benito County Express provides public transit service to the communities of Hollister and San Juan Bautista. There are three routes in the City of Hollister and inter-county routes to Gilroy and the Caltrain system; however, there are no routes south of the City of Hollister.

Bicycle and Pedestrian Facilities. Bicycle facilities are sporadic within San Benito County. A 2009 Bikeway and Pedestrian Master Plan study by Alta Planning noted about 10 miles of bike facilities in the County. Due to the rural nature of the County, sidewalk development is minimal, in keeping with the County's rural character. No bicycle facilities nor pedestrian facilities present in the vicinity of the project.

4.15.1.4 Level of Service Analysis

Methodology. Level of Service Analysis (LOS) has been employed to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts. Level of Service measures the *quality* of traffic flow and is represented by letter designations from "A" to "F", with a grade of "A" referring to the best conditions, and "F" representing the worst conditions. **Table 33** presents typical LOS characteristics while **Table 34** shows the level of service threshold volumes for various roadway types.

Table 33.

Level of Service Definitions

Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay >55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay >50 sec/veh	Forced flow, breakdown.

Sources: 2000 Highway Capacity Manual, Transportation Research Board (TRB) Special Report 209.

Table 34.

Level Of Service Threshold Volumes For Roadway Segments

Roadway Type	Total Daily Service Volumes in both Directions (ADT)				
	LOS A	LOS B	LOS C	LOS D	LOS E
8-Lane Divided Arterial (w/ left turn lane)	40000	47000	54000	61000	68000
6-Lane Divided Arterial (w/ left Turn lane)	32000	38000	43000	49000	54000
4-Lane Freeway	26000	40000	57000	61000	68000
4-Lane Expressway	18000	27000	36000	45000	50000
4-Lane Undivided Arterial (with left-turn lane)	22000	25000	29000	32500	36000
4-Lane Undivided Arterial (no left turn lane)	16000	19000	22000	24000	27000
2-Lane Arterial (w/ left-turn lane)	11000	12500	14500	16000	18000
2-lane Rural Highway	4000	8000	12000	17000	25000
2-Lane Collector	6000	7500	9000	10500	12000
2-Lane Local	1200	1400	1600	1800	2000

Source: Highway Capacity Manual (LOS projection for Ideal condition)

Significance Criteria. San Benito County General Plan Transportation Element, Policy 4 states, "A level of service of C shall be used for the accepted minimum standard of operation for intersections and roadways."

The General Plan Transportation Element establishes LOS "C" as the minimum standard threshold. A project that would result in increased vehicle trips that would worsen levels of service at an intersection or on a roadway segment to below LOS C would trigger the need for intersection/roadway segment improvements as necessary to restore LOS C or better. If an intersection or roadway segment is already operating lower than LOS C, any increase in traffic to existing conditions would require improvements to raise current condition to LOS "C" or better. Any project that results in a drop in LOS at any intersection or roadway segment, but not lower than the LOS C threshold, requires the project to pay a fair-share funding contribution (i.e., a payment toward future roadway improvements proportionate to the project's contribution of vehicle trips at a given location) pursuant to establishment of a benefit area.

For the purposes of this traffic analysis, the project's traffic impact is considered *significant* if the proposed project would:

- Cause existing or predicted future operations to degrade from LOS C or better to LOS D or worse; or
- Cause an increase in peak-hour delay of more than 5 seconds at an intersection already operating (or predicted to operate in the future) at LOS D or worse.

The area surrounding the JSRL is within rural San Benito County; therefore Traffix Version 8.0 was used for each of the six study intersections. Traffix software conforms to the *Highway Capacity Manual* Transportation Research Board 2000 methodology.

4.15.1.5 Existing Traffic Conditions

Existing traffic counts conducted by San Benito County in March 2010 were used during the a.m. peak hour for the following intersections:

- John Smith Road and Fairview Road
- John Smith Road and Landfill Access Road
- John Smith Road and Best Road

New p.m. traffic counts were conducted in January 2012 at the above locations. New traffic counts were also conducted at the following three locations during both a.m. and p.m. peak hour periods:

- John Smith Road and Santa Ana Valley Road
- Airline Highway and Fairview Road
- Airline Highway and Best Road

The a.m. and p.m. time periods were selected as being representative of the "worst case" conditions. **Figure 19** identifies the current lane configuration and peak hour traffic volumes for the study intersections.

Existing 24-hour roadway segment count data provided by the County Public Works Department were used along the following segments:

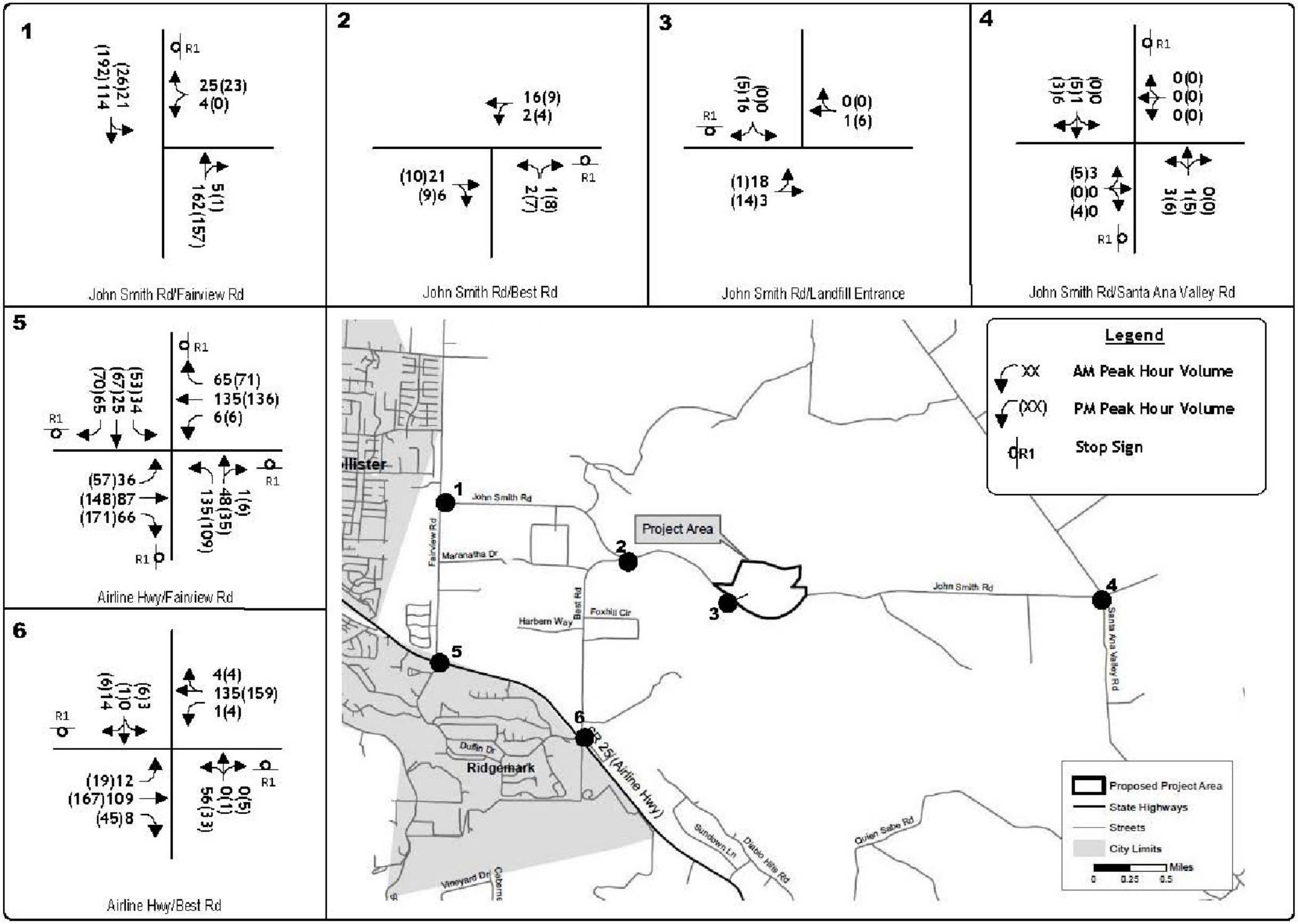
- John Smith Road, east of Fairview Road
- John Smith Road, east of Best Road

New 24-hour counts were conducted along the following road segments:

- John Smith Road, west of Santa Ana Valley Road
- Airline Highway, west of Fairview Road

Volume data provided by the County at the Landfill access road indicates that about 30 percent of all traffic to the landfill consists of trucks. This percentage was used at each of the John Smith Road intersections.

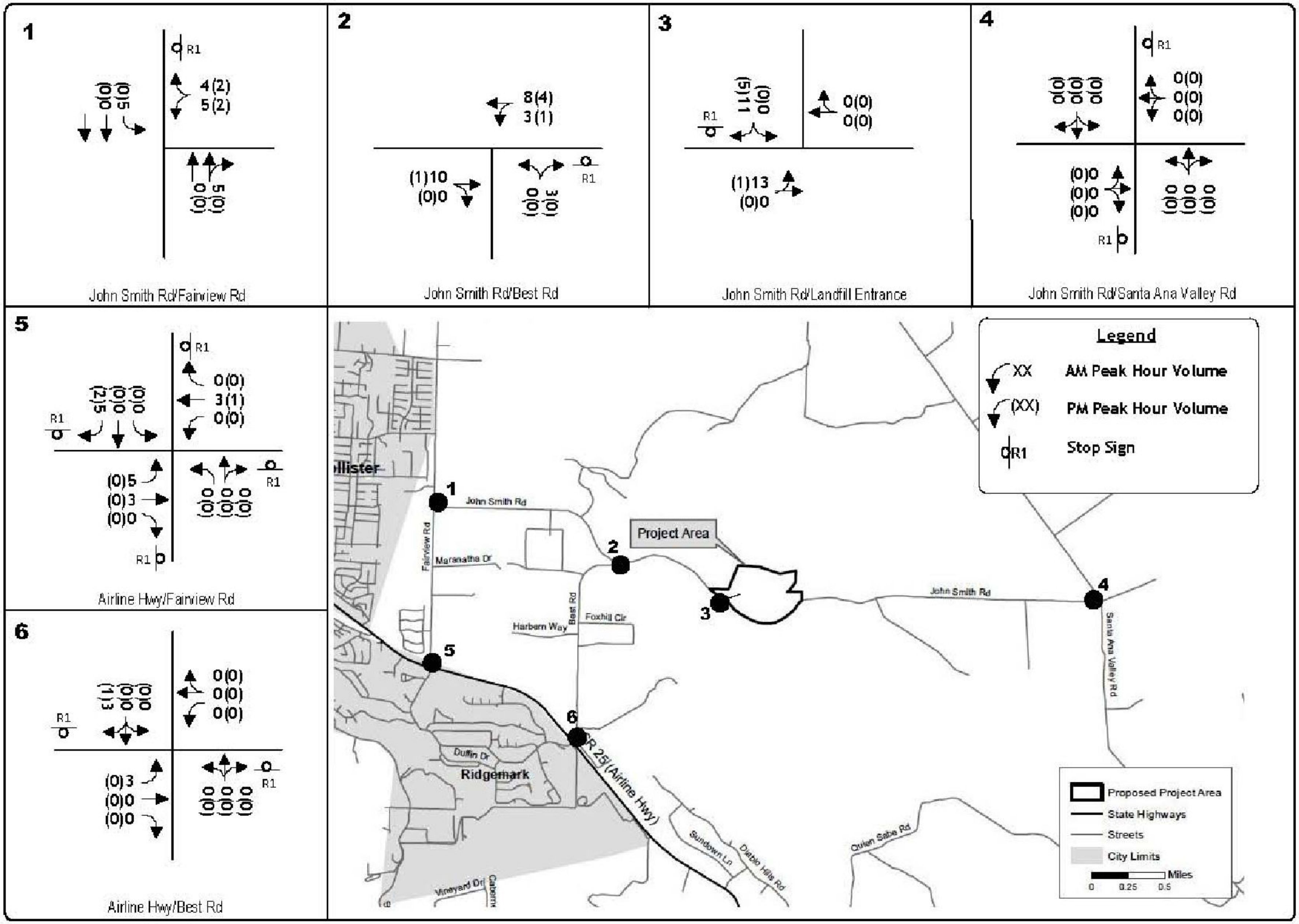
Intersection Levels of Service. Level of Service is based on and measured in terms of delay (seconds) per vehicle for the peak 15-minute analysis period. For unsignalized minor leg stop controlled intersections the movement with the worst delay approach movement is considered the critical level of service for the intersection. For multiway stop controlled intersections the level of service is determined based on the overall average delay in the intersection. **Table 35** summarizes current Levels of Service at the study area intersections during the a.m. and p.m. peak hour. All intersections currently operate at LOS B or better.



Source: ESP 2012, ESRI 2012, L&A 2012, KDA 2012.

Figure 19. Existing Traffic Volumes and Lane Configurations

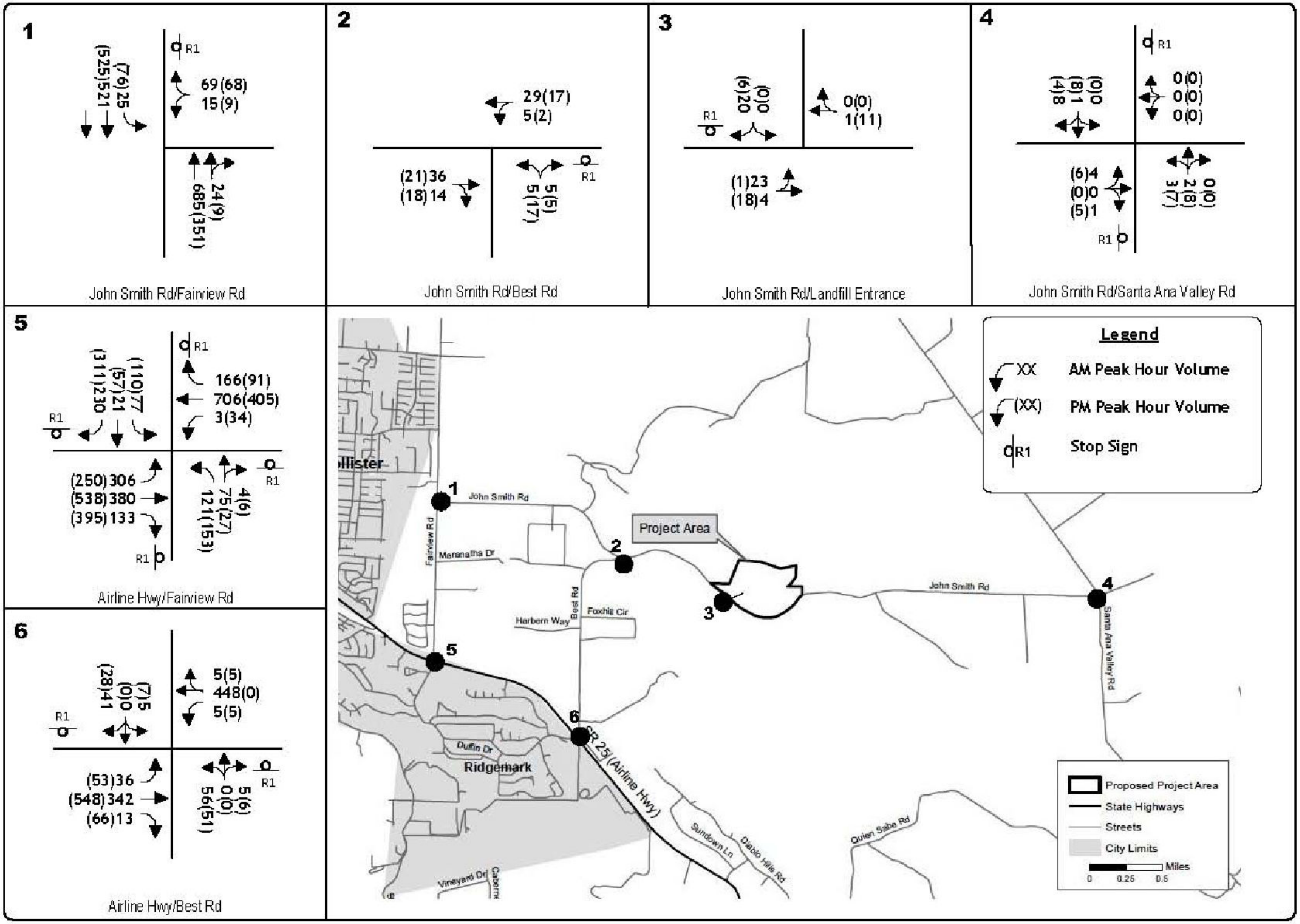
JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Source: ESP 2012, ESRI 2012, L&A 2012, KDA 2012.

Figure 20. Project Only Traffic Volumes and Lane Configurations

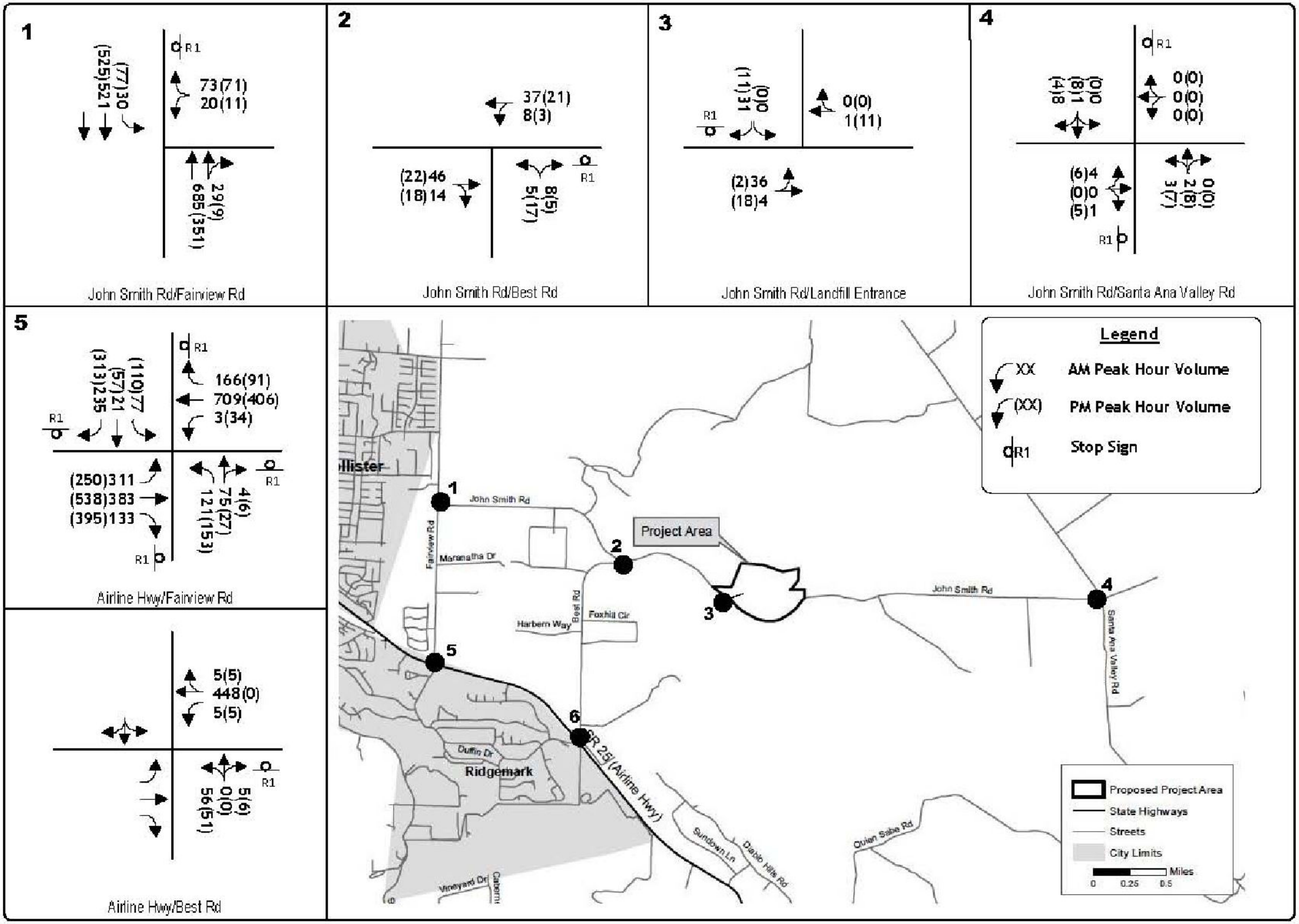
JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Source: ESP 2012, ESRI 2012, L&A 2012, KDA 2012.

Figure 21. Cumulative Traffic Volumes and Lane Configurations

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT



Source: ESP 2012, ESRI 2012, L&A 2012, KDA 2012.

Figure 22. Cumulative Plus Project Traffic Volumes and Lane Configurations

JOHN SMITH ROAD LANDFILL EXPANSION PROJECT

Table 35. Existing Peak Hour Levels Of Service At Project Area Intersections						
		AM Peak Hour		PM Peak Hour		
Location	Control	LOS	Average Delay (secs)	LOS	Average Delay (secs)	Peak Hour Warrant Met?
Fairview Rd / John Smith Rd	WB Stop					No
SB Left		A	7.6	A	7.6	
WB		A	9.8	A	9.5	
John Smith Rd / Best Rd	NB Stop					No
NB		A	8.9	A	8.8	
WB Left		A	7.5	A	7.5	
John Smith Rd / Landfill Access	SB Stop					No
SB		A	8.6	A	8.6	
EB Left		A	7.5	A	7.5	
John Smith Rd / Santa Ana Valley Rd	EB Stop					No
NB Left		A	7.5	A	7.5	
EB		A	8.8	A	8.8	
Airline Highway (SR 25) / Fairview Rd	MWS					No
Overall		A	9.7	B	10.6	
NB		B	10.3	B	10.8	
SB		A	9.2	B	10.1	
EB		A	9.4	B	10.6	
WB		A	9.8	B	10.7	
Airline Highway (SR 25) / Best Rd	NB / SB					No
NB	Stop	B	10.9	B	11.4	
SB		A	9.6	B	11.0	
EB Left		A	7.6	A	7.6	
WB Left		A	7.5	A	7.7	
Source: KD Anderson, 2012 MWS – multi-way stop						

Existing Roadway Segment Levels of Service. Table 36 summarizes Levels of Service based on the current daily traffic volumes on study area roads with the existing roadway configuration. Applicable Level of Service thresholds and roadway classifications are presented.

Table 36. Existing Project Area Roadway Segment Levels Of Service						
			Standard		Existing Mid-Week Conditions	
Roadway	**Location**	**Facility Classification**	**LOS**	**Daily Volume Threshold**	**Daily Volume**	**LOS**
John Smith Rd	East of Fairview Rd	2-Lane Collector	C	9,000	952	A
	East of Best Rd	2-Lane Collector	C	9,000	490	A
	West of Santa Ana Valley Rd	2-Lane Collector	C	9,000	158	A
Airline Highway	West of Fairview Rd	2-Lane Arterial (w/ left-turn lane)	C	14,500	8,068	A
Source: KD Anderson, 2012						

4.15.1.6 Future Roadway Configurations

Future changes in intersection or roadway geometry have been identified for Highway 25 and along Fairview Road. The Caltrans Transportation Concept Report (TCR) for Highway 25 and the City of Hollister General Plan identifies Highway 25 (Airline Highway) to be widened south to four lanes to Fairview Road. The City General Plan identifies the widening to occur from Sunset Drive to Fairview Road while the TCR notes that the Project Study Report (PSR) was completed in 2002 for the segment from "just south of Fairview Road" (Post Mile 47.4) to Post Mile 49.7. For this Initial Study it was assumed that the northbound approach to the Fairview Road widens to two lanes at the intersection to provide additional capacity and transition through the intersection. The City of Hollister General Plan also identifies that Fairview Road will be widened to a four-lane major thoroughfare by 2023. It is assumed that left turn lanes will be provided at key intersections including John Smith Road. The southbound approach of the Airline Highway / Fairview Road intersection is assumed to remain in its current configuration with left, through and right lanes; the right turn lane is assumed to become a trap lane from the upstream 4 lane roadway segment.

4.15.2 Regulatory Setting

San Benito County Council of Governments

The San Benito County Council of Governments (San Benito COG) is an association of city and county governments created to address regional transportation issues. Its member agencies include the County of San Benito and the two incorporated cities within the County. As the federally designated Metropolitan Planning Organization and the state-designated Regional Transportation Planning Agency for San Benito County, the San Benito COG is responsible for developing and updating a variety of transportation plans and for allocating the federal and state funds to implement them.

Acting in this capacity, San Benito COG is responsible for developing and adopting several transportation planning documents and studies, including the Regional

Transportation Plan (RTP). The RTP is a long-term (20-year) general plan for the region's transportation network, and encompasses projects for all types of travel, including aviation and freight movement. The plan assesses environmental impacts of proposed projects and establishes air quality conformity as required by federal regulations. The document also discusses inter-modal and multi-modal transportation activities.

San Benito County General Plan

The following goals and policies from the Transportation Element of the San Benito County General Plan are relevant to the proposed project regarding transportation and circulation impacts:

Scenic Roads and Highways Element

Policy 1 It is the policy of San Benito County to provide for the protection of certain transportation corridors which are recognized as having unusual or outstanding scenic qualities.

Transportation Element

Policy 3 Improvements to road systems needed to accommodate traffic generated by new development shall be funded by that development.

Policy 4 A level of service of C shall be used for the accepted minimum standard of operation for intersections and roadways.

Policy 5 New road development and design (private or public) shall conform to County Standards.

Policy 10 Road and private access road development in hillside areas shall minimize cut and fill and shall follow the natural contours of the land as much as possible.

Policy 12 Road development shall minimize the extent of building in hazardous areas (e.g. faults, flood plains, landslide areas, fire hazard areas).

Policy 28 Prohibit land use activities within unincorporated areas which interfere with the safe operation of aircraft or that would be subject to hazards from the operation of aircraft.

Policy 29 Restrict new development in existing or planned Airport Clear zones, in concurrence with requirements of the FAA and of the cities' operating the facility to land uses such as agriculture, open spaces, parks, and municipal facilities.

Policy 33 Require adequate loading facilities in developments requiring frequent loading and unloading of goods.

4.15.3 Methods and Significance Criteria

Level of Service Analysis (LOS) has been employed to provide a basis for describing existing traffic conditions and for evaluating the significance of project traffic impacts.

Level of Service measures the *quality* of traffic flow and is represented by letter designations from "A" to "F", with a grade of "A" referring to the best conditions, and "F" representing the worst conditions.

San Benito County General Plan Transportation Element, Policy 4 states, “A level of service of C shall be used for the accepted minimum standard of operation for intersections and roadways.”

The Transportation Element establishes LOS “C” as the minimum standard threshold. A project that would result in increased vehicle trips that would worsen levels of service at an intersection or on a roadway segment to below LOS C would trigger the need for intersection/roadway segment improvements as necessary to restore LOS C or better. If an intersection or roadway segment is already operating lower than LOS C, any increase in traffic to existing conditions would require improvements to raise current condition to LOS “C“ or better. Any project that results in a drop in LOS at any intersection or roadway segment, but not lower than the LOS C threshold, requires the project to pay a fair-share funding contribution (i.e., a payment toward future roadway improvements proportionate to the project’s contribution of vehicle trips at a given location) pursuant to establishment of a benefit area.

For the purposes of this traffic analysis, the project’s traffic impact is considered significant if expansion of the JSRL would:

- Cause existing or predicted future operations to degrade from LOS C or better to LOS D or worse; or
- Cause an increase in peak-hour delay of more than 5 seconds at an intersection already operating (or predicted to operate in the future) at LOS D or worse.

The area surrounding the JSRL is within rural San Benito County; therefore Traffix Version 8.0 was used for each of the six study intersections. Traffix software conforms to the *Highway Capacity Manual* Transportation Research Board 2000 methodology.

4.15.4 Potential Environmental Effects

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

Less Than Significant. Under Section 15126.2 of the CEQA guidelines, a project must be evaluated individually and cumulatively to determine whether the project causes a significant effect on the environment. The project has been evaluated under Existing conditions (i.e., Existing plus Project conditions).

Under Existing plus project conditions (i.e., the continuation of existing landfill operations), the project would add up to 25 additional truck trips during weekday operations (see **Figure 20**). The additional truck trips would not increase the LOS experienced under existing conditions and would not result in an exceedance of the County LOS "C" standard (Flecker, Jonathan, pers. comm.). This impact is considered less than significant.

Under cumulative plus project conditions (i.e., the continuation of existing landfill operations with the additional 25 truck trips during weekday operations), an increase in the delay at the Airline Highway/Fairview Road – Ridgemark Drive and Airline Highway/Best Road intersections would be less than 5 seconds. (Discussed in more detail in Item 4.16.6(b), below). This impact is considered less than significant.

b) *Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?*

Less Than Significant. The JSRL is currently permitted to accept up to 500 tons of landfill waste and recyclable material each day. Current limitations also include no more than 600 inbound trips. The County currently accepts about an average of 400 tons per day (TPD), 250 TPD of which is buried waste material.

Data collected by JSRL staff over the four-year period 2008 to 2011 indicates that an average of 135 daily inbound trips occurred annually. Of the 135 trips 96 trips were self-haul vehicles while 39 trips were commercial trips. The commercial trips are comprised of local waste trucks and out-of-county waste trucks. With implementation of the proposed project, out-of-county waste is projected to increase by about 500 TPD. The current out-of-county truck hauls approximately 20 tons per truck. Based upon the projected increase in tonnage and the existing out-of-county truck capacity the project is expected to generate an additional 25 inbound truck trips per day.

Table 37 displays the a.m. and p.m. peak hour Levels of Service at each study intersection in the future "no project" and future plus project condition. Future growth within San Benito County will increase traffic along Airline Highway, Fairview Road and the surrounding roadway network.

Under the future no project condition (see **Figure 21**), two intersections will operate below County LOS D thresholds: Airline Highway / Fairview Road and Airline Highway / Best Road. The Airline Highway / Fairview Road – Ridgemark Drive intersection will operate at an LOS F condition in both a.m. and p.m. peak hours. The Airline Highway / Best Road intersection will also operate below the County LOS C threshold with the northbound approach operating at LOS D in the a.m. peak hour.

Under the future plus project condition (see **Figure 22**), the Airline Highway / Fairview Road – Ridgemark Drive intersection will continue to operate at an LOS F condition during both a.m. and p.m. peak periods. The change in delay (when comparing the future no project and future plus project conditions) is less than 5 seconds as identified in the Level of Service threshold criteria; therefore, the intersection will operate in an adverse, but not significant condition when considering the proposed project.

Under the future plus project, the northbound approach of the Airline Highway / Best Road intersection will continue to operate at an LOS D condition. The change in delay (when comparing the future no project and future plus project conditions) is less than 5 seconds as identified in the Level of Service threshold criteria; therefore, the intersection will operate in an adverse, but not significant condition.

2035 Roadway Segment Levels of Service.[13] **Table 38** summarizes Levels of Service based on the projected future daily traffic volumes. Each of the roadway segments will operate within accepted San Benito County guidelines under future no project and future plus project conditions.

[13] AMBAG maintains a long-range travel model for the region which is used to develop cumulative traffic conditions for transportation planning purposes. The current model base year is 2005 with a forecast year of 2035. Travel forecasts along the study roadways were based on the latest AMBAG model information. Traffic forecasts along the study roadways and surrounding roadways were provided by AMBAG. Although the proposed project has the potential to result in landfill closure in 2027 (as indicated in the Air Quality section of this Initial Study), the future analysis year of 2035 was evaluated for the purposes of traffic impacts in order to be consistent with the AMBAG model.

Table 37.
Cumulative Peak Hour Levels of Service at Project Area Intersections

Location	Control	Cumulative AM Peak Hour		Cumulative PM Peak Hour		Cumulative + Proj. AM Peak Hour		Cumulative + Proj. PM Peak Hour		Peak Hour Warrant Met?
		LOS	Avg. Delay [1]	LOS	Avg. Delay	LOS	Avg. Delay	LOS	Avg. Delay	
Fairview Rd / John Smith Rd	WB Stop									
SB Left		A	9.6	A	8.4	A	9.7	A	8.4	Yes†
WB		C	17.3	B	12.1	C	18.8	B	12.4	
John Smith Rd / Best Rd	NB Stop									
NB		A	9.1	A	9.1	A	9.2	A	9.1	No
WB Left		A	7.6	A	7.6	A	7.6	A	7.6	
John Smith Rd / Landfill Access	SB Stop									
SB		A	8.7	A	8.7	A	8.7	A	8.7	No
EB Left		A	7.5	A	7.5	A	7.5	A	7.5	
John Smith Rd / Santa Ana Valley Rd	EB Stop									
NB Left		A	7.5	A	7.5	A	7.5	A	7.5	No
EB		A	8.8	A	8.8	A	8.8	A	8.8	
Airline Highway (SR 25) / Fairview Rd	MWS									
Overall		F	60.7	F	61.3	F	62.6	F	61.7	Yes
NB		C	18.9	C	23.6	C	19.0	C	23.6	
SB		E	35.9	F	75.0	E	37.3	F	76.6	
EB		E	45.3	F	72.8	E	47.2	F	72.9	
WB		F	94.1	E	36.4	F	96.6	E	36.6	
Airline Highway (SR 25) / Best Rd	NB / SB									
NB	Stop	D	28.4	C	18.5	D	28.8	C	18.6	No
SB		B	14.0	B	10.8	B	14.1	B	10.8	
EB Left		A	8.6	A	7.4	A	8.6	A	7.4	
WB Left		A	8.2	A	9.0	A	8.2	A	9.0	

Source: KD Anderson, 2012.
MWS – multi-way stop, † - meets volume section of Peak Hour Warrant, [1] Average Delay is shown in seconds

Table 38.
Cumulative Project Area Roadway Segment Levels of Service

Roadway	Location	Facility Classification	Standard		Cumulative Mid-Week Conditions		Cumulative + Project Mid-Week Conditions	
			LOS	Daily Volume Threshold	Daily Volume	LOS	Daily Volume	LOS
John Smith Rd	East of Fairview Rd	2-Lane Collector	C	9,000	1,986	A	2,028	A
	East of Best Rd	2-Lane Collector	C	9,000	707	A	757	A
	West of Santa Ana Valley Rd	2-Lane Collector	C	9,000	191	A	191	A
Airline Highway	West of Fairview Rd	4-Lane Arterial (w/ left-turn lane)	C	29,000	25,793	C	25,819	C

Source: KD Anderson, 2012

As discussed earlier, this Initial Study assumes that the northbound approach to the Fairview Road widens to two lanes at its intersection with Airline Highway to provide additional capacity and transition through the intersection under future conditions. Additionally, for this Initial Study, the Airline Highway / Fairview Road intersection was assumed to remain as a multi-way stop controlled intersection. As shown in **Table 39**, with the future installation of a traffic signal at the Airline Highway / Fairview Road – Ridgemark Drive intersection under the no project scenario, the LOS will improve to an LOS C condition in both a.m. peak hour (25.4 seconds) and p.m. peak hour (25.3 seconds). Table 39 also indicates that the installation of an acceleration lane for northbound traffic entering Airline Highway from Best Road under the future no project scenario will improve the LOS to an LOS C condition in the a.m. peak hour (18.3 seconds) and p.m. peak hour (16.5 seconds).

Table 39.

Peak Hour Intersection Levels of Service with Future Improvements

	Existing		**2035**		**2035 + Project**	
Location	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
1. Fairview Rd / John Smith Rd	A / 9.8	A / 9.5	C / 17.3	B / 12.1	C / 18.8	B / 12.4
2. John Smith Rd / Best Rd	A / 8.9	A / 8.8	A / 9.1	A / 9.1	A / 9.2	A / 9.1
3. John Smith Rd / Landfill Access	A / 8.6	A / 8.6	A / 8.7	A / 8.7	A / 8.7	A / 8.7
4. John Smith Rd / Santa Ana Valley Rd	A / 8.8	A / 8.8	A / 8.8	A / 8.8	A / 8.8	A / 8.8
5. Airline Highway (SR 25) / Fairview Rd	B / 10.3	B / 10.8	F / 60.7 **C / 25.4‡**	F / 61.3 **C / 25.3‡**	F / 62.6 **C / 25.5‡**	F / 61.7 **C / 25.3‡**
6. Airline Highway (SR 25) / Best Rd	B / 10.9	B / 11.4	D / 28.4 **C / 18.3◊**	C / 18.5 **C / 16.5◊**	D / 28.8 **C / 18.4◊**	C / 18.6 **C / 16.5◊**

Source: KD Anderson, 2012

LOS shown is average delay for multi-way stop intersection or signalized intersection; or worst approach delay for minor-leg stop controlled intersection
Bold denotes LOS with future roadway improvements
‡ - With addition of traffic signal
◊ - With addition of acceleration lane for eastbound to northbound movement

As indicated in **Table 39**, the Airline Highway / Fairview Road – Ridgemark Drive intersection would operate at a LOS F without the proposed project under future conditions and the change in delay between the future no project and future plus project conditions is 1.9 second during the a.m. peak hour and 0.4 second during the p.m. peak hour. Because the proposed project would not result in a worsened LOS condition at this intersection and would result in a delay of less than 5 seconds, the proposed project’s impact at this intersection is considered less than significant.

Additionally, the northbound approach of the Airline Highway / Best Road intersection will continue to operate at an LOS D without the proposed project under future conditions and the change in delay between the future no project and future plus project conditions is 0.4 second during the a.m. peak hour and 0.1 second during the p.m. peak hour. Because the proposed project would not result in a worsened LOS condition at this intersection and would result in a delay of less than 5 seconds, the proposed project's impact at this intersection is considered less than significant.

The proposed project's contribution to LOS operations at project area intersections and roadway segments under future conditions are considered less than significant.

c) *Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?*

No Impact. Although the project would increase the height of the landfill by a maximum of 65 feet, the project area is not located within a safety zone as identified in the Comprehensive Land Use Plan, Hollister Municipal Airport (2001).

d) *Would the project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?*

Less Than Significant. The proposed project includes the vertical and lateral expansion of the JSRL. The proposed project does not include any roadway design modifications; therefore, the proposed project would not expose motorists, pedestrians, or bicyclists to sharp curves or dangerous intersections.

The lateral expansion would move landfilling operations to the southeast of the existing landfill footprint; however, this impact would not result in the introduction of incompatible uses and is therefore considered less than significant.

e) *Would the project result in inadequate emergency access?*

Less Than Significant. The proposed project and its surroundings would have adequate emergency access at all times during construction and operation. This impact is considered less than significant.

f) *Would the project result in inadequate parking capacity?*

No Impact. It is anticipated that parking would be provided onsite for construction workers and site personnel. Therefore, impacts resulting from inadequate parking are not anticipated.

g) *Would the project conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?*

No Impact. No bus, bicycle, or pedestrian facilities are present within the project vicinity. The proposed project would not conflict with adopted policies, plans, or programs supporting alternative transportation.

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4.16 Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?			✓	
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			✓	
c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			✓	
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				✓
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			✓	
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				✓
g) Comply with federal, state, and local statutes and regulations related to solid waste?			✓	

4.16.1 Environmental Setting

Water Supply

Non-potable water is obtained from a fire hydrant within the Sunnyslope District and trucked to the JSRL. The non-potable water is stored in two 2,500-gallon water tanks on the western side of the JSRL property (**Figure 2**). Bottled water is utilized for all drinking purposes at JSRL and is available at the landfill office/scalehouse.

Electrical Supply

Pacific Gas & Electric (PG&E) provides electrical supply to the project vicinity. Aboveground, pole-mounted electrical lines are currently located south of John Smith Road along the northern boundary of the project site. In July 2010, PG&E completed a 3-phase power system upgrade to the JSRL and the parcel south of John Smith Road.

Wastewater

Wastewater generated at the JSRL (from the scalehouse, leachate, condensate, and the extraction well water) is routed to the sewer system for treatment at the City of Hollister publicly owned treatment works (POTW). The wastewater discharge permit was issued by the City of Hollister Department of Public Works in 1992.

4.16.2 Regulatory Setting

San Benito County General Plan

The San Benito County General Plan contains the following policies addressing utilities and public services of the County.

Open Space and Conservation Element

Policy 34 Evidence water quality and quantity for development. Approval of new developments shall not be allowed without evidence of adequate water quality and quantity.

Policy 40 Development in State Responsibility Areas. All new development shall be required to conform to the standards and recommendations for applicable fire protection agency to an acceptable fire protection risk level (CDF, County, incorporated city).

4.16.3 Methods and Significance Criteria

Potential effects on utilities were determined through identifying existing utilities and considering the potential for operational interruptions as a result of proposed project.

Impacts on utilities are considered significant if the project would:

- Result in exceedance of wastewater treatment requirements or require expansion of and existing or construction of a new wastewater treatment facility;
- Result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed;

- Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments;
- Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Comply with federal, state and local statutes and regulations related to solid waste.

4.16.4 Potential Environmental Effects

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

Less Than Significant. No wastewater facilities are proposed as part of the proposed landfill expansion project. The proposed project would result in an increase to the volume of wastewater discharge from leachate and condensate from increased tonnage received. The increase in wastewater generated by the proposed project would be an approximate increase of 50 percent over existing conditions. The City of Hollister has indicated that the increase of flow from the expanded JSRL would be accommodated by the City's sanitary sewer capacity (City of Hollister, 2012). This impact is considered less than significant.

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

Less Than Significant. Please refer to response a) above. The increase in wastewater generated by the proposed project would be an approximate increase of 50 percent is considered less than significant. Furthermore, the project would not require the use of water beyond that already available in the area for emergency purposes. The project would have no impact on water or wastewater treatment facilities.

c) *Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?*

Less Than Significant. The calculations conducted by Lawrence & Associates (2011) indicate that the existing basins have adequate capacity to detain proposed stormwater to a similar level as they do now. This impact is considered less than significant.

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

No Impact. The proposed project would continue to obtain water from a fire hydrant within the Sunnyslope County Water District. The non-potable water would continue to be trucked to the JSRL and stored in two 2,500-gallon water tanks on the western side of the JSRL property (**Figure 2**) or applied directly to dry soil/gravel for dust control. Bottled water for drinking purposes at the landfill office/scalehouse would continue to be delivered to the site. No additional water supplies are required by the proposed project. Therefore, the proposed project would have no impact on water supplies.

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

Less Than Significant. Sanitary wastewater flows to the sanitary sewer (POTW). Fluid extracted from groundwater and leachate wells is ultimately discharged to a sanitary sewer line originally constructed solely for this purpose. The proposed project would result in an approximate 50 percent increase in wastewater generation; however, the POTW would continue to serve the project. (See Impact Discussion 4.17.4(a) above.)

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

No Impact. The proposed project is a landfill expansion project and would increase the capacity of the existing landfill and extend the life of the landfill. Therefore, the project would result in a significant beneficial impact.

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

Less Than Significant. The proposed project would conform to all applicable state and federal solid waste regulations; therefore, the impact would be considered less than significant.

4.17 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			✓	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		✓		
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			✓	

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

Less Than Significant. As discussed throughout this checklist, the project is not expected to degrade the quality of the environment with the implementation of the mitigation measures identified in this Initial Study. Furthermore, the project is not expected to substantially reduce the habitat or affect populations of any fish or wildlife species (see **Section 4.4**) or eliminate important examples of the major period of California history or prehistory (see **Section 4.5**).

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

Less than Significant with Mitigation Incorporation. The following sections discuss the potential for cumulative impacts associated with each resource checklist category in the preceding sections.

<u>Aesthetics</u>

Implementation of the proposed project is not expected to contribute to cumulative visual resource impacts associated with the expansion of the John Smith Road Landfill. Because the project area is generally blocked by elevated topography, the proposed project would not significantly alter the existing visual character of the project area, would not result in the removal or obstruction of an identified scenic resource, and is not visible from a State scenic highway. At project closure, the proposed project would be revegetated so as to conform with the surrounding environment. Thus, a less than significant impact to aesthetics is anticipated under cumulative conditions.

<u>Agricultural Resources</u>

No Farmland is present within the project area, and the project would not result in conversion of Farmland to a non-agricultural use. Therefore, the proposed project would not impact agricultural resources under cumulative conditions.

<u>Air Quality</u>

Implementation of the proposed project is not expected to contribute to a cumulative air quality impact. As shown in **Table 12**, implementation of the proposed project would result in a reduction in the net vehicle miles travelled when compared to the No Project scenario, resulting in fewer vehicle-related emissions. Equipment operations under the proposed project would be comparable to existing conditions, as a substantial increase in the size of the fleet is not projected by the operator. Therefore, a less than significant impact to air quality is anticipated under cumulative conditions.

<u>Biological Resources</u>

Cumulative impacts related to biological resources could occur when the proposed project caused a substantial aggregation of impacts with regards to sensitive species and/or habitat, wetlands, established wildlife corridors, or biological policies. Development of the proposed project has the potential to result in impacts to special-status species and their habitat, if subsequently found present on the site. Implementation of Mitigation Measures 1 through 7 would ensure less than significant impacts to CTS, CRLF, SJKF, Western burrowing owl, special-status reptile and amphibian species, San Joaquin whipsnake, and American badger, respectively. Since the project level impacts associated with biological resources would be reduced to less than significant, potential cumulative impacts to biological resources would be reduced to less than significant as well. Therefore, aggregated impacts to biological resources would not be cumulatively considerable with implementation of the mitigation required for the proposed project.

Cultural Resources

No cultural resources have been identified within the project site. Implementation of the proposed project would not impact any known historical, archaeological, paleontological, or cultural resources in the project area. If previously undiscovered cultural resources are discovered during construction activities, the proposed project would comply with the provisions of the California Health and Safety Code Section 7050.5 and California Public Resources Code Section 5097.94 et seq., regarding the discovery and disturbance of human remains should any human remains be discovered during project construction. The project level impacts to cultural resources associated with the proposed project would be mitigated to a less-than-significant level. Therefore, the project would not contribute to potential cumulative impacts associated with the destruction of undiscovered cultural resources.

Geology and Soils

Project-related impacts on geology and soils would be site-specific and implementation of the proposed project would not contribute to seismic hazards or water quality impacts associated with soil erosion. Cumulative water quality impacts associated with soil erosion by the proposed project would be less than significant through compliance with regulatory requirements including: the San Benito County Code, the San Benito County Grading Ordinance, and implementation of BMPs for erosion control. Therefore, the proposed project is anticipated to have a less than significant impact on cumulative geophysical conditions in the region.

Greenhouse Gas Emissions

Landfilling activities have the potential to generate landfill gas (LFG), which is comprised of CO_2 and CH_4. These gases are GHG, associated with global climate change. The impact of these gases are global, rather than local, in scale. The proposed project would affect where the LFG are generated, but would not affect whether these gases are generated. Because the gases affect climate on a global scale, the location of their generation is less important than the amount of gas generated. Because the proposed project would not substantially affect the amount of LFG generated, the cumulative impact of the proposed project on LFG emissions is considered less-than-significant.

Hazards and Hazardous Materials

Cumulative impacts related to hazards and hazardous materials could occur if contaminated soils are unearthed and not properly disposed of at the proposed project site and in association with past, present and reasonably foreseeable, probable future projects. Accidental spills and leaks are unplanned occurrences, and it would be speculative to predict the occurrences of such events. The likelihood of such events occurring in close proximity to each other at the same time is very small; therefore, such events cannot be considered cumulatively. The proposed project would not result in potentially significant impacts associated with the exposure of workers and nearby residences to hazardous materials; the potential release of hazardous materials during construction and operation of the proposed project; or fire risk. Therefore, the proposed project would result in less-than-significant cumulative impacts associated with hazards and hazardous materials.

Hydrology and Water Quality

Cumulative impacts related to hydrology and water quality could occur if the proposed project caused a substantial aggregation of impacts with regards to violation of water quality standards from regular discharges or polluted stormwater runoff, increased soil erosion, groundwater depletion or interference with groundwater recharge, increased runoff, or flooding due to construction in flood hazard areas or failure of a dam or levee.

The proposed project would have a less than significant project-level impact on surface water or groundwater quality because it would be required to comply with the mandated monitoring requirements.

The proposed project would be located outside of flood hazard areas (floodplains or floodways). The calculations conducted by Lawrence & Associates (2011) indicate that the existing basins have adequate capacity to detain proposed stormwater to a similar level as they do now. Therefore, the proposed project would result in pre-project conditions with respect to flooding due to redirection of floodwaters, and no people or structures would be exposed to a significant risk of loss, injury or death due to flooding. The potential for a substantial aggregation of impacts to surface water or groundwater quality, groundwater recharge, or flooding would be low and cumulative impacts would be less than significant.

Land Use and Planning

The proposed project is consistent with relevant plans, policies and regulations, would be required to comply with all applicable regulations to ensure consistency and compatibility with surrounding land uses, and would not result in any significant land use impacts. Therefore, the proposed project would not combine with other past, present and reasonably foreseeable probable future projects in the vicinity to result in a cumulative impact on any existing nearby land uses, such as existing residential and small ranch uses, with regard to land use compatibilities. Therefore, cumulative impacts with regard to land use are anticipated to be less than significant.

Mineral Resources

The proposed project would not result in impacts to mineral resources. Therefore, the project is expected to have no impact on mineral resources under cumulative conditions.

Noise

The cumulative context for noise impacts associated with the proposed project consists of the existing and future noise sources that could affect the project or surrounding uses. Noise generated by construction would be temporary, and would not add to the permanent noise environment or be considered as part of the cumulative context. The total noise impact of the proposed project would be fairly small and would not be a substantial increase to the existing and future noise environment. Thus, the proposed project would result in a less than significant cumulative impact.

Traffic-Related Noise

Cumulative noise impacts would occur primarily as a result of increased traffic, and in particular truck traffic on local roadways due to the proposed project and other projects within the area. Table 31 above shows cumulative traffic noise levels with and without the proposed project. As shown, the proposed project would not contribute significantly to the overall traffic noise levels, and the contribution would be less than a 1 dBA L_{dn}.

Non-Traffic Noise

The proposed project does include additional activities and equipment noise sources. In review of the existing background noise levels, it is not expected that the overall noise environment from the project would result in more than a 3 dBA increase provided that activities are confined to the daytime hours. One project which is also proposed in the vicinity of the JSRL is the San Benito County Resource Recovery Park which would be located directly across John Smith Road from the JSRL. Based upon the noise study conducted for the San Benito County Resource Recovery Park in 2010, the cumulative noise increase would generally occur to the south. However, the overall cumulative increase in noise from the JSRL expansion is not expected to result in more than a 3 dBA increase.

Population and Housing

As described in this Initial Study, the proposed project does not involve new construction of housing or removal of existing housing. The proposed project is anticipated to have no impact on cumulative population and housing conditions in the region.

Public Services

The project would not result in a significant effect on public services and is not expected to contribute to cumulative public service impacts.

Recreation

The project would not directly or cumulatively affect the use of parks or other recreation facilities.

Transportation/Traffic

As discussed in Item 4.16.3(b), the Airline Highway / Fairview Road – Ridgemark Drive intersection would operate at a LOS F without the proposed project under future conditions and the change in delay between the future no project and future plus project conditions is 1.9 second during the a.m. peak hour and 0.4 second during the p.m. peak hour. The proposed project would not contribute to a worsened LOS condition at this intersection and would result in a delay of less than 5 seconds; therefore, the proposed project's cumulative impact at this intersection is considered less than significant.

Additionally, the northbound approach of the Airline Highway / Best Road intersection will continue to operate at an LOS D without the proposed project under future conditions and the change in delay between the future no project and future plus project conditions is 0.4 second during the a.m. peak hour and 0.1 second during the p.m. peak hour. The proposed project would not result in a worsened LOS condition at this intersection and would result in a delay of less than 5 seconds; therefore, the proposed project's cumulative impact at this intersection is considered less than significant.

Utilities and Service Systems

The proposed project would not require an expansion of or relocation of existing utility services that serve the project area. Cumulative impacts to utilities associated with the proposed project would be considered less than significant.

c) *Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?*

Less than Significant. The project is intended to provide additional landfill capacity. The project would not result in substantial direct or indirect adverse effects from noise, either during project operation or construction, nor would it result in impacts to air quality, water quality, or utilities and public services. Therefore, the project would have a less than significant impact on human beings.

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Appendix A

Solid Waste Facility Permit 35-AA-0001

SOLID WASTE FACILITY PERMIT

Facility Number: **35-AA-0001**

1. Name and Street Address of Facility:	2. Name and Mailing Address of Operator:	3. Name and Mailing Address of Owner:
John Smith Road Landfill 2650 John Smith Road Hollister, CA 95023	San Benito County Integrated Waste Mgmt 3220 Southside Road Hollister, CA 95023	San Benito County Integrated Waste Mgmt 3220 Southside Road Hollister, CA 95023

4. Specifications:

a. Permitted Operations:
- ☒ Solid Waste Disposal Site
- ☐ Transfer/Processing Facility (MRF)
- ☐ Composting Facility (Green Material)
- ☐ Transformation Facility
- ☐ Other: ____

b. Permitted Hours of Operation: (Receipt of Refuse/Waste) As described in the approved Joint Technical Document and subsequent RFI amendments.

c. Permitted Maximum Tonnage: 500 Tons per Day (See Condition 17.d.)

d. Permitted Traffic Volume: 600 Vehicles per Day

C21-A

e. Key Design Parameters (Detailed parameters are shown on site plans bearing EA and CIWMB validations):

	Total	Disposal	Transfer/Processing	Composting	Transformation
Permitted Area (in acres)	57	44			
Design Capacity (cu. yds)		4,625,827			
Max. Elevation (Ft. MSL)		855			
Max. Depth (Ft. MSL)		670			
Estimated Closure Year		2024			

Upon a significant change in design or operation from that described herein, this permit is subject to revocation or suspension. The attached permit findings and conditions are integral parts of this permit and supersede the conditions of any previously issued solid waste facility permit.

5. Approval:	6. Enforcement Agency Name and Address:
Elizabeth Falade, MD Approving Officer Signature	San Benito County Health Department Environmental Health Division 1111 San Felipe Road, Suite 101 Hollister, CA 95023
7. Date Received by CIWMB: December 9, 2005	**8. CIWMB Concurrence Date:** January 17, 2006

9. Permit Issued Date:	10. Permit Review Due Date:	11. Owner/Operator Transfer Date:
January 25, 2006	December 15, 2015	

12. Legal Description of Facility:

The legal description of this facility is contained in appendix A of the Report of Disposal Site Information dated March 2001.

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SOLID WASTE FACILITY PERMIT

Facility Number:

35-AA-0001

13. Findings:

a. This permit is consistent with the San Benito County Integrated Waste Management Plan, which was approved by the CIWMB on 3/1996 (Page 3-4/Siting Element Page 3-8). The location of the facility is identified in the Countywide Siting Element, pursuant to Public Resources Code (PRC), Section 50001(a).

b. This permit is consistent with the standards adopted by the CIWMB, pursuant to PRC 44010.

c. The design and operation of the facility is consistent with the State Minimum Standards for Solid Waste Handling and Disposal as determined by the enforcement agency, pursuant to PRC 44009.

d. The California Department of Forestry/ Fire Department has determined that the facility is in conformance with applicable fire standards, pursuant to PRC, 44151.

e. A Mitigated Negative Declaration was filed with the State Clearinghouse (SCH #1991083121) and certified by the San Benito County Division of Environmental Health on 11/2/2001. The Mitigated Negative Declaration describes and supports the design and operation, which will be authorized by the issuance of this permit. A Notice of Determination was filed with the State Clearinghouse on 12/12/2001.

f. The San Benito County Planning Department has determined on 9/12/2005 that a conditional use permit is not required.

g. The previous permit revision allowed for the installation of a permanent household hazardous waste facility and amended the calculation of average tonnage from a monthly to an annual basis.

h. The sum total of disposed and diverted tons for purposes of environmental compliance shall not exceed 500 tons per day (See condition 17.d). In addition, the daily average of 250 tons and the daily peak of 500 tons per day have been modified to reflect only a 500 daily ton limit and a 600 vehicle trip limit per day as outlined in the Mitigated Negative Declaration. In addition, an outbound scale has been installed to supplement site operations.

i. This permit supercedes the previous permit for facility 35-AA-0001, issued January 25, 2005.

14. Prohibitions:

The permittee is prohibited from accepting the following wastes:

Hazardous, radioactive, medical (as defined in Chapter 6.1, Division 20 of the Health and Safety Code), liquid, designated, or other wastes requiring special treatment or handling, except as identified in the Report of Facility Information and approved amendments thereto and as approved by the enforcement agency and other federal, state, and local agencies.

15. The following documents describe and/or restrict the operation of this facility:

	Date		Date
Report of Disposal Site Information Amendments	3/2001 8/2003, 1/2005, and 10/2005	Preliminary Closure and Postclosure Maintenance Plan	8/31/2006 In Review
Waste Discharge Requirements Order No. 2002-0001	2/2/2002	Closure Financial Assurance Documentation	9/9/2004
APCD Permit to Operate #11553A	3/23/2005	Land Use and/or Conditional Use Permit	N/A
Mitigated Negative Declaration (SCH #1991083121)	11/2/2001	Operating Liability Certification	5/17/04 - 5/17/07

SOLID WASTE FACILITY PERMIT

Facility Number:

35-AA-0001

16. Self Monitoring:

The owner/operator shall submit the results of all self monitoring programs to the Enforcement Agency within 30 days of the end of the reporting period

Program	Reporting Frequency
a. The types and quantities (in tons) of waste, including separated or commingled recyclables, entering the facility per day.	Monthly –See 17 (d & i)
b. The number and types of vehicles using the facility per day.	Monthly
c. Results of the hazardous waste load checking program, including the quantities and types of hazardous wastes, medical wastes or otherwise prohibited wastes found in the waste stream and the disposition of these materials.	Quarterly
d. Copies of all written complaints regarding this facility and the operator's actions taken to resolve these complaints.	Quarterly
e. Results of the landfill gas monitoring program.	Quarterly
f. Wet weather preparedness report/winter operations plan.	Annual – due by October 1
g. Fill sequencing plan for the forthcoming year.	Annually
h. Remaining site capacity.	Annually
i. Number of, and duties of, personnel on site each day.	Upon Request
j. Record the time of that the first load of waste is received each day.	Upon Request
k. Copies of green and/or wood waste and scrap metal collection receipts (stored at scale house)	Upon Request
l. Elevation of highestdisposal footprint,	Annually

SOLID WASTE FACILITY PERMIT

Facility Number:

35-AA-0001

17. Enforcement Agency (EA) Conditions:

a. The operator shall comply with all State Minimum Standards for solid waste handling and disposal as specified in Title 27, California Code of Regulations.

b. The operator shall maintain a log of special/unusual occurrences. This log shall include, but is not limited to, fires, explosions, the discharge and disposition of hazardous or unpermitted wastes, and significant injuries, accidents or property damage. Each log entry shall be accompanied by a summary of any actions taken by the operator to mitigate the occurrence. The log shall be available to site personnel and the EA at all times.

c. Additional information concerning the design and operation of the facility shall be furnished upon request and within the time frame specified by the EA.

d. The sum total of 'diverted' material tonnage and 'disposal' material tonnage shall in no case exceed a maximum tonnage of 500 tons per day nor cause exceedance of 600 vehicle trips per day without a revision of this permit.

e. This permit is subject to review by the EA and may be suspended, revoked, or revised at any time for sufficient cause.

f. The EA reserves the right to suspend or modify waste receiving and handling operations when deemed necessary due to an emergency, a potential health hazard, or the creation of a public nuisance.

g. Any change that would cause the design or operation of the facility not to conform to the terms and conditions of this permit is prohibited. Such a change may be considered a significant change, requiring a permit revision. In no case shall the operator implement any change without first submitting a written notice of the proposed change, in the form of an RFI amendment, to the EA at least 180 days in advance of the change.

h. A copy of this permit shall be maintained at the facility.

i. A report detailing the amount in tons of all material entering the site shall be provided to the LEA by the 10th day of the following month for which data was collected. The report shall also include tonnage accepted to date during the permit year.

j. Waste shall only be accepted at the facility during the daylight hours, meaning that portion of the day between sunrise and sunset.

k. Green and wood waste shall be removed from the facility in such a way as to not cause a nuisance as determined by the LEA, but in no case less than 10 days after receipt. The operator shall maintain green waste collection receipts at the scale house for review by the LEA.

l. Separated scrap metal shall be properly contained in bins to prevent vector harborage.

m. Items containing cathodic ray tubes shall be stored in an impervious container.

n. The owner/operator shall comply with all mitigation measures included in the Initial Study/Mitigated Negative Declaration John Smith Road Landfill San Benito County, California dated July 2001 and in the accompanying Mitigation Monitoring Program.

o. The operator may use alternative daily covers as approved by the LEA through application for an RFI amendment. The facility is currently approved to use synthetic tarps as ADC.

p. The accumulation of green and wood waste shall not interfere with the operation of the facility.

q. The owner/operator shall obtain written approval and/or all necessary permits from all pertinent agencies prior to excavating soil from the off-site borrow area.

r. Any owner or operator of this facility who plans to encumber, sell, transfer, or convey the ownership or operations of this facility shall notify the enforcement agency and the CIWMB at least forty-five days prior to the anticipated date of transfer.

Appendix B

Air Quality Technical Data

TECHNICAL APPENDICES

FOR THE
AIR QUALITY TECHNICAL REPORT

for the
John Smith Road Landfill Expansion Project

The following emissions model output files are presented in these technical appendices:

LandGEM Model Output File
Without John Smith Road Landfill Expansion Project

LandGEM Model Output File
With John Smith Road Landfill Expansion Project

CalEEMod Model Output File
On-Site Landfill Equipment
Annual Emissions

CalEEMod Model Output File
On-Site Landfill Equipment
Daily Emissions

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
Without John Smith Road Landfill Expansion Project
San Benito County to Marina and Gonzales
Annual Emissions

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
Without John Smith Road Landfill Expansion Project
San Benito County to Marina and Gonzales
Daily Emissions

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
Without John Smith Road Landfill Expansion Project
San Francisco Bay Area to Altamont
Annual Emissions

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
Without John Smith Road Landfill Expansion Project
San Francisco Bay Area to Altamont
Daily Emissions

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
With John Smith Road Landfill Expansion Project
San Benito County to John Smith Road Landfill
Annual Emissions

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
With John Smith Road Landfill Expansion Project
San Benito County to John Smith Road Landfill
Daily Emissions

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
With John Smith Road Landfill Expansion Project
San Francisco Bay Area to John Smith Road Landfill
Annual Emissions

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
With John Smith Road Landfill Expansion Project
San Francisco Bay Area to John Smith Road Landfill
Daily Emissions

LandGEM Model Output File
Without John Smith Road Landfill Expansion Project

Summary Report

Landfill Name or Identifier: John Smith Road Landfill - No Expansion Project

Date: Thursday, March 08, 2012

Description/Comments:

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH4} = annual methane generation in the year of the calculation *(m^3/year)*

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate (*$year^{-1}$*)

L_o = potential methane generation capacity (*m^3/Mg*)

M_i = mass of waste accepted in the i^{th} year (*Mg*)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	**1971**	
Landfill Closure Year (with 80-year limit)	**2030**	
Actual Closure Year (without limit)	***2030***	
Have Model Calculate Closure Year?	**No**	
Waste Design Capacity		*megagrams*

MODEL PARAMETERS

Methane Generation Rate, k	**0.050**	*$year^{-1}$*
Potential Methane Generation Capacity, L_o	**170**	*m^3/Mg*
NMOC Concentration	**4,000**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	**Methane**
Gas / Pollutant #2:	**Carbon dioxide**
Gas / Pollutant #3:	**NMOC**
Gas / Pollutant #4:	**Total landfill gas**

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
1971	22,065	24,272	0	0
1972	22,065	24,272	22,065	24,272
1973	22,065	24,272	44,131	48,544
1974	11,033	12,136	66,196	72,816
1975	11,033	12,136	77,229	84,952
1976	11,033	12,136	88,262	97,088
1977	11,033	12,136	99,295	109,224
1978	11,033	12,136	110,327	121,360
1979	11,033	12,136	121,360	133,496
1980	11,033	12,136	132,393	145,632
1981	11,033	12,136	143,425	157,768
1982	11,033	12,136	154,458	169,904
1983	11,033	12,136	165,491	182,040
1984	11,033	12,136	176,524	194,176
1985	11,033	12,136	187,556	206,312
1986	11,033	12,136	198,589	218,448
1987	11,033	12,136	209,622	230,584
1988	11,033	12,136	220,655	242,720
1989	11,033	12,136	231,687	254,856
1990	21,158	23,274	242,720	266,992
1991	18,645	20,509	263,878	290,266
1992	20,116	22,128	282,523	310,775
1993	21,495	23,644	302,639	332,903
1994	26,332	28,965	324,134	356,547
1995	29,575	32,533	350,465	385,512
1996	49,182	54,100	380,041	418,045
1997	79,795	87,774	429,223	472,145
1998	86,510	95,161	509,017	559,919
1999	80,772	88,849	595,527	655,080
2000	62,162	68,379	676,299	743,929
2001	59,991	65,990	738,461	812,308
2002	52,877	58,165	798,452	878,298
2003	54,275	59,702	851,330	936,463
2004	51,071	56,178	905,604	996,165
2005	58,297	64,127	956,675	1,052,343
2006	81,074	89,181	1,014,972	1,116,470
2007	78,609	86,470	1,096,046	1,205,651
2008	87,205	95,925	1,174,655	1,292,121
2009	81,461	89,607	1,261,860	1,388,046
2010	83,527	91,880	1,343,321	1,477,653

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2011	82,045	90,250	1,426,848	1,569,533
2012	82,045	90,250	1,508,893	1,659,783
2013	82,045	90,250	1,590,939	1,750,033
2014	82,045	90,250	1,672,984	1,840,283
2015	82,045	90,250	1,755,030	1,930,533
2016	82,045	90,250	1,837,075	2,020,783
2017	82,045	90,250	1,919,121	2,111,033
2018	82,045	90,250	2,001,166	2,201,283
2019	82,045	90,250	2,083,211	2,291,533
2020	82,045	90,250	2,165,257	2,381,783
2021	82,045	90,250	2,247,302	2,472,033
2022	82,045	90,250	2,329,348	2,562,283
2023	82,045	90,250	2,411,393	2,652,533
2024	82,045	90,250	2,493,439	2,742,783
2025	82,045	90,250	2,575,484	2,833,033
2026	82,045	90,250	2,657,530	2,923,283
2027	82,045	90,250	2,739,575	3,013,533
2028	82,045	90,250	2,821,621	3,103,783
2029	82,045	90,250	2,903,666	3,194,033
2030	82,045	90,250	2,985,711	3,284,283
2031	0	0	3,067,757	3,374,533
2032	0	0	3,067,757	3,374,533
2033	0	0	3,067,757	3,374,533
2034	0	0	3,067,757	3,374,533
2035	0	0	3,067,757	3,374,533
2036	0	0	3,067,757	3,374,533
2037	0	0	3,067,757	3,374,533
2038	0	0	3,067,757	3,374,533
2039	0	0	3,067,757	3,374,533
2040	0	0	3,067,757	3,374,533
2041	0	0	3,067,757	3,374,533
2042	0	0	3,067,757	3,374,533
2043	0	0	3,067,757	3,374,533
2044	0	0	3,067,757	3,374,533
2045	0	0	3,067,757	3,374,533
2046	0	0	3,067,757	3,374,533
2047	0	0	3,067,757	3,374,533
2048	0	0	3,067,757	3,374,533
2049	0	0	3,067,757	3,374,533
2050	0	0	3,067,757	3,374,533

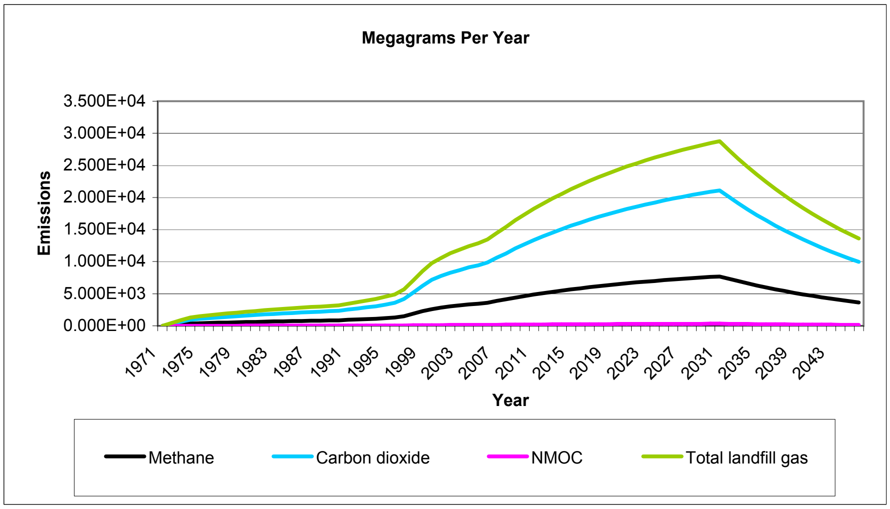
Pollutant Parameters

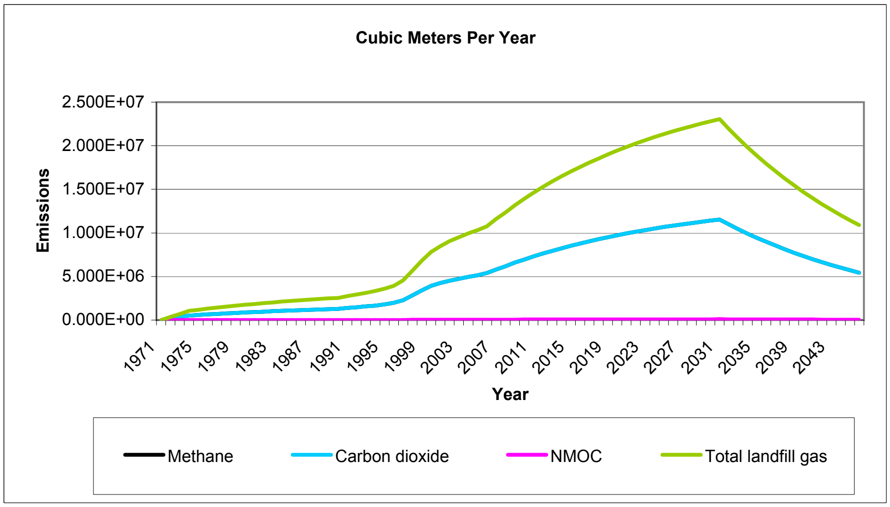
	Gas / Pollutant Default Parameters:			User-specified Pollutant Parameters:	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,2,2-Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

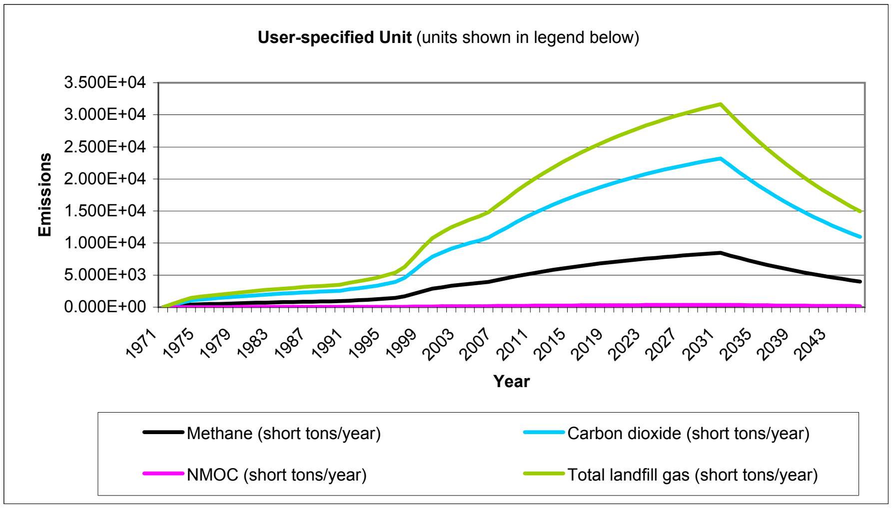
Pollutant Parameters (Continued)

	Gas / Pollutant Default Parameters:			User-specified Pollutant Parameters:	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Pollutants	Ethyl mercaptan (ethanethiol) - VOC	2.3	62.13		
	Ethylbenzene - HAP/VOC	4.6	106.16		
	Ethylene dibromide - HAP/VOC	1.0E-03	187.88		
	Fluorotrichloromethane - VOC	0.76	137.38		
	Hexane - HAP/VOC	6.6	86.18		
	Hydrogen sulfide	36	34.08		
	Mercury (total) - HAP	2.9E-04	200.61		
	Methyl ethyl ketone - HAP/VOC	7.1	72.11		
	Methyl isobutyl ketone - HAP/VOC	1.9	100.16		
	Methyl mercaptan - VOC	2.5	48.11		
	Pentane - VOC	3.3	72.15		
	Perchloroethylene (tetrachloroethylene) - HAP	3.7	165.83		
	Propane - VOC	11	44.09		
	t-1,2-Dichloroethene - VOC	2.8	96.94		
	Toluene - No or Unknown Co-disposal - HAP/VOC	39	92.13		
	Toluene - Co-disposal - HAP/VOC	170	92.13		
	Trichloroethylene (trichloroethene) - HAP/VOC	2.8	131.40		
	Vinyl chloride - HAP/VOC	7.3	62.50		
	Xylenes - HAP/VOC	12	106.16		

Graphs


Megagrams Per Year
3.500E+04
3.000E+04
2.500E+04
2.000E+04
1.500E+04
1.000E+04
5.000E+03
0.000E+00
Emissions
1971 1975 1979 1983 1987 1991 1995 1999 2003 2007 2011 2015 2019 2023 2027 2031 2035 2039 2043
Year
Methane
Carbon dioxide
NMOC
Total landfill gas


Cubic Meters Per Year
2.500E+07
2.000E+07
1.500E+07
1.000E+07
5.000E+06
0.000E+00
Emissions
1971 1975 1979 1983 1987 1991 1995 1999 2003 2007 2011 2015 2019 2023 2027 2031 2035 2039 2043
Year
Methane
Carbon dioxide
NMOC
Total landfill gas


User-specified Unit (units shown in legend below)
3.500E+04
3.000E+04
2.500E+04
2.000E+04
1.500E+04
1.000E+04
5.000E+03
0.000E+00
Emissions
1971 1975 1979 1983 1987 1991 1995 1999 2003 2007 2011 2015 2019 2023 2027 2031 2035 2039 2043
Year
Methane (short tons/year)
Carbon dioxide (short tons/year)
NMOC (short tons/year)
Total landfill gas (short tons/year)

Results

Year	Methane			Carbon dioxide		
	(Mg/year)	*(m^3/year)*	*(short tons/year)*	*(Mg/year)*	*(m^3/year)*	*(short tons/year)*
1971	0	0	0	0	0	0
1972	1.224E+02	1.834E+05	1.346E+02	3.357E+02	1.834E+05	3.693E+02
1973	2.387E+02	3.579E+05	2.626E+02	6.551E+02	3.579E+05	7.206E+02
1974	3.495E+02	5.238E+05	3.844E+02	9.588E+02	5.238E+05	1.055E+03
1975	3.936E+02	5.900E+05	4.330E+02	1.080E+03	5.900E+05	1.188E+03
1976	4.356E+02	6.529E+05	4.791E+02	1.195E+03	6.529E+05	1.315E+03
1977	4.755E+02	7.128E+05	5.231E+02	1.305E+03	7.128E+05	1.435E+03
1978	5.135E+02	7.697E+05	5.648E+02	1.409E+03	7.697E+05	1.550E+03
1979	5.496E+02	8.239E+05	6.046E+02	1.508E+03	8.239E+05	1.659E+03
1980	5.840E+02	8.754E+05	6.424E+02	1.602E+03	8.754E+05	1.763E+03
1981	6.167E+02	9.244E+05	6.784E+02	1.692E+03	9.244E+05	1.861E+03
1982	6.478E+02	9.710E+05	7.126E+02	1.777E+03	9.710E+05	1.955E+03
1983	6.774E+02	1.015E+06	7.451E+02	1.859E+03	1.015E+06	2.044E+03
1984	7.055E+02	1.058E+06	7.761E+02	1.936E+03	1.058E+06	2.129E+03
1985	7.323E+02	1.098E+06	8.055E+02	2.009E+03	1.098E+06	2.210E+03
1986	7.578E+02	1.136E+06	8.335E+02	2.079E+03	1.136E+06	2.287E+03
1987	7.820E+02	1.172E+06	8.602E+02	2.146E+03	1.172E+06	2.360E+03
1988	8.050E+02	1.207E+06	8.855E+02	2.209E+03	1.207E+06	2.430E+03
1989	8.269E+02	1.240E+06	9.096E+02	2.269E+03	1.240E+06	2.496E+03
1990	8.478E+02	1.271E+06	9.326E+02	2.326E+03	1.271E+06	2.559E+03
1991	9.238E+02	1.385E+06	1.016E+03	2.535E+03	1.385E+06	2.788E+03
1992	9.821E+02	1.472E+06	1.080E+03	2.695E+03	1.472E+06	2.964E+03
1993	1.046E+03	1.567E+06	1.150E+03	2.869E+03	1.567E+06	3.156E+03
1994	1.114E+03	1.670E+06	1.225E+03	3.056E+03	1.670E+06	3.362E+03
1995	1.206E+03	1.807E+06	1.326E+03	3.308E+03	1.807E+06	3.639E+03
1996	1.311E+03	1.965E+06	1.442E+03	3.597E+03	1.965E+06	3.956E+03
1997	1.520E+03	2.278E+06	1.672E+03	4.169E+03	2.278E+06	4.586E+03
1998	1.888E+03	2.830E+06	2.077E+03	5.180E+03	2.830E+06	5.698E+03
1999	2.276E+03	3.411E+06	2.503E+03	6.244E+03	3.411E+06	6.868E+03
2000	2.613E+03	3.916E+06	2.874E+03	7.168E+03	3.916E+06	7.885E+03
2001	2.830E+03	4.242E+06	3.113E+03	7.764E+03	4.242E+06	8.541E+03
2002	3.024E+03	4.533E+06	3.327E+03	8.298E+03	4.533E+06	9.128E+03
2003	3.170E+03	4.752E+06	3.487E+03	8.698E+03	4.752E+06	9.568E+03
2004	3.317E+03	4.971E+06	3.648E+03	9.100E+03	4.971E+06	1.001E+04
2005	3.438E+03	5.153E+06	3.782E+03	9.433E+03	5.153E+06	1.038E+04
2006	3.594E+03	5.386E+06	3.953E+03	9.860E+03	5.386E+06	1.085E+04
2007	3.868E+03	5.798E+06	4.255E+03	1.061E+04	5.798E+06	1.167E+04
2008	4.115E+03	6.168E+06	4.527E+03	1.129E+04	6.168E+06	1.242E+04
2009	4.398E+03	6.592E+06	4.838E+03	1.207E+04	6.592E+06	1.327E+04
2010	4.635E+03	6.948E+06	5.099E+03	1.272E+04	6.948E+06	1.399E+04
2011	4.872E+03	7.303E+06	5.360E+03	1.337E+04	7.303E+06	1.471E+04
2012	5.090E+03	7.629E+06	5.599E+03	1.396E+04	7.629E+06	1.536E+04
2013	5.296E+03	7.939E+06	5.826E+03	1.453E+04	7.939E+06	1.599E+04
2014	5.493E+03	8.234E+06	6.042E+03	1.507E+04	8.234E+06	1.658E+04
2015	5.680E+03	8.514E+06	6.248E+03	1.558E+04	8.514E+06	1.714E+04
2016	5.858E+03	8.781E+06	6.444E+03	1.607E+04	8.781E+06	1.768E+04
2017	6.027E+03	9.034E+06	6.630E+03	1.654E+04	9.034E+06	1.819E+04
2018	6.188E+03	9.276E+06	6.807E+03	1.698E+04	9.276E+06	1.868E+04
2019	6.341E+03	9.505E+06	6.976E+03	1.740E+04	9.505E+06	1.914E+04
2020	6.487E+03	9.724E+06	7.136E+03	1.780E+04	9.724E+06	1.958E+04

Results (Continued)

Year	Methane			Carbon dioxide		
	(Mg/year)	(m^3/year)	(short tons/year)	(Mg/year)	(m^3/year)	(short tons/year)
2021	6.626E+03	9.931E+06	7.288E+03	1.818E+04	9.931E+06	2.000E+04
2022	6.758E+03	1.013E+07	7.433E+03	1.854E+04	1.013E+07	2.040E+04
2023	6.883E+03	1.032E+07	7.571E+03	1.889E+04	1.032E+07	2.077E+04
2024	7.002E+03	1.050E+07	7.702E+03	1.921E+04	1.050E+07	2.113E+04
2025	7.116E+03	1.067E+07	7.827E+03	1.952E+04	1.067E+07	2.148E+04
2026	7.224E+03	1.083E+07	7.946E+03	1.982E+04	1.083E+07	2.180E+04
2027	7.326E+03	1.098E+07	8.059E+03	2.010E+04	1.098E+07	2.211E+04
2028	7.424E+03	1.113E+07	8.166E+03	2.037E+04	1.113E+07	2.241E+04
2029	7.517E+03	1.127E+07	8.268E+03	2.062E+04	1.127E+07	2.269E+04
2030	7.605E+03	1.140E+07	8.366E+03	2.087E+04	1.140E+07	2.295E+04
2031	7.689E+03	1.153E+07	8.458E+03	2.110E+04	1.153E+07	2.321E+04
2032	7.314E+03	1.096E+07	8.046E+03	2.007E+04	1.096E+07	2.208E+04
2033	6.957E+03	1.043E+07	7.653E+03	1.909E+04	1.043E+07	2.100E+04
2034	6.618E+03	9.920E+06	7.280E+03	1.816E+04	9.920E+06	1.997E+04
2035	6.295E+03	9.436E+06	6.925E+03	1.727E+04	9.436E+06	1.900E+04
2036	5.988E+03	8.976E+06	6.587E+03	1.643E+04	8.976E+06	1.807E+04
2037	5.696E+03	8.538E+06	6.266E+03	1.563E+04	8.538E+06	1.719E+04
2038	5.418E+03	8.122E+06	5.960E+03	1.487E+04	8.122E+06	1.635E+04
2039	5.154E+03	7.726E+06	5.670E+03	1.414E+04	7.726E+06	1.556E+04
2040	4.903E+03	7.349E+06	5.393E+03	1.345E+04	7.349E+06	1.480E+04
2041	4.664E+03	6.991E+06	5.130E+03	1.280E+04	6.991E+06	1.408E+04
2042	4.436E+03	6.650E+06	4.880E+03	1.217E+04	6.650E+06	1.339E+04
2043	4.220E+03	6.325E+06	4.642E+03	1.158E+04	6.325E+06	1.274E+04
2044	4.014E+03	6.017E+06	4.416E+03	1.101E+04	6.017E+06	1.212E+04
2045	3.818E+03	5.723E+06	4.200E+03	1.048E+04	5.723E+06	1.152E+04
2046	3.632E+03	5.444E+06	3.995E+03	9.966E+03	5.444E+06	1.096E+04
2047	3.455E+03	5.179E+06	3.800E+03	9.480E+03	5.179E+06	1.043E+04
2048	3.286E+03	4.926E+06	3.615E+03	9.017E+03	4.926E+06	9.919E+03
2049	3.126E+03	4.686E+06	3.439E+03	8.578E+03	4.686E+06	9.435E+03
2050	2.974E+03	4.457E+06	3.271E+03	8.159E+03	4.457E+06	8.975E+03
2051	2.829E+03	4.240E+06	3.112E+03	7.761E+03	4.240E+06	8.537E+03
2052	2.691E+03	4.033E+06	2.960E+03	7.383E+03	4.033E+06	8.121E+03
2053	2.559E+03	3.836E+06	2.815E+03	7.023E+03	3.836E+06	7.725E+03
2054	2.435E+03	3.649E+06	2.678E+03	6.680E+03	3.649E+06	7.348E+03
2055	2.316E+03	3.471E+06	2.548E+03	6.354E+03	3.471E+06	6.990E+03
2056	2.203E+03	3.302E+06	2.423E+03	6.044E+03	3.302E+06	6.649E+03
2057	2.096E+03	3.141E+06	2.305E+03	5.750E+03	3.141E+06	6.325E+03
2058	1.993E+03	2.988E+06	2.193E+03	5.469E+03	2.988E+06	6.016E+03
2059	1.896E+03	2.842E+06	2.086E+03	5.203E+03	2.842E+06	5.723E+03
2060	1.804E+03	2.704E+06	1.984E+03	4.949E+03	2.704E+06	5.444E+03
2061	1.716E+03	2.572E+06	1.887E+03	4.707E+03	2.572E+06	5.178E+03
2062	1.632E+03	2.446E+06	1.795E+03	4.478E+03	2.446E+06	4.926E+03
2063	1.552E+03	2.327E+06	1.708E+03	4.259E+03	2.327E+06	4.685E+03
2064	1.477E+03	2.213E+06	1.624E+03	4.052E+03	2.213E+06	4.457E+03
2065	1.405E+03	2.106E+06	1.545E+03	3.854E+03	2.106E+06	4.240E+03
2066	1.336E+03	2.003E+06	1.470E+03	3.666E+03	2.003E+06	4.033E+03
2067	1.271E+03	1.905E+06	1.398E+03	3.487E+03	1.905E+06	3.836E+03
2068	1.209E+03	1.812E+06	1.330E+03	3.317E+03	1.812E+06	3.649E+03
2069	1.150E+03	1.724E+06	1.265E+03	3.155E+03	1.724E+06	3.471E+03
2070	1.094E+03	1.640E+06	1.203E+03	3.002E+03	1.640E+06	3.302E+03
2071	1.041E+03	1.560E+06	1.145E+03	2.855E+03	1.560E+06	3.141E+03

Results (Continued)

Year	Methane			Carbon dioxide		
	(Mg/year)	(m^3/year)	(short tons/year)	(Mg/year)	(m^3/year)	(short tons/year)
2072	9.899E+02	1.484E+06	1.089E+03	2.716E+03	1.484E+06	2.988E+03
2073	9.416E+02	1.411E+06	1.036E+03	2.583E+03	1.411E+06	2.842E+03
2074	8.957E+02	1.343E+06	9.852E+02	2.457E+03	1.343E+06	2.703E+03
2075	8.520E+02	1.277E+06	9.372E+02	2.338E+03	1.277E+06	2.571E+03
2076	8.104E+02	1.215E+06	8.915E+02	2.224E+03	1.215E+06	2.446E+03
2077	7.709E+02	1.156E+06	8.480E+02	2.115E+03	1.156E+06	2.327E+03
2078	7.333E+02	1.099E+06	8.066E+02	2.012E+03	1.099E+06	2.213E+03
2079	6.975E+02	1.046E+06	7.673E+02	1.914E+03	1.046E+06	2.105E+03
2080	6.635E+02	9.946E+05	7.299E+02	1.821E+03	9.946E+05	2.003E+03
2081	6.312E+02	9.461E+05	6.943E+02	1.732E+03	9.461E+05	1.905E+03
2082	6.004E+02	8.999E+05	6.604E+02	1.647E+03	8.999E+05	1.812E+03
2083	5.711E+02	8.560E+05	6.282E+02	1.567E+03	8.560E+05	1.724E+03
2084	5.432E+02	8.143E+05	5.976E+02	1.491E+03	8.143E+05	1.640E+03
2085	5.168E+02	7.746E+05	5.684E+02	1.418E+03	7.746E+05	1.560E+03
2086	4.916E+02	7.368E+05	5.407E+02	1.349E+03	7.368E+05	1.484E+03
2087	4.676E+02	7.009E+05	5.143E+02	1.283E+03	7.009E+05	1.411E+03
2088	4.448E+02	6.667E+05	4.893E+02	1.220E+03	6.667E+05	1.342E+03
2089	4.231E+02	6.342E+05	4.654E+02	1.161E+03	6.342E+05	1.277E+03
2090	4.024E+02	6.032E+05	4.427E+02	1.104E+03	6.032E+05	1.215E+03
2091	3.828E+02	5.738E+05	4.211E+02	1.050E+03	5.738E+05	1.155E+03
2092	3.642E+02	5.458E+05	4.006E+02	9.991E+02	5.458E+05	1.099E+03
2093	3.464E+02	5.192E+05	3.810E+02	9.504E+02	5.192E+05	1.045E+03
2094	3.295E+02	4.939E+05	3.624E+02	9.041E+02	4.939E+05	9.945E+02
2095	3.134E+02	4.698E+05	3.448E+02	8.600E+02	4.698E+05	9.460E+02
2096	2.981E+02	4.469E+05	3.280E+02	8.180E+02	4.469E+05	8.998E+02
2097	2.836E+02	4.251E+05	3.120E+02	7.781E+02	4.251E+05	8.559E+02
2098	2.698E+02	4.044E+05	2.967E+02	7.402E+02	4.044E+05	8.142E+02
2099	2.566E+02	3.846E+05	2.823E+02	7.041E+02	3.846E+05	7.745E+02
2100	2.441E+02	3.659E+05	2.685E+02	6.697E+02	3.659E+05	7.367E+02
2101	2.322E+02	3.480E+05	2.554E+02	6.371E+02	3.480E+05	7.008E+02
2102	2.209E+02	3.311E+05	2.430E+02	6.060E+02	3.311E+05	6.666E+02
2103	2.101E+02	3.149E+05	2.311E+02	5.765E+02	3.149E+05	6.341E+02
2104	1.998E+02	2.996E+05	2.198E+02	5.483E+02	2.996E+05	6.032E+02
2105	1.901E+02	2.849E+05	2.091E+02	5.216E+02	2.849E+05	5.738E+02
2106	1.808E+02	2.711E+05	1.989E+02	4.962E+02	2.711E+05	5.458E+02
2107	1.720E+02	2.578E+05	1.892E+02	4.720E+02	2.578E+05	5.192E+02
2108	1.636E+02	2.453E+05	1.800E+02	4.489E+02	2.453E+05	4.938E+02
2109	1.556E+02	2.333E+05	1.712E+02	4.270E+02	2.333E+05	4.698E+02
2110	1.481E+02	2.219E+05	1.629E+02	4.062E+02	2.219E+05	4.468E+02
2111	1.408E+02	2.111E+05	1.549E+02	3.864E+02	2.111E+05	4.251E+02

Results (Continued)

Year	NMOC			Total landfill gas		
	(Mg/year)	*(m^3/year)*	*(short tons/year)*	*(Mg/year)*	*(m^3/year)*	*(short tons/year)*
1971	0	0	0	0	0	0
1972	5.259E+00	1.467E+03	5.785E+00	4.581E+02	3.668E+05	5.039E+02
1973	1.026E+01	2.863E+03	1.129E+01	8.938E+02	7.157E+05	9.832E+02
1974	1.502E+01	4.190E+03	1.652E+01	1.308E+03	1.048E+06	1.439E+03
1975	1.692E+01	4.720E+03	1.861E+01	1.474E+03	1.180E+06	1.621E+03
1976	1.872E+01	5.223E+03	2.059E+01	1.631E+03	1.306E+06	1.794E+03
1977	2.044E+01	5.702E+03	2.248E+01	1.780E+03	1.426E+06	1.958E+03
1978	2.207E+01	6.158E+03	2.428E+01	1.922E+03	1.539E+06	2.115E+03
1979	2.362E+01	6.591E+03	2.599E+01	2.058E+03	1.648E+06	2.263E+03
1980	2.510E+01	7.003E+03	2.761E+01	2.186E+03	1.751E+06	2.405E+03
1981	2.651E+01	7.395E+03	2.916E+01	2.309E+03	1.849E+06	2.540E+03
1982	2.784E+01	7.768E+03	3.063E+01	2.425E+03	1.942E+06	2.668E+03
1983	2.912E+01	8.123E+03	3.203E+01	2.536E+03	2.031E+06	2.790E+03
1984	3.033E+01	8.460E+03	3.336E+01	2.641E+03	2.115E+06	2.905E+03
1985	3.148E+01	8.781E+03	3.462E+01	2.742E+03	2.195E+06	3.016E+03
1986	3.257E+01	9.087E+03	3.583E+01	2.837E+03	2.272E+06	3.121E+03
1987	3.361E+01	9.377E+03	3.697E+01	2.928E+03	2.344E+06	3.220E+03
1988	3.460E+01	9.653E+03	3.806E+01	3.014E+03	2.413E+06	3.315E+03
1989	3.554E+01	9.916E+03	3.910E+01	3.096E+03	2.479E+06	3.405E+03
1990	3.644E+01	1.017E+04	4.008E+01	3.174E+03	2.542E+06	3.491E+03
1991	3.971E+01	1.108E+04	4.368E+01	3.458E+03	2.769E+06	3.804E+03
1992	4.221E+01	1.178E+04	4.643E+01	3.677E+03	2.944E+06	4.044E+03
1993	4.495E+01	1.254E+04	4.944E+01	3.915E+03	3.135E+06	4.307E+03
1994	4.788E+01	1.336E+04	5.267E+01	4.170E+03	3.339E+06	4.587E+03
1995	5.182E+01	1.446E+04	5.700E+01	4.514E+03	3.614E+06	4.965E+03
1996	5.634E+01	1.572E+04	6.198E+01	4.907E+03	3.930E+06	5.398E+03
1997	6.532E+01	1.822E+04	7.185E+01	5.689E+03	4.556E+06	6.258E+03
1998	8.115E+01	2.264E+04	8.927E+01	7.068E+03	5.660E+06	7.775E+03
1999	9.781E+01	2.729E+04	1.076E+02	8.519E+03	6.822E+06	9.371E+03
2000	1.123E+02	3.133E+04	1.235E+02	9.781E+03	7.832E+06	1.076E+04
2001	1.216E+02	3.393E+04	1.338E+02	1.059E+04	8.483E+06	1.165E+04
2002	1.300E+02	3.627E+04	1.430E+02	1.132E+04	9.067E+06	1.246E+04
2003	1.363E+02	3.801E+04	1.499E+02	1.187E+04	9.504E+06	1.306E+04
2004	1.426E+02	3.977E+04	1.568E+02	1.242E+04	9.942E+06	1.366E+04
2005	1.478E+02	4.123E+04	1.625E+02	1.287E+04	1.031E+07	1.416E+04
2006	1.545E+02	4.309E+04	1.699E+02	1.345E+04	1.077E+07	1.480E+04
2007	1.663E+02	4.638E+04	1.829E+02	1.448E+04	1.160E+07	1.593E+04
2008	1.769E+02	4.935E+04	1.946E+02	1.541E+04	1.234E+07	1.695E+04
2009	1.890E+02	5.274E+04	2.079E+02	1.647E+04	1.318E+07	1.811E+04
2010	1.992E+02	5.558E+04	2.192E+02	1.735E+04	1.390E+07	1.909E+04
2011	2.094E+02	5.843E+04	2.304E+02	1.824E+04	1.461E+07	2.006E+04
2012	2.188E+02	6.103E+04	2.406E+02	1.905E+04	1.526E+07	2.096E+04
2013	2.277E+02	6.351E+04	2.504E+02	1.983E+04	1.588E+07	2.181E+04
2014	2.361E+02	6.587E+04	2.597E+02	2.056E+04	1.647E+07	2.262E+04
2015	2.441E+02	6.811E+04	2.686E+02	2.126E+04	1.703E+07	2.339E+04
2016	2.518E+02	7.025E+04	2.770E+02	2.193E+04	1.756E+07	2.412E+04
2017	2.591E+02	7.228E+04	2.850E+02	2.256E+04	1.807E+07	2.482E+04
2018	2.660E+02	7.421E+04	2.926E+02	2.317E+04	1.855E+07	2.548E+04
2019	2.726E+02	7.604E+04	2.998E+02	2.374E+04	1.901E+07	2.611E+04
2020	2.788E+02	7.779E+04	3.067E+02	2.429E+04	1.945E+07	2.671E+04

Results (Continued)

Year	NMOC			Total landfill gas		
	(Mg/year)	(m^3/year)	(short tons/year)	(Mg/year)	(m^3/year)	(short tons/year)
2021	2.848E+02	7.945E+04	3.133E+02	2.481E+04	1.986E+07	2.729E+04
2022	2.905E+02	8.103E+04	3.195E+02	2.530E+04	2.026E+07	2.783E+04
2023	2.958E+02	8.254E+04	3.254E+02	2.577E+04	2.063E+07	2.834E+04
2024	3.010E+02	8.397E+04	3.311E+02	2.621E+04	2.099E+07	2.884E+04
2025	3.058E+02	8.533E+04	3.364E+02	2.664E+04	2.133E+07	2.930E+04
2026	3.105E+02	8.662E+04	3.415E+02	2.704E+04	2.165E+07	2.975E+04
2027	3.149E+02	8.785E+04	3.464E+02	2.743E+04	2.196E+07	3.017E+04
2028	3.191E+02	8.902E+04	3.510E+02	2.779E+04	2.226E+07	3.057E+04
2029	3.231E+02	9.014E+04	3.554E+02	2.814E+04	2.253E+07	3.096E+04
2030	3.269E+02	9.120E+04	3.596E+02	2.847E+04	2.280E+07	3.132E+04
2031	3.305E+02	9.220E+04	3.635E+02	2.879E+04	2.305E+07	3.167E+04
2032	3.144E+02	8.771E+04	3.458E+02	2.738E+04	2.193E+07	3.012E+04
2033	2.990E+02	8.343E+04	3.290E+02	2.605E+04	2.086E+07	2.865E+04
2034	2.845E+02	7.936E+04	3.129E+02	2.478E+04	1.984E+07	2.725E+04
2035	2.706E+02	7.549E+04	2.976E+02	2.357E+04	1.887E+07	2.593E+04
2036	2.574E+02	7.181E+04	2.831E+02	2.242E+04	1.795E+07	2.466E+04
2037	2.448E+02	6.831E+04	2.693E+02	2.133E+04	1.708E+07	2.346E+04
2038	2.329E+02	6.497E+04	2.562E+02	2.029E+04	1.624E+07	2.231E+04
2039	2.215E+02	6.181E+04	2.437E+02	1.930E+04	1.545E+07	2.123E+04
2040	2.107E+02	5.879E+04	2.318E+02	1.836E+04	1.470E+07	2.019E+04
2041	2.005E+02	5.592E+04	2.205E+02	1.746E+04	1.398E+07	1.921E+04
2042	1.907E+02	5.320E+04	2.097E+02	1.661E+04	1.330E+07	1.827E+04
2043	1.814E+02	5.060E+04	1.995E+02	1.580E+04	1.265E+07	1.738E+04
2044	1.725E+02	4.813E+04	1.898E+02	1.503E+04	1.203E+07	1.653E+04
2045	1.641E+02	4.579E+04	1.805E+02	1.429E+04	1.145E+07	1.572E+04
2046	1.561E+02	4.355E+04	1.717E+02	1.360E+04	1.089E+07	1.496E+04
2047	1.485E+02	4.143E+04	1.634E+02	1.293E+04	1.036E+07	1.423E+04
2048	1.413E+02	3.941E+04	1.554E+02	1.230E+04	9.852E+06	1.353E+04
2049	1.344E+02	3.749E+04	1.478E+02	1.170E+04	9.372E+06	1.287E+04
2050	1.278E+02	3.566E+04	1.406E+02	1.113E+04	8.915E+06	1.225E+04
2051	1.216E+02	3.392E+04	1.337E+02	1.059E+04	8.480E+06	1.165E+04
2052	1.157E+02	3.227E+04	1.272E+02	1.007E+04	8.066E+06	1.108E+04
2053	1.100E+02	3.069E+04	1.210E+02	9.582E+03	7.673E+06	1.054E+04
2054	1.046E+02	2.919E+04	1.151E+02	9.115E+03	7.299E+06	1.003E+04
2055	9.954E+01	2.777E+04	1.095E+02	8.670E+03	6.943E+06	9.537E+03
2056	9.469E+01	2.642E+04	1.042E+02	8.247E+03	6.604E+06	9.072E+03
2057	9.007E+01	2.513E+04	9.908E+01	7.845E+03	6.282E+06	8.630E+03
2058	8.568E+01	2.390E+04	9.425E+01	7.463E+03	5.976E+06	8.209E+03
2059	8.150E+01	2.274E+04	8.965E+01	7.099E+03	5.684E+06	7.809E+03
2060	7.753E+01	2.163E+04	8.528E+01	6.752E+03	5.407E+06	7.428E+03
2061	7.374E+01	2.057E+04	8.112E+01	6.423E+03	5.143E+06	7.065E+03
2062	7.015E+01	1.957E+04	7.716E+01	6.110E+03	4.892E+06	6.721E+03
2063	6.673E+01	1.862E+04	7.340E+01	5.812E+03	4.654E+06	6.393E+03
2064	6.347E+01	1.771E+04	6.982E+01	5.528E+03	4.427E+06	6.081E+03
2065	6.038E+01	1.684E+04	6.641E+01	5.259E+03	4.211E+06	5.785E+03
2066	5.743E+01	1.602E+04	6.318E+01	5.002E+03	4.006E+06	5.503E+03
2067	5.463E+01	1.524E+04	6.009E+01	4.758E+03	3.810E+06	5.234E+03
2068	5.197E+01	1.450E+04	5.716E+01	4.526E+03	3.624E+06	4.979E+03
2069	4.943E+01	1.379E+04	5.438E+01	4.306E+03	3.448E+06	4.736E+03
2070	4.702E+01	1.312E+04	5.172E+01	4.096E+03	3.280E+06	4.505E+03
2071	4.473E+01	1.248E+04	4.920E+01	3.896E+03	3.120E+06	4.285E+03

Results (Continued)

Year	NMOC			Total landfill gas		
	(Mg/year)	(m^3/year)	(short tons/year)	(Mg/year)	(m^3/year)	(short tons/year)
2072	4.255E+01	1.187E+04	4.680E+01	3.706E+03	2.967E+06	4.076E+03
2073	4.047E+01	1.129E+04	4.452E+01	3.525E+03	2.823E+06	3.878E+03
2074	3.850E+01	1.074E+04	4.235E+01	3.353E+03	2.685E+06	3.688E+03
2075	3.662E+01	1.022E+04	4.028E+01	3.190E+03	2.554E+06	3.509E+03
2076	3.483E+01	9.718E+03	3.832E+01	3.034E+03	2.430E+06	3.337E+03
2077	3.314E+01	9.244E+03	3.645E+01	2.886E+03	2.311E+06	3.175E+03
2078	3.152E+01	8.793E+03	3.467E+01	2.745E+03	2.198E+06	3.020E+03
2079	2.998E+01	8.364E+03	3.298E+01	2.611E+03	2.091E+06	2.873E+03
2080	2.852E+01	7.957E+03	3.137E+01	2.484E+03	1.989E+06	2.732E+03
2081	2.713E+01	7.569E+03	2.984E+01	2.363E+03	1.892E+06	2.599E+03
2082	2.581E+01	7.199E+03	2.839E+01	2.248E+03	1.800E+06	2.472E+03
2083	2.455E+01	6.848E+03	2.700E+01	2.138E+03	1.712E+06	2.352E+03
2084	2.335E+01	6.514E+03	2.569E+01	2.034E+03	1.629E+06	2.237E+03
2085	2.221E+01	6.197E+03	2.443E+01	1.935E+03	1.549E+06	2.128E+03
2086	2.113E+01	5.894E+03	2.324E+01	1.840E+03	1.474E+06	2.024E+03
2087	2.010E+01	5.607E+03	2.211E+01	1.751E+03	1.402E+06	1.926E+03
2088	1.912E+01	5.333E+03	2.103E+01	1.665E+03	1.333E+06	1.832E+03
2089	1.819E+01	5.073E+03	2.000E+01	1.584E+03	1.268E+06	1.742E+03
2090	1.730E+01	4.826E+03	1.903E+01	1.507E+03	1.206E+06	1.657E+03
2091	1.645E+01	4.591E+03	1.810E+01	1.433E+03	1.148E+06	1.577E+03
2092	1.565E+01	4.367E+03	1.722E+01	1.363E+03	1.092E+06	1.500E+03
2093	1.489E+01	4.154E+03	1.638E+01	1.297E+03	1.038E+06	1.426E+03
2094	1.416E+01	3.951E+03	1.558E+01	1.234E+03	9.878E+05	1.357E+03
2095	1.347E+01	3.758E+03	1.482E+01	1.173E+03	9.396E+05	1.291E+03
2096	1.281E+01	3.575E+03	1.410E+01	1.116E+03	8.938E+05	1.228E+03
2097	1.219E+01	3.401E+03	1.341E+01	1.062E+03	8.502E+05	1.168E+03
2098	1.160E+01	3.235E+03	1.275E+01	1.010E+03	8.087E+05	1.111E+03
2099	1.103E+01	3.077E+03	1.213E+01	9.607E+02	7.693E+05	1.057E+03
2100	1.049E+01	2.927E+03	1.154E+01	9.138E+02	7.318E+05	1.005E+03
2101	9.980E+00	2.784E+03	1.098E+01	8.693E+02	6.961E+05	9.562E+02
2102	9.493E+00	2.649E+03	1.044E+01	8.269E+02	6.621E+05	9.096E+02
2103	9.030E+00	2.519E+03	9.934E+00	7.866E+02	6.298E+05	8.652E+02
2104	8.590E+00	2.396E+03	9.449E+00	7.482E+02	5.991E+05	8.230E+02
2105	8.171E+00	2.280E+03	8.988E+00	7.117E+02	5.699E+05	7.829E+02
2106	7.773E+00	2.168E+03	8.550E+00	6.770E+02	5.421E+05	7.447E+02
2107	7.394E+00	2.063E+03	8.133E+00	6.440E+02	5.157E+05	7.084E+02
2108	7.033E+00	1.962E+03	7.736E+00	6.126E+02	4.905E+05	6.738E+02
2109	6.690E+00	1.866E+03	7.359E+00	5.827E+02	4.666E+05	6.410E+02
2110	6.364E+00	1.775E+03	7.000E+00	5.543E+02	4.438E+05	6.097E+02
2111	6.053E+00	1.689E+03	6.659E+00	5.272E+02	4.222E+05	5.800E+02

LandGEM Model Output File
With John Smith Road Landfill Expansion Project

Summary Report

Landfill Name or Identifier: John Smith Road Landfill

Date: Wednesday, March 07, 2012

Description/Comments:

The actual opening year of the JSR Landfill was 1968. To stay within the 80-year limit of the LandGEM model, a start year of 1971 was used. Waste amounts for the first three years (1971-1973) were doubled to compensate.

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} k L_o \left(\frac{M_i}{10} \right) e^{-k t_{ij}}$$

Where,

Q_{CH4} = annual methane generation in the year of the calculation (*m^3/year*)
i = 1-year time increment
n = (year of the calculation) - (initial year of waste acceptance)
j = 0.1-year time increment
k = methane generation rate (*$year^{-1}$*)
L_o = potential methane generation capacity (*m^3/Mg*)

M_i = mass of waste accepted in the i^{th} year (*Mg*)
t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at http://www.epa.gov/ttnatw01/landfill/landflpg.html.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for convential landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	**1971**	
Landfill Closure Year (with 80-year limit)	**2050**	
Actual Closure Year (without limit)	***2050***	
Have Model Calculate Closure Year?	**No**	
Waste Design Capacity		*megagrams*

MODEL PARAMETERS

Methane Generation Rate, k	**0.050**	*$year^{-1}$*
Potential Methane Generation Capacity, L_o	**170**	*m^3/Mg*
NMOC Concentration	**4,000**	*ppmv as hexane*
Methane Content	**50**	*% by volume*

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	**Methane**
Gas / Pollutant #2:	**Carbon dioxide**
Gas / Pollutant #3:	**NMOC**
Gas / Pollutant #4:	**Total landfill gas**

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
1971	22,065	24,272	0	0
1972	22,065	24,272	22,065	24,272
1973	22,065	24,272	44,131	48,544
1974	11,033	12,136	66,196	72,816
1975	11,033	12,136	77,229	84,952
1976	11,033	12,136	88,262	97,088
1977	11,033	12,136	99,295	109,224
1978	11,033	12,136	110,327	121,360
1979	11,033	12,136	121,360	133,496
1980	11,033	12,136	132,393	145,632
1981	11,033	12,136	143,425	157,768
1982	11,033	12,136	154,458	169,904
1983	11,033	12,136	165,491	182,040
1984	11,033	12,136	176,524	194,176
1985	11,033	12,136	187,556	206,312
1986	11,033	12,136	198,589	218,448
1987	11,033	12,136	209,622	230,584
1988	11,033	12,136	220,655	242,720
1989	11,033	12,136	231,687	254,856
1990	21,158	23,274	242,720	266,992
1991	18,645	20,509	263,878	290,266
1992	20,116	22,128	282,523	310,775
1993	21,495	23,644	302,639	332,903
1994	26,332	28,965	324,134	356,547
1995	29,575	32,533	350,465	385,512
1996	49,182	54,100	380,041	418,045
1997	79,795	87,774	429,223	472,145
1998	86,510	95,161	509,017	559,919
1999	80,772	88,849	595,527	655,080
2000	62,162	68,379	676,299	743,929
2001	59,991	65,990	738,461	812,308
2002	52,877	58,165	798,452	878,298
2003	54,275	59,702	851,330	936,463
2004	51,071	56,178	905,604	996,165
2005	58,297	64,127	956,675	1,052,343
2006	81,074	89,181	1,014,972	1,116,470
2007	78,609	86,470	1,096,046	1,205,651
2008	87,205	95,925	1,174,655	1,292,121
2009	81,461	89,607	1,261,860	1,388,046
2010	83,527	91,880	1,343,321	1,477,653

WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	*(short tons/year)*	*(Mg)*	*(short tons)*
2011	82,045	90,250	1,426,848	1,569,533
2012	82,045	90,250	1,508,893	1,659,783
2013	82,045	90,250	1,590,939	1,750,033
2014	100,278	110,306	1,672,984	1,840,283
2015	118,511	130,362	1,773,262	1,950,589
2016	136,744	150,418	1,891,773	2,080,951
2017	154,976	170,474	2,028,517	2,231,369
2018	173,209	190,530	2,183,493	2,401,843
2019	191,442	210,586	2,356,702	2,592,373
2020	209,675	230,642	2,548,144	2,802,959
2021	227,907	250,698	2,757,819	3,033,601
2022	246,136	270,750	2,985,726	3,284,299
2023	246,136	270,750	3,231,862	3,555,049
2024	246,136	270,750	3,477,999	3,825,799
2025	246,136	270,750	3,724,135	4,096,549
2026	246,136	270,750	3,970,271	4,367,299
2027	246,136	270,750	4,216,408	4,638,049
2028	246,136	270,750	4,462,544	4,908,799
2029	246,136	270,750	4,708,681	5,179,549
2030	246,136	270,750	4,954,817	5,450,299
2031	246,136	270,750	5,200,953	5,721,049
2032	246,136	270,750	5,447,090	5,991,799
2033	246,136	270,750	5,693,226	6,262,549
2034	246,136	270,750	5,939,362	6,533,299
2035	246,136	270,750	6,185,499	6,804,049
2036	246,136	270,750	6,431,635	7,074,799
2037	246,136	270,750	6,677,771	7,345,549
2038	246,136	270,750	6,923,908	7,616,299
2039	246,136	270,750	7,170,044	7,887,049
2040	246,136	270,750	7,416,181	8,157,799
2041	246,136	270,750	7,662,317	8,428,549
2042	246,136	270,750	7,908,453	8,699,299
2043	246,136	270,750	8,154,590	8,970,049
2044	246,136	270,750	8,400,726	9,240,799
2045	246,136	270,750	8,646,862	9,511,549
2046	246,136	270,750	8,892,999	9,782,299
2047	246,136	270,750	9,139,135	10,053,049
2048	246,136	270,750	9,385,271	10,323,799
2049	246,136	270,750	9,631,408	10,594,549
2050	246,136	270,750	9,877,544	10,865,299

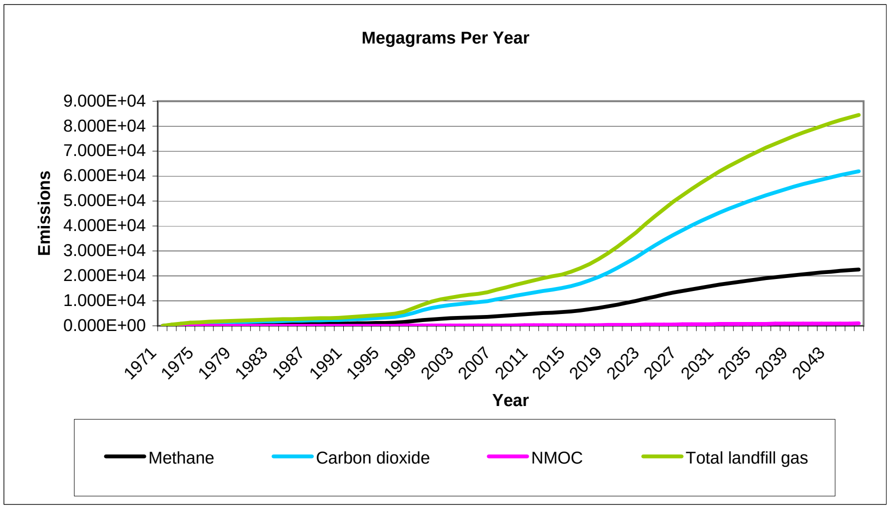
Pollutant Parameters

	Compound	Gas / Pollutant Default Parameters: Concentration (*ppmv*)	Molecular Weight	User-specified Pollutant Parameters: Concentration (*ppmv*)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,2,2-Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

Pollutant Parameters (Continued)

		Gas / Pollutant Default Parameters:		*User-specified Pollutant Parameters:*	
	Compound	Concentration (*ppmv*)	Molecular Weight	Concentration (*ppmv*)	Molecular Weight
Pollutants	Ethyl mercaptan (ethanethiol) - VOC	2.3	62.13		
	Ethylbenzene - HAP/VOC	4.6	106.16		
	Ethylene dibromide - HAP/VOC	1.0E-03	187.88		
	Fluorotrichloromethane - VOC	0.76	137.38		
	Hexane - HAP/VOC	6.6	86.18		
	Hydrogen sulfide	36	34.08		
	Mercury (total) - HAP	2.9E-04	200.61		
	Methyl ethyl ketone - HAP/VOC	7.1	72.11		
	Methyl isobutyl ketone - HAP/VOC	1.9	100.16		
	Methyl mercaptan - VOC	2.5	48.11		
	Pentane - VOC	3.3	72.15		
	Perchloroethylene (tetrachloroethylene) - HAP	3.7	165.83		
	Propane - VOC	11	44.09		
	t-1,2-Dichloroethene - VOC	2.8	96.94		
	Toluene - No or Unknown Co-disposal - HAP/VOC	39	92.13		
	Toluene - Co-disposal - HAP/VOC	170	92.13		
	Trichloroethylene (trichloroethene) - HAP/VOC	2.8	131.40		
	Vinyl chloride - HAP/VOC	7.3	62.50		
	Xylenes - HAP/VOC	12	106.16		

Graphs


Megagrams Per Year
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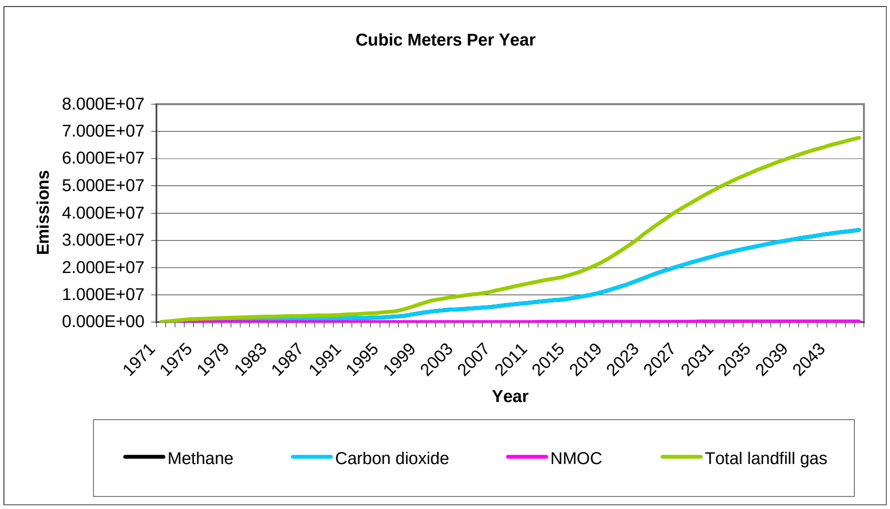
8.000E+04
7.000E+04
6.000E+04
5.000E+04
4.000E+04
3.000E+04
2.000E+04
1.000E+04
0.000E+00
1971
1975
1979
1983
1987
1991
1995
1999
2003
2007
2011
2015
2019
2023
2027
2031
2035
2039
2043
Year
Methane
Carbon dioxide
NMOC
Total landfill gas


Cubic Meters Per Year
Emissions
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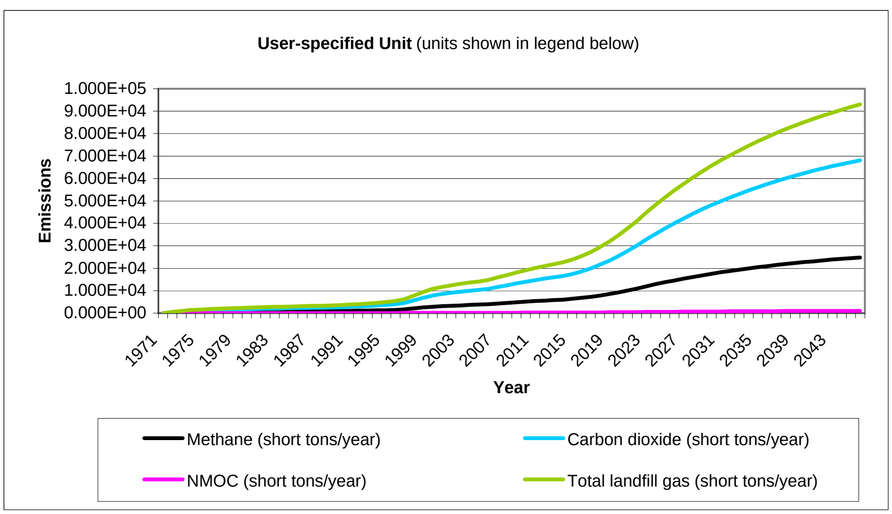
7.000E+07
6.000E+07
5.000E+07
4.000E+07
3.000E+07
2.000E+07
1.000E+07
0.000E+00
1971
1975
1979
1983
1987
1991
1995
1999
2003
2007
2011
2015
2019
2023
2027
2031
2035
2039
2043
Year
Methane
Carbon dioxide
NMOC
Total landfill gas


User-specified Unit (units shown in legend below)
Emissions
1.000E+05
9.000E+04
8.000E+04
7.000E+04
6.000E+04
5.000E+04
4.000E+04
3.000E+04
2.000E+04
1.000E+04
0.000E+00
1971
1975
1979
1983
1987
1991
1995
1999
2003
2007
2011
2015
2019
2023
2027
2031
2035
2039
2043
Year
Methane (short tons/year)
Carbon dioxide (short tons/year)
NMOC (short tons/year)
Total landfill gas (short tons/year)

Results

Year	Methane			Carbon dioxide		
	(Mg/year)	*(m^3/year)*	*(short tons/year)*	*(Mg/year)*	*(m^3/year)*	*(short tons/year)*
1971	0	0	0	0	0	0
1972	1.224E+02	1.834E+05	1.346E+02	3.357E+02	1.834E+05	3.693E+02
1973	2.387E+02	3.579E+05	2.626E+02	6.551E+02	3.579E+05	7.206E+02
1974	3.495E+02	5.238E+05	3.844E+02	9.588E+02	5.238E+05	1.055E+03
1975	3.936E+02	5.900E+05	4.330E+02	1.080E+03	5.900E+05	1.188E+03
1976	4.356E+02	6.529E+05	4.791E+02	1.195E+03	6.529E+05	1.315E+03
1977	4.755E+02	7.128E+05	5.231E+02	1.305E+03	7.128E+05	1.435E+03
1978	5.135E+02	7.697E+05	5.648E+02	1.409E+03	7.697E+05	1.550E+03
1979	5.496E+02	8.239E+05	6.046E+02	1.508E+03	8.239E+05	1.659E+03
1980	5.840E+02	8.754E+05	6.424E+02	1.602E+03	8.754E+05	1.763E+03
1981	6.167E+02	9.244E+05	6.784E+02	1.692E+03	9.244E+05	1.861E+03
1982	6.478E+02	9.710E+05	7.126E+02	1.777E+03	9.710E+05	1.955E+03
1983	6.774E+02	1.015E+06	7.451E+02	1.859E+03	1.015E+06	2.044E+03
1984	7.055E+02	1.058E+06	7.761E+02	1.936E+03	1.058E+06	2.129E+03
1985	7.323E+02	1.098E+06	8.055E+02	2.009E+03	1.098E+06	2.210E+03
1986	7.578E+02	1.136E+06	8.335E+02	2.079E+03	1.136E+06	2.287E+03
1987	7.820E+02	1.172E+06	8.602E+02	2.146E+03	1.172E+06	2.360E+03
1988	8.050E+02	1.207E+06	8.855E+02	2.209E+03	1.207E+06	2.430E+03
1989	8.269E+02	1.240E+06	9.096E+02	2.269E+03	1.240E+06	2.496E+03
1990	8.478E+02	1.271E+06	9.326E+02	2.326E+03	1.271E+06	2.559E+03
1991	9.238E+02	1.385E+06	1.016E+03	2.535E+03	1.385E+06	2.788E+03
1992	9.821E+02	1.472E+06	1.080E+03	2.695E+03	1.472E+06	2.964E+03
1993	1.046E+03	1.567E+06	1.150E+03	2.869E+03	1.567E+06	3.156E+03
1994	1.114E+03	1.670E+06	1.225E+03	3.056E+03	1.670E+06	3.362E+03
1995	1.206E+03	1.807E+06	1.326E+03	3.308E+03	1.807E+06	3.639E+03
1996	1.311E+03	1.965E+06	1.442E+03	3.597E+03	1.965E+06	3.956E+03
1997	1.520E+03	2.278E+06	1.672E+03	4.169E+03	2.278E+06	4.586E+03
1998	1.888E+03	2.830E+06	2.077E+03	5.180E+03	2.830E+06	5.698E+03
1999	2.276E+03	3.411E+06	2.503E+03	6.244E+03	3.411E+06	6.868E+03
2000	2.613E+03	3.916E+06	2.874E+03	7.168E+03	3.916E+06	7.885E+03
2001	2.830E+03	4.242E+06	3.113E+03	7.764E+03	4.242E+06	8.541E+03
2002	3.024E+03	4.533E+06	3.327E+03	8.298E+03	4.533E+06	9.128E+03
2003	3.170E+03	4.752E+06	3.487E+03	8.698E+03	4.752E+06	9.568E+03
2004	3.317E+03	4.971E+06	3.648E+03	9.100E+03	4.971E+06	1.001E+04
2005	3.438E+03	5.153E+06	3.782E+03	9.433E+03	5.153E+06	1.038E+04
2006	3.594E+03	5.386E+06	3.953E+03	9.860E+03	5.386E+06	1.085E+04
2007	3.868E+03	5.798E+06	4.255E+03	1.061E+04	5.798E+06	1.167E+04
2008	4.115E+03	6.168E+06	4.527E+03	1.129E+04	6.168E+06	1.242E+04
2009	4.398E+03	6.592E+06	4.838E+03	1.207E+04	6.592E+06	1.327E+04
2010	4.635E+03	6.948E+06	5.099E+03	1.272E+04	6.948E+06	1.399E+04
2011	4.872E+03	7.303E+06	5.360E+03	1.337E+04	7.303E+06	1.471E+04
2012	5.090E+03	7.629E+06	5.599E+03	1.396E+04	7.629E+06	1.536E+04
2013	5.296E+03	7.939E+06	5.826E+03	1.453E+04	7.939E+06	1.599E+04
2014	5.493E+03	8.234E+06	6.042E+03	1.507E+04	8.234E+06	1.658E+04
2015	5.781E+03	8.666E+06	6.359E+03	1.586E+04	8.666E+06	1.745E+04
2016	6.156E+03	9.228E+06	6.772E+03	1.689E+04	9.228E+06	1.858E+04
2017	6.614E+03	9.914E+06	7.276E+03	1.815E+04	9.914E+06	1.996E+04
2018	7.151E+03	1.072E+07	7.866E+03	1.962E+04	1.072E+07	2.158E+04
2019	7.763E+03	1.164E+07	8.539E+03	2.130E+04	1.164E+07	2.343E+04
2020	8.446E+03	1.266E+07	9.290E+03	2.317E+04	1.266E+07	2.549E+04

Results (Continued)

Year	Methane			Carbon dioxide		
	(Mg/year)	*(m^3/year)*	*(short tons/year)*	*(Mg/year)*	*(m^3/year)*	*(short tons/year)*
2021	9.197E+03	1.379E+07	1.012E+04	2.523E+04	1.379E+07	2.776E+04
2022	1.001E+04	1.501E+07	1.101E+04	2.747E+04	1.501E+07	3.022E+04
2023	1.089E+04	1.632E+07	1.198E+04	2.988E+04	1.632E+07	3.286E+04
2024	1.172E+04	1.757E+07	1.289E+04	3.216E+04	1.757E+07	3.538E+04
2025	1.252E+04	1.876E+07	1.377E+04	3.434E+04	1.876E+07	3.777E+04
2026	1.327E+04	1.989E+07	1.460E+04	3.641E+04	1.989E+07	4.005E+04
2027	1.399E+04	2.097E+07	1.539E+04	3.838E+04	2.097E+07	4.222E+04
2028	1.467E+04	2.199E+07	1.614E+04	4.025E+04	2.199E+07	4.428E+04
2029	1.532E+04	2.296E+07	1.685E+04	4.203E+04	2.296E+07	4.624E+04
2030	1.594E+04	2.389E+07	1.753E+04	4.373E+04	2.389E+07	4.810E+04
2031	1.653E+04	2.477E+07	1.818E+04	4.534E+04	2.477E+07	4.987E+04
2032	1.708E+04	2.561E+07	1.879E+04	4.687E+04	2.561E+07	5.156E+04
2033	1.762E+04	2.640E+07	1.938E+04	4.833E+04	2.640E+07	5.317E+04
2034	1.812E+04	2.716E+07	1.993E+04	4.972E+04	2.716E+07	5.469E+04
2035	1.860E+04	2.788E+07	2.046E+04	5.104E+04	2.788E+07	5.614E+04
2036	1.906E+04	2.857E+07	2.097E+04	5.230E+04	2.857E+07	5.753E+04
2037	1.950E+04	2.922E+07	2.144E+04	5.349E+04	2.922E+07	5.884E+04
2038	1.991E+04	2.984E+07	2.190E+04	5.463E+04	2.984E+07	6.009E+04
2039	2.030E+04	3.043E+07	2.233E+04	5.571E+04	3.043E+07	6.128E+04
2040	2.068E+04	3.099E+07	2.275E+04	5.674E+04	3.099E+07	6.241E+04
2041	2.103E+04	3.153E+07	2.314E+04	5.771E+04	3.153E+07	6.348E+04
2042	2.137E+04	3.204E+07	2.351E+04	5.864E+04	3.204E+07	6.451E+04
2043	2.170E+04	3.252E+07	2.387E+04	5.953E+04	3.252E+07	6.548E+04
2044	2.200E+04	3.298E+07	2.420E+04	6.037E+04	3.298E+07	6.641E+04
2045	2.229E+04	3.342E+07	2.452E+04	6.117E+04	3.342E+07	6.729E+04
2046	2.257E+04	3.383E+07	2.483E+04	6.193E+04	3.383E+07	6.813E+04
2047	2.284E+04	3.423E+07	2.512E+04	6.266E+04	3.423E+07	6.892E+04
2048	2.309E+04	3.461E+07	2.540E+04	6.335E+04	3.461E+07	6.968E+04
2049	2.333E+04	3.496E+07	2.566E+04	6.400E+04	3.496E+07	7.040E+04
2050	2.355E+04	3.530E+07	2.591E+04	6.462E+04	3.530E+07	7.109E+04
2051	2.377E+04	3.563E+07	2.615E+04	6.522E+04	3.563E+07	7.174E+04
2052	2.261E+04	3.389E+07	2.487E+04	6.204E+04	3.389E+07	6.824E+04
2053	2.151E+04	3.224E+07	2.366E+04	5.901E+04	3.224E+07	6.491E+04
2054	2.046E+04	3.067E+07	2.250E+04	5.613E+04	3.067E+07	6.175E+04
2055	1.946E+04	2.917E+07	2.141E+04	5.340E+04	2.917E+07	5.874E+04
2056	1.851E+04	2.775E+07	2.036E+04	5.079E+04	2.775E+07	5.587E+04
2057	1.761E+04	2.639E+07	1.937E+04	4.831E+04	2.639E+07	5.315E+04
2058	1.675E+04	2.511E+07	1.843E+04	4.596E+04	2.511E+07	5.055E+04
2059	1.593E+04	2.388E+07	1.753E+04	4.372E+04	2.388E+07	4.809E+04
2060	1.516E+04	2.272E+07	1.667E+04	4.158E+04	2.272E+07	4.574E+04
2061	1.442E+04	2.161E+07	1.586E+04	3.956E+04	2.161E+07	4.351E+04
2062	1.371E+04	2.056E+07	1.509E+04	3.763E+04	2.056E+07	4.139E+04
2063	1.304E+04	1.955E+07	1.435E+04	3.579E+04	1.955E+07	3.937E+04
2064	1.241E+04	1.860E+07	1.365E+04	3.405E+04	1.860E+07	3.745E+04
2065	1.180E+04	1.769E+07	1.298E+04	3.239E+04	1.769E+07	3.562E+04
2066	1.123E+04	1.683E+07	1.235E+04	3.081E+04	1.683E+07	3.389E+04
2067	1.068E+04	1.601E+07	1.175E+04	2.930E+04	1.601E+07	3.223E+04
2068	1.016E+04	1.523E+07	1.118E+04	2.788E+04	1.523E+07	3.066E+04
2069	9.664E+03	1.449E+07	1.063E+04	2.652E+04	1.449E+07	2.917E+04
2070	9.193E+03	1.378E+07	1.011E+04	2.522E+04	1.378E+07	2.774E+04
2071	8.744E+03	1.311E+07	9.619E+03	2.399E+04	1.311E+07	2.639E+04

Results (Continued)

Year	Methane			Carbon dioxide		
	(Mg/year)	*(m^3/year)*	*(short tons/year)*	*(Mg/year)*	*(m^3/year)*	*(short tons/year)*
2072	8.318E+03	1.247E+07	9.150E+03	2.282E+04	1.247E+07	2.510E+04
2073	7.912E+03	1.186E+07	8.703E+03	2.171E+04	1.186E+07	2.388E+04
2074	7.526E+03	1.128E+07	8.279E+03	2.065E+04	1.128E+07	2.272E+04
2075	7.159E+03	1.073E+07	7.875E+03	1.964E+04	1.073E+07	2.161E+04
2076	6.810E+03	1.021E+07	7.491E+03	1.869E+04	1.021E+07	2.055E+04
2077	6.478E+03	9.710E+06	7.126E+03	1.777E+04	9.710E+06	1.955E+04
2078	6.162E+03	9.236E+06	6.778E+03	1.691E+04	9.236E+06	1.860E+04
2079	5.861E+03	8.786E+06	6.448E+03	1.608E+04	8.786E+06	1.769E+04
2080	5.576E+03	8.357E+06	6.133E+03	1.530E+04	8.357E+06	1.683E+04
2081	5.304E+03	7.950E+06	5.834E+03	1.455E+04	7.950E+06	1.601E+04
2082	5.045E+03	7.562E+06	5.550E+03	1.384E+04	7.562E+06	1.523E+04
2083	4.799E+03	7.193E+06	5.279E+03	1.317E+04	7.193E+06	1.448E+04
2084	4.565E+03	6.842E+06	5.021E+03	1.253E+04	6.842E+06	1.378E+04
2085	4.342E+03	6.509E+06	4.777E+03	1.191E+04	6.509E+06	1.311E+04
2086	4.131E+03	6.191E+06	4.544E+03	1.133E+04	6.191E+06	1.247E+04
2087	3.929E+03	5.889E+06	4.322E+03	1.078E+04	5.889E+06	1.186E+04
2088	3.737E+03	5.602E+06	4.111E+03	1.025E+04	5.602E+06	1.128E+04
2089	3.555E+03	5.329E+06	3.911E+03	9.755E+03	5.329E+06	1.073E+04
2090	3.382E+03	5.069E+06	3.720E+03	9.279E+03	5.069E+06	1.021E+04
2091	3.217E+03	4.822E+06	3.539E+03	8.826E+03	4.822E+06	9.709E+03
2092	3.060E+03	4.587E+06	3.366E+03	8.396E+03	4.587E+06	9.235E+03
2093	2.911E+03	4.363E+06	3.202E+03	7.986E+03	4.363E+06	8.785E+03
2094	2.769E+03	4.150E+06	3.046E+03	7.597E+03	4.150E+06	8.357E+03
2095	2.634E+03	3.948E+06	2.897E+03	7.226E+03	3.948E+06	7.949E+03
2096	2.505E+03	3.755E+06	2.756E+03	6.874E+03	3.755E+06	7.561E+03
2097	2.383E+03	3.572E+06	2.621E+03	6.539E+03	3.572E+06	7.193E+03
2098	2.267E+03	3.398E+06	2.494E+03	6.220E+03	3.398E+06	6.842E+03
2099	2.156E+03	3.232E+06	2.372E+03	5.916E+03	3.232E+06	6.508E+03
2100	2.051E+03	3.074E+06	2.256E+03	5.628E+03	3.074E+06	6.191E+03
2101	1.951E+03	2.925E+06	2.146E+03	5.353E+03	2.925E+06	5.889E+03
2102	1.856E+03	2.782E+06	2.042E+03	5.092E+03	2.782E+06	5.602E+03
2103	1.765E+03	2.646E+06	1.942E+03	4.844E+03	2.646E+06	5.328E+03
2104	1.679E+03	2.517E+06	1.847E+03	4.608E+03	2.517E+06	5.068E+03
2105	1.597E+03	2.394E+06	1.757E+03	4.383E+03	2.394E+06	4.821E+03
2106	1.520E+03	2.278E+06	1.671E+03	4.169E+03	2.278E+06	4.586E+03
2107	1.445E+03	2.167E+06	1.590E+03	3.966E+03	2.167E+06	4.362E+03
2108	1.375E+03	2.061E+06	1.512E+03	3.772E+03	2.061E+06	4.150E+03
2109	1.308E+03	1.960E+06	1.439E+03	3.588E+03	1.960E+06	3.947E+03
2110	1.244E+03	1.865E+06	1.368E+03	3.413E+03	1.865E+06	3.755E+03
2111	1.183E+03	1.774E+06	1.302E+03	3.247E+03	1.774E+06	3.572E+03

Results (Continued)

Year	NMOC			Total landfill gas		
	(Mg/year)	*(m^3/year)*	*(short tons/year)*	*(Mg/year)*	*(m^3/year)*	*(short tons/year)*
1971	0	0	0	0	0	0
1972	5.259E+00	1.467E+03	5.785E+00	4.581E+02	3.668E+05	5.039E+02
1973	1.026E+01	2.863E+03	1.129E+01	8.938E+02	7.157E+05	9.832E+02
1974	1.502E+01	4.190E+03	1.652E+01	1.308E+03	1.048E+06	1.439E+03
1975	1.692E+01	4.720E+03	1.861E+01	1.474E+03	1.180E+06	1.621E+03
1976	1.872E+01	5.223E+03	2.059E+01	1.631E+03	1.306E+06	1.794E+03
1977	2.044E+01	5.702E+03	2.248E+01	1.780E+03	1.426E+06	1.958E+03
1978	2.207E+01	6.158E+03	2.428E+01	1.922E+03	1.539E+06	2.115E+03
1979	2.362E+01	6.591E+03	2.599E+01	2.058E+03	1.648E+06	2.263E+03
1980	2.510E+01	7.003E+03	2.761E+01	2.186E+03	1.751E+06	2.405E+03
1981	2.651E+01	7.395E+03	2.916E+01	2.309E+03	1.849E+06	2.540E+03
1982	2.784E+01	7.768E+03	3.063E+01	2.425E+03	1.942E+06	2.668E+03
1983	2.912E+01	8.123E+03	3.203E+01	2.536E+03	2.031E+06	2.790E+03
1984	3.033E+01	8.460E+03	3.336E+01	2.641E+03	2.115E+06	2.905E+03
1985	3.148E+01	8.781E+03	3.462E+01	2.742E+03	2.195E+06	3.016E+03
1986	3.257E+01	9.087E+03	3.583E+01	2.837E+03	2.272E+06	3.121E+03
1987	3.361E+01	9.377E+03	3.697E+01	2.928E+03	2.344E+06	3.220E+03
1988	3.460E+01	9.653E+03	3.806E+01	3.014E+03	2.413E+06	3.315E+03
1989	3.554E+01	9.916E+03	3.910E+01	3.096E+03	2.479E+06	3.405E+03
1990	3.644E+01	1.017E+04	4.008E+01	3.174E+03	2.542E+06	3.491E+03
1991	3.971E+01	1.108E+04	4.368E+01	3.458E+03	2.769E+06	3.804E+03
1992	4.221E+01	1.178E+04	4.643E+01	3.677E+03	2.944E+06	4.044E+03
1993	4.495E+01	1.254E+04	4.944E+01	3.915E+03	3.135E+06	4.307E+03
1994	4.788E+01	1.336E+04	5.267E+01	4.170E+03	3.339E+06	4.587E+03
1995	5.182E+01	1.446E+04	5.700E+01	4.514E+03	3.614E+06	4.965E+03
1996	5.634E+01	1.572E+04	6.198E+01	4.907E+03	3.930E+06	5.398E+03
1997	6.532E+01	1.822E+04	7.185E+01	5.689E+03	4.556E+06	6.258E+03
1998	8.115E+01	2.264E+04	8.927E+01	7.068E+03	5.660E+06	7.775E+03
1999	9.781E+01	2.729E+04	1.076E+02	8.519E+03	6.822E+06	9.371E+03
2000	1.123E+02	3.133E+04	1.235E+02	9.781E+03	7.832E+06	1.076E+04
2001	1.216E+02	3.393E+04	1.338E+02	1.059E+04	8.483E+06	1.165E+04
2002	1.300E+02	3.627E+04	1.430E+02	1.132E+04	9.067E+06	1.246E+04
2003	1.363E+02	3.801E+04	1.499E+02	1.187E+04	9.504E+06	1.306E+04
2004	1.426E+02	3.977E+04	1.568E+02	1.242E+04	9.942E+06	1.366E+04
2005	1.478E+02	4.123E+04	1.625E+02	1.287E+04	1.031E+07	1.416E+04
2006	1.545E+02	4.309E+04	1.699E+02	1.345E+04	1.077E+07	1.480E+04
2007	1.663E+02	4.638E+04	1.829E+02	1.448E+04	1.160E+07	1.593E+04
2008	1.769E+02	4.935E+04	1.946E+02	1.541E+04	1.234E+07	1.695E+04
2009	1.890E+02	5.274E+04	2.079E+02	1.647E+04	1.318E+07	1.811E+04
2010	1.992E+02	5.558E+04	2.192E+02	1.735E+04	1.390E+07	1.909E+04
2011	2.094E+02	5.843E+04	2.304E+02	1.824E+04	1.461E+07	2.006E+04
2012	2.188E+02	6.103E+04	2.406E+02	1.905E+04	1.526E+07	2.096E+04
2013	2.277E+02	6.351E+04	2.504E+02	1.983E+04	1.588E+07	2.181E+04
2014	2.361E+02	6.587E+04	2.597E+02	2.056E+04	1.647E+07	2.262E+04
2015	2.485E+02	6.932E+04	2.733E+02	2.164E+04	1.733E+07	2.381E+04
2016	2.646E+02	7.382E+04	2.911E+02	2.305E+04	1.846E+07	2.535E+04
2017	2.843E+02	7.932E+04	3.127E+02	2.476E+04	1.983E+07	2.724E+04
2018	3.074E+02	8.575E+04	3.381E+02	2.677E+04	2.144E+07	2.945E+04
2019	3.337E+02	9.309E+04	3.670E+02	2.906E+04	2.327E+07	3.197E+04
2020	3.630E+02	1.013E+05	3.993E+02	3.162E+04	2.532E+07	3.478E+04

Results (Continued)

Year	NMOC			Total landfill gas		
	(Mg/year)	*(m^3/year)*	*(short tons/year)*	*(Mg/year)*	*(m^3/year)*	*(short tons/year)*
2021	3.953E+02	1.103E+05	4.348E+02	3.443E+04	2.757E+07	3.787E+04
2022	4.303E+02	1.201E+05	4.734E+02	3.748E+04	3.001E+07	4.123E+04
2023	4.680E+02	1.306E+05	5.148E+02	4.076E+04	3.264E+07	4.484E+04
2024	5.039E+02	1.406E+05	5.542E+02	4.389E+04	3.514E+07	4.827E+04
2025	5.379E+02	1.501E+05	5.917E+02	4.686E+04	3.752E+07	5.154E+04
2026	5.704E+02	1.591E+05	6.274E+02	4.968E+04	3.978E+07	5.465E+04
2027	6.012E+02	1.677E+05	6.613E+02	5.237E+04	4.193E+07	5.760E+04
2028	6.306E+02	1.759E+05	6.936E+02	5.492E+04	4.398E+07	6.041E+04
2029	6.585E+02	1.837E+05	7.243E+02	5.735E+04	4.593E+07	6.309E+04
2030	6.850E+02	1.911E+05	7.535E+02	5.967E+04	4.778E+07	6.563E+04
2031	7.103E+02	1.982E+05	7.813E+02	6.187E+04	4.954E+07	6.805E+04
2032	7.343E+02	2.049E+05	8.077E+02	6.396E+04	5.121E+07	7.035E+04
2033	7.572E+02	2.112E+05	8.329E+02	6.595E+04	5.281E+07	7.254E+04
2034	7.789E+02	2.173E+05	8.568E+02	6.784E+04	5.432E+07	7.463E+04
2035	7.996E+02	2.231E+05	8.795E+02	6.964E+04	5.577E+07	7.661E+04
2036	8.192E+02	2.286E+05	9.012E+02	7.136E+04	5.714E+07	7.849E+04
2037	8.380E+02	2.338E+05	9.218E+02	7.299E+04	5.844E+07	8.028E+04
2038	8.558E+02	2.387E+05	9.413E+02	7.454E+04	5.969E+07	8.199E+04
2039	8.727E+02	2.435E+05	9.600E+02	7.601E+04	6.087E+07	8.361E+04
2040	8.888E+02	2.480E+05	9.777E+02	7.741E+04	6.199E+07	8.515E+04
2041	9.041E+02	2.522E+05	9.945E+02	7.875E+04	6.306E+07	8.662E+04
2042	9.187E+02	2.563E+05	1.011E+03	8.002E+04	6.407E+07	8.802E+04
2043	9.325E+02	2.602E+05	1.026E+03	8.122E+04	6.504E+07	8.935E+04
2044	9.457E+02	2.638E+05	1.040E+03	8.237E+04	6.596E+07	9.061E+04
2045	9.583E+02	2.673E+05	1.054E+03	8.346E+04	6.683E+07	9.181E+04
2046	9.702E+02	2.707E+05	1.067E+03	8.450E+04	6.767E+07	9.295E+04
2047	9.815E+02	2.738E+05	1.080E+03	8.549E+04	6.846E+07	9.404E+04
2048	9.923E+02	2.768E+05	1.092E+03	8.643E+04	6.921E+07	9.508E+04
2049	1.003E+03	2.797E+05	1.103E+03	8.733E+04	6.993E+07	9.606E+04
2050	1.012E+03	2.824E+05	1.114E+03	8.818E+04	7.061E+07	9.700E+04
2051	1.022E+03	2.850E+05	1.124E+03	8.899E+04	7.126E+07	9.789E+04
2052	9.718E+02	2.711E+05	1.069E+03	8.465E+04	6.778E+07	9.311E+04
2053	9.244E+02	2.579E+05	1.017E+03	8.052E+04	6.448E+07	8.857E+04
2054	8.794E+02	2.453E+05	9.673E+02	7.659E+04	6.133E+07	8.425E+04
2055	8.365E+02	2.334E+05	9.201E+02	7.286E+04	5.834E+07	8.014E+04
2056	7.957E+02	2.220E+05	8.752E+02	6.930E+04	5.549E+07	7.623E+04
2057	7.569E+02	2.112E+05	8.326E+02	6.592E+04	5.279E+07	7.252E+04
2058	7.200E+02	2.009E+05	7.920E+02	6.271E+04	5.021E+07	6.898E+04
2059	6.848E+02	1.911E+05	7.533E+02	5.965E+04	4.776E+07	6.561E+04
2060	6.514E+02	1.817E+05	7.166E+02	5.674E+04	4.544E+07	6.241E+04
2061	6.197E+02	1.729E+05	6.816E+02	5.397E+04	4.322E+07	5.937E+04
2062	5.895E+02	1.644E+05	6.484E+02	5.134E+04	4.111E+07	5.648E+04
2063	5.607E+02	1.564E+05	6.168E+02	4.884E+04	3.911E+07	5.372E+04
2064	5.334E+02	1.488E+05	5.867E+02	4.646E+04	3.720E+07	5.110E+04
2065	5.073E+02	1.415E+05	5.581E+02	4.419E+04	3.539E+07	4.861E+04
2066	4.826E+02	1.346E+05	5.309E+02	4.203E+04	3.366E+07	4.624E+04
2067	4.591E+02	1.281E+05	5.050E+02	3.998E+04	3.202E+07	4.398E+04
2068	4.367E+02	1.218E+05	4.803E+02	3.803E+04	3.046E+07	4.184E+04
2069	4.154E+02	1.159E+05	4.569E+02	3.618E+04	2.897E+07	3.980E+04
2070	3.951E+02	1.102E+05	4.346E+02	3.441E+04	2.756E+07	3.786E+04
2071	3.759E+02	1.049E+05	4.134E+02	3.274E+04	2.621E+07	3.601E+04

Results (Continued)

Year	NMOC			Total landfill gas		
	(Mg/year)	*(m^3/year)*	*(short tons/year)*	*(Mg/year)*	*(m^3/year)*	*(short tons/year)*
2072	3.575E+02	9.974E+04	3.933E+02	3.114E+04	2.494E+07	3.425E+04
2073	3.401E+02	9.488E+04	3.741E+02	2.962E+04	2.372E+07	3.258E+04
2074	3.235E+02	9.025E+04	3.558E+02	2.818E+04	2.256E+07	3.099E+04
2075	3.077E+02	8.585E+04	3.385E+02	2.680E+04	2.146E+07	2.948E+04
2076	2.927E+02	8.166E+04	3.220E+02	2.550E+04	2.042E+07	2.804E+04
2077	2.784E+02	7.768E+04	3.063E+02	2.425E+04	1.942E+07	2.668E+04
2078	2.649E+02	7.389E+04	2.913E+02	2.307E+04	1.847E+07	2.538E+04
2079	2.519E+02	7.029E+04	2.771E+02	2.194E+04	1.757E+07	2.414E+04
2080	2.397E+02	6.686E+04	2.636E+02	2.087E+04	1.671E+07	2.296E+04
2081	2.280E+02	6.360E+04	2.508E+02	1.986E+04	1.590E+07	2.184E+04
2082	2.168E+02	6.050E+04	2.385E+02	1.889E+04	1.512E+07	2.078E+04
2083	2.063E+02	5.755E+04	2.269E+02	1.797E+04	1.439E+07	1.976E+04
2084	1.962E+02	5.474E+04	2.158E+02	1.709E+04	1.368E+07	1.880E+04
2085	1.866E+02	5.207E+04	2.053E+02	1.626E+04	1.302E+07	1.788E+04
2086	1.775E+02	4.953E+04	1.953E+02	1.546E+04	1.238E+07	1.701E+04
2087	1.689E+02	4.711E+04	1.858E+02	1.471E+04	1.178E+07	1.618E+04
2088	1.606E+02	4.482E+04	1.767E+02	1.399E+04	1.120E+07	1.539E+04
2089	1.528E+02	4.263E+04	1.681E+02	1.331E+04	1.066E+07	1.464E+04
2090	1.454E+02	4.055E+04	1.599E+02	1.266E+04	1.014E+07	1.393E+04
2091	1.383E+02	3.857E+04	1.521E+02	1.204E+04	9.644E+06	1.325E+04
2092	1.315E+02	3.669E+04	1.447E+02	1.146E+04	9.173E+06	1.260E+04
2093	1.251E+02	3.490E+04	1.376E+02	1.090E+04	8.726E+06	1.199E+04
2094	1.190E+02	3.320E+04	1.309E+02	1.037E+04	8.300E+06	1.140E+04
2095	1.132E+02	3.158E+04	1.245E+02	9.860E+03	7.895E+06	1.085E+04
2096	1.077E+02	3.004E+04	1.185E+02	9.379E+03	7.510E+06	1.032E+04
2097	1.024E+02	2.858E+04	1.127E+02	8.922E+03	7.144E+06	9.814E+03
2098	9.744E+01	2.718E+04	1.072E+02	8.487E+03	6.796E+06	9.335E+03
2099	9.268E+01	2.586E+04	1.020E+02	8.073E+03	6.464E+06	8.880E+03
2100	8.816E+01	2.460E+04	9.698E+01	7.679E+03	6.149E+06	8.447E+03
2101	8.386E+01	2.340E+04	9.225E+01	7.305E+03	5.849E+06	8.035E+03
2102	7.977E+01	2.226E+04	8.775E+01	6.948E+03	5.564E+06	7.643E+03
2103	7.588E+01	2.117E+04	8.347E+01	6.609E+03	5.292E+06	7.270E+03
2104	7.218E+01	2.014E+04	7.940E+01	6.287E+03	5.034E+06	6.916E+03
2105	6.866E+01	1.916E+04	7.553E+01	5.980E+03	4.789E+06	6.578E+03
2106	6.531E+01	1.822E+04	7.184E+01	5.689E+03	4.555E+06	6.258E+03
2107	6.213E+01	1.733E+04	6.834E+01	5.411E+03	4.333E+06	5.952E+03
2108	5.910E+01	1.649E+04	6.501E+01	5.147E+03	4.122E+06	5.662E+03
2109	5.622E+01	1.568E+04	6.184E+01	4.896E+03	3.921E+06	5.386E+03
2110	5.347E+01	1.492E+04	5.882E+01	4.658E+03	3.730E+06	5.123E+03
2111	5.087E+01	1.419E+04	5.595E+01	4.430E+03	3.548E+06	4.873E+03

CalEEMod Model Output File
On-Site Landfill Equipment
Annual Emissions

John Smith Road Landfill Equipment

San Benito County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Statewide Average
Climate Zone	4	**Precipitation Freq (Days)**	48		

1.3 User Entered Comments

Project Characteristics -

Land Use - Ignore. This file is for landfill (construction) equipment only.

Construction Phase - A single phase created for landfill (construction) equipment.

Off-road Equipment - Equipment set is specific to landfill operations.

Grading - Ignore. This file is for landfill (construction) equipment only.

Trips and VMT - Ignore. This file is for landfill (construction) equipment only.

Vehicle Trips - Ignore. This file is for landfill (construction) equipment only.

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					
2013	0.67	5.55	2.66	0.01	1.02	0.23	1.25	0.56	0.23	0.79	0.00	571.59	571.59	0.05	0.00	572.73
Total	**0.67**	**5.55**	**2.66**	**0.01**	**1.02**	**0.23**	**1.25**	**0.56**	**0.23**	**0.79**	**0.00**	**571.59**	**571.59**	**0.05**	**0.00**	**572.73**

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					
2013	0.67	5.55	2.66	0.01	1.02	0.23	1.25	0.56	0.23	0.79	0.00	571.59	571.59	0.05	0.00	572.73
Total	**0.67**	**5.55**	**2.66**	**0.01**	**1.02**	**0.23**	**1.25**	**0.56**	**0.23**	**0.79**	**0.00**	**571.59**	**571.59**	**0.05**	**0.00**	**572.73**

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	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
Energy	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
Mobile	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
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**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

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	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
Energy	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
Mobile	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
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**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**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Grading - 2013

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					
Fugitive Dust					1.02	0.00	1.02	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.67	5.55	2.66	0.01		0.23	0.23		0.23	0.23	0.00	571.57	571.57	0.05	0.00	572.70
Total	**0.67**	**5.55**	**2.66**	**0.01**	**1.02**	**0.23**	**1.25**	**0.56**	**0.23**	**0.79**	**0.00**	**571.57**	**571.57**	**0.05**	**0.00**	**572.70**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.03
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.03**	**0.00**	**0.00**	**0.03**

3.2 Grading - 2013

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					
Fugitive Dust					1.02	0.00	1.02	0.56	0.00	0.56	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	0.67	5.55	2.66	0.01		0.23	0.23		0.23	0.23	0.00	571.57	571.57	0.05	0.00	572.70
Total	**0.67**	**5.55**	**2.66**	**0.01**	**1.02**	**0.23**	**1.25**	**0.56**	**0.23**	**0.79**	**0.00**	**571.57**	**571.57**	**0.05**	**0.00**	**572.70**

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	0.00	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
Vendor	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
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.03	0.00	0.00	0.03
Total	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.03**	**0.03**	**0.00**	**0.00**	**0.03**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

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	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

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

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	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

CalEEMod Model Output File
On-Site Landfill Equipment
Daily Emissions

John Smith Road Landfill Equipment

San Benito County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	1	User Defined Unit

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s) 2.2

Utility Company Statewide Average

Climate Zone 4

Precipitation Freq (Days) 48

1.3 User Entered Comments

Project Characteristics -

Land Use - Ignore. This file is for landfill (construction) equipment only.

Construction Phase - A single phase created for landfill (construction) equipment.

Off-road Equipment - Equipment set is specific to landfill operations.

Grading - Ignore. This file is for landfill (construction) equipment only.

Trips and VMT - Ignore. This file is for landfill (construction) equipment only.

Vehicle Trips - Ignore. This file is for landfill (construction) equipment only.

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					
2013	3.65	30.42	14.58	0.03	5.59	1.25	6.85	3.07	1.25	4.33	0.00	3,453.40	0.00	0.33	0.00	3,460.27
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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					
2013	3.65	30.42	14.58	0.03	5.59	1.25	6.85	3.07	1.25	4.33	0.00	3,453.40	0.00	0.33	0.00	3,460.27
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**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**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	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
Total	**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**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Grading - 2013

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					
Fugitive Dust					5.59	0.00	5.59	3.07	0.00	3.07						0.00
Off-Road	3.65	30.42	14.57	0.03		1.25	1.25		1.25	1.25		3,453.24		0.33		3,460.10
Total	**3.65**	**30.42**	**14.57**	**0.03**	**5.59**	**1.25**	**6.84**	**3.07**	**1.25**	**4.32**		**3,453.24**		**0.33**		**3,460.10**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.17		0.00		0.17
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.17**		**0.00**		**0.17**

3.2 Grading - 2013

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					
Fugitive Dust					5.59	0.00	5.59	3.07	0.00	3.07						0.00
Off-Road	3.65	30.42	14.57	0.03		1.25	1.25		1.25	1.25	0.00	3,453.24		0.33		3,460.10
Total	**3.65**	**30.42**	**14.57**	**0.03**	**5.59**	**1.25**	**6.84**	**3.07**	**1.25**	**4.32**	**0.00**	**3,453.24**		**0.33**		**3,460.10**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.17		0.00		0.17
Total	**0.00**	**0.00**	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.17**		**0.00**		**0.17**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	0.00	0.00	0.00	0.00	0.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
Without John Smith Road Landfill Expansion Project
San Benito County to Marina and Gonzales
Annual Emissions

Hauling San Benito to Marina/Gonzales (No Project)

San Benito County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	299	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Statewide Average
Climate Zone	4	**Precipitation Freq (Days)**	48		

1.3 User Entered Comments

Project Characteristics - This file is only for hauling of waste material. Not for construction.

Land Use - Units are the number of loads hauled.

Construction Phase - Ignore. This file is only for hauling of waste material. Not for construction.

Off-road Equipment - Ignore. This file is only for hauling of waste material. Not for construction.

Trips and VMT - Ignore. This file is only for hauling of waste material. Not for construction.

Vehicle Trips - Trip length is specific for San Benito County sources waste hauled to Marina and Gonzales.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Energy Use -

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					
2011	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
Total	**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**

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					
2011	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
Total	**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	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
Energy	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
Mobile	0.83	1.91	8.09	0.04	3.89	0.22	4.11	0.06	0.21	0.28	0.00	2,987.26	2,987.26	0.07	0.00	2,988.64
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.83**	**1.91**	**8.09**	**0.04**	**3.89**	**0.22**	**4.11**	**0.06**	**0.21**	**0.28**	**0.00**	**2,987.26**	**2,987.26**	**0.07**	**0.00**	**2,988.64**

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	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
Energy	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
Mobile	0.83	1.91	8.09	0.04	3.89	0.22	4.11	0.06	0.21	0.28	0.00	2,987.26	2,987.26	0.07	0.00	2,988.64
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.83**	**1.91**	**8.09**	**0.04**	**3.89**	**0.22**	**4.11**	**0.06**	**0.21**	**0.28**	**0.00**	**2,987.26**	**2,987.26**	**0.07**	**0.00**	**2,988.64**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	0.83	1.91	8.09	0.04	3.89	0.22	4.11	0.06	0.21	0.28	0.00	2,987.26	2,987.26	0.07	0.00	2,988.64
Unmitigated	0.83	1.91	8.09	0.04	3.89	0.22	4.11	0.06	0.21	0.28	0.00	2,987.26	2,987.26	0.07	0.00	2,988.64
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	299.00	299.00	299.00	7,618,520	7,618,520
Total	299.00	299.00	299.00	7,618,520	7,618,520

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	70.00	70.00	70.00	0.00	100.00	0.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

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	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

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

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	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
Without John Smith Road Landfill Expansion Project
San Benito County to Marina and Gonzales
Daily Emissions

Hauling San Benito to Marina/Gonzales (No Project)

San Benito County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	299	User Defined Unit

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s) 2.2

Utility Company Statewide Average

Climate Zone 4

Precipitation Freq (Days) 48

1.3 User Entered Comments

Project Characteristics - This file is only for hauling of waste material. Not for construction.

Land Use - Units are the number of loads hauled.

Construction Phase - Ignore. This file is only for hauling of waste material. Not for construction.

Off-road Equipment - Ignore. This file is only for hauling of waste material. Not for construction.

Trips and VMT - Ignore. This file is only for hauling of waste material. Not for construction.

Vehicle Trips - Trip length is specific for San Benito County sources waste hauled to Marina and Gonzales.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Energy Use -

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					
2011	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.53
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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					
2011	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.53
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

2.2 Overall Operational

<u>Unmitigated Operational</u>

	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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	4.62	10.45	50.60	0.24	25.19	1.22	26.41	0.35	1.17	1.51		19,365.03		0.42		19,373.75
Total	**4.62**	**10.45**	**50.60**	**0.24**	**25.19**	**1.22**	**26.41**	**0.35**	**1.17**	**1.51**		**19,365.03**		**0.42**	**0.00**	**19,373.75**

<u>Mitigated Operational</u>

	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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	4.62	10.45	50.60	0.24	25.19	1.22	26.41	0.35	1.17	1.51		19,365.03		0.42		19,373.75
Total	**4.62**	**10.45**	**50.60**	**0.24**	**25.19**	**1.22**	**26.41**	**0.35**	**1.17**	**1.51**		**19,365.03**		**0.42**	**0.00**	**19,373.75**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.53		0.00		0.53
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.53**		**0.00**		**0.53**

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.53		0.00		0.53
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.53**		**0.00**		**0.53**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	4.62	10.45	50.60	0.24	25.19	1.22	26.41	0.35	1.17	1.51		19,365.03		0.42		19,373.75
Unmitigated	4.62	10.45	50.60	0.24	25.19	1.22	26.41	0.35	1.17	1.51		19,365.03		0.42		19,373.75
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	299.00	299.00	299.00	7,618,520	7,618,520
Total	299.00	299.00	299.00	7,618,520	7,618,520

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	70.00	70.00	70.00	0.00	100.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
Without John Smith Road Landfill Expansion Project
San Francisco Bay Area to Altamont
Annual Emissions

Hauling Bay Area to Altamont (No Project)

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	25	User Defined Unit

1.2 Other Project Characteristics

Urbanization Urban
Wind Speed (m/s) 2.2
Utility Company Statewide Average

Climate Zone 4
Precipitation Freq (Days) 63

1.3 User Entered Comments

Project Characteristics - This file is only for hauling of waste material. Not for construction.

Land Use - Units are the number of loads hauled.

Construction Phase - Ignore. This file is only for hauling of waste material. Not for construction.

Off-road Equipment - Ignore. This file is only for hauling of waste material. Not for construction.

Trips and VMT - Ignore. This file is only for hauling of waste material. Not for construction.

Vehicle Trips - Trip length is specific for Bay Area sources waste hauled to Altamont.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Energy Use -

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					
2011	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
Total	**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**

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					
2011	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
Total	**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	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
Energy	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
Mobile	0.24	2.31	1.37	0.01	0.38	0.07	0.45	0.02	0.06	0.08	0.00	1,204.62	1,204.62	0.01	0.00	1,204.79
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.24**	**2.31**	**1.37**	**0.01**	**0.38**	**0.07**	**0.45**	**0.02**	**0.06**	**0.08**	**0.00**	**1,204.62**	**1,204.62**	**0.01**	**0.00**	**1,204.79**

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	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
Energy	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
Mobile	0.24	2.31	1.37	0.01	0.38	0.07	0.45	0.02	0.06	0.08	0.00	1,204.62	1,204.62	0.01	0.00	1,204.79
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.24**	**2.31**	**1.37**	**0.01**	**0.38**	**0.07**	**0.45**	**0.02**	**0.06**	**0.08**	**0.00**	**1,204.62**	**1,204.62**	**0.01**	**0.00**	**1,204.79**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	0.24	2.31	1.37	0.01	0.38	0.07	0.45	0.02	0.06	0.08	0.00	1,204.62	1,204.62	0.01	0.00	1,204.79
Unmitigated	0.24	2.31	1.37	0.01	0.38	0.07	0.45	0.02	0.06	0.08	0.00	1,204.62	1,204.62	0.01	0.00	1,204.79
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	25.00	25.00	25.00	728,000	728,000
Total	25.00	25.00	25.00	728,000	728,000

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	80.00	80.00	80.00	0.00	100.00	0.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

<u>Mitigated</u>

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

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	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

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

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	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
Without John Smith Road Landfill Expansion Project
San Francisco Bay Area to Altamont
Daily Emissions

Hauling Bay Area to Altamont (No Project)

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	25	User Defined Unit

1.2 Other Project Characteristics

Urbanization Urban **Wind Speed (m/s)** 2.2 **Utility Company** Statewide Average

Climate Zone 4 **Precipitation Freq (Days)** 63

1.3 User Entered Comments

Project Characteristics - This file is only for hauling of waste material. Not for construction.

Land Use - Units are the number of loads hauled.

Construction Phase - Ignore. This file is only for hauling of waste material. Not for construction.

Off-road Equipment - Ignore. This file is only for hauling of waste material. Not for construction.

Trips and VMT - Ignore. This file is only for hauling of waste material. Not for construction.

Vehicle Trips - Trip length is specific for Bay Area sources waste hauled to Altamont.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Energy Use -

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					
2011	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.54
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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					
2011	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.54
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	1.29	12.98	7.20	0.04	2.55	0.40	2.95	0.08	0.35	0.44		7,304.07		0.05		7,305.11
Total	**1.29**	**12.98**	**7.20**	**0.04**	**2.55**	**0.40**	**2.95**	**0.08**	**0.35**	**0.44**		**7,304.07**		**0.05**	**0.00**	**7,305.11**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	1.29	12.98	7.20	0.04	2.55	0.40	2.95	0.08	0.35	0.44		7,304.07		0.05		7,305.11
Total	**1.29**	**12.98**	**7.20**	**0.04**	**2.55**	**0.40**	**2.95**	**0.08**	**0.35**	**0.44**		**7,304.07**		**0.05**	**0.00**	**7,305.11**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.53		0.00		0.54
Total	**0.01**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.53**		**0.00**		**0.54**

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.53		0.00		0.54
Total	**0.01**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.53**		**0.00**		**0.54**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	1.29	12.98	7.20	0.04	2.55	0.40	2.95	0.08	0.35	0.44		7,304.07		0.05		7,305.11
Unmitigated	1.29	12.98	7.20	0.04	2.55	0.40	2.95	0.08	0.35	0.44		7,304.07		0.05		7,305.11
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	25.00	25.00	25.00	728,000	728,000
Total	25.00	25.00	25.00	728,000	728,000

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	80.00	80.00	80.00	0.00	100.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

<u>Unmitigated</u>

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
	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

<u>Mitigated</u>

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
	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
With John Smith Road Landfill Expansion Project
San Benito County to John Smith Road Landfill
Annual Emissions

Hauling San Benito to JSR Landfill (Project)

San Benito County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	299	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Statewide Average
Climate Zone	4	**Precipitation Freq (Days)**	48		

1.3 User Entered Comments

Project Characteristics - This file is only for hauling of waste material. Not for construction.

Land Use - Units are the number of loads hauled.

Construction Phase - Ignore. This file is only for hauling of waste material. Not for construction.

Off-road Equipment - Ignore. This file is only for hauling of waste material. Not for construction.

Trips and VMT - Ignore. This file is only for hauling of waste material. Not for construction.

Vehicle Trips - Trip length is specific for San Benito County sources waste hauled to JSR Landfill.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Energy Use -

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					
2011	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
Total	**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**

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					
2011	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
Total	**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

<u>Unmitigated Operational</u>

	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	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
Energy	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
Mobile	0.27	0.56	2.52	0.01	1.11	0.06	1.17	0.02	0.06	0.08	0.00	857.84	857.84	0.02	0.00	858.25
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.27**	**0.56**	**2.52**	**0.01**	**1.11**	**0.06**	**1.17**	**0.02**	**0.06**	**0.08**	**0.00**	**857.84**	**857.84**	**0.02**	**0.00**	**858.25**

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	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
Energy	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
Mobile	0.27	0.56	2.52	0.01	1.11	0.06	1.17	0.02	0.06	0.08	0.00	857.84	857.84	0.02	0.00	858.25
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.27**	**0.56**	**2.52**	**0.01**	**1.11**	**0.06**	**1.17**	**0.02**	**0.06**	**0.08**	**0.00**	**857.84**	**857.84**	**0.02**	**0.00**	**858.25**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	0.27	0.56	2.52	0.01	1.11	0.06	1.17	0.02	0.06	0.08	0.00	857.84	857.84	0.02	0.00	858.25
Unmitigated	0.27	0.56	2.52	0.01	1.11	0.06	1.17	0.02	0.06	0.08	0.00	857.84	857.84	0.02	0.00	858.25
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	299.00	299.00	299.00	2,176,720	2,176,720
Total	299.00	299.00	299.00	2,176,720	2,176,720

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	20.00	20.00	20.00	0.00	100.00	0.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

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	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

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

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	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
With John Smith Road Landfill Expansion Project
San Benito County to John Smith Road Landfill
Daily Emissions

Hauling San Benito to JSR Landfill (Project)

San Benito County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	299	User Defined Unit

1.2 Other Project Characteristics

Urbanization Urban

Wind Speed (m/s) 2.2

Utility Company Statewide Average

Climate Zone 4

Precipitation Freq (Days) 48

1.3 User Entered Comments

Project Characteristics - This file is only for hauling of waste material. Not for construction.

Land Use - Units are the number of loads hauled.

Construction Phase - Ignore. This file is only for hauling of waste material. Not for construction.

Off-road Equipment - Ignore. This file is only for hauling of waste material. Not for construction.

Trips and VMT - Ignore. This file is only for hauling of waste material. Not for construction.

Vehicle Trips - Trip length is specific for San Benito County sources waste hauled to JSR Landfill.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Energy Use -

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					
2011	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.53
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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					
2011	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.53
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	1.51	3.07	15.17	0.07	7.20	0.35	7.55	0.10	0.34	0.44		5,559.16		0.12		5,561.71
Total	**1.51**	**3.07**	**15.17**	**0.07**	**7.20**	**0.35**	**7.55**	**0.10**	**0.34**	**0.44**		**5,559.16**		**0.12**	**0.00**	**5,561.71**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	1.51	3.07	15.17	0.07	7.20	0.35	7.55	0.10	0.34	0.44		5,559.16		0.12		5,561.71
Total	**1.51**	**3.07**	**15.17**	**0.07**	**7.20**	**0.35**	**7.55**	**0.10**	**0.34**	**0.44**		**5,559.16**		**0.12**	**0.00**	**5,561.71**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.53		0.00		0.53
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.53**		**0.00**		**0.53**

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.01	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.53		0.00		0.53
Total	**0.01**	**0.00**	**0.04**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.53**		**0.00**		**0.53**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	1.51	3.07	15.17	0.07	7.20	0.35	7.55	0.10	0.34	0.44		5,559.16		0.12		5,561.71
Unmitigated	1.51	3.07	15.17	0.07	7.20	0.35	7.55	0.10	0.34	0.44		5,559.16		0.12		5,561.71
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	299.00	299.00	299.00	2,176,720	2,176,720
Total	299.00	299.00	299.00	2,176,720	2,176,720

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	20.00	20.00	20.00	0.00	100.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
With John Smith Road Landfill Expansion Project
San Francisco Bay Area to John Smith Road Landfill
Annual Emissions

Hauling Bay Area to JSR Landfill (Project)

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	25	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Statewide Average
Climate Zone	4	**Precipitation Freq (Days)**	63		

1.3 User Entered Comments

Project Characteristics - This file is only for hauling of waste material. Not for construction.

Land Use - Units are the number of loads hauled.

Construction Phase - Ignore. This file is only for hauling of waste material. Not for construction.

Off-road Equipment - Ignore. This file is only for hauling of waste material. Not for construction.

Trips and VMT - Ignore. This file is only for hauling of waste material. Not for construction.

Vehicle Trips - Trip length is specific for Bay Area sources waste hauled to John Smith Road Landfill.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Energy Use -

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					
2011	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
Total	**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**

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					
2011	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
Total	**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	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
Energy	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
Mobile	0.42	4.03	2.38	0.02	0.70	0.14	0.84	0.03	0.12	0.15	0.00	2,245.79	2,245.79	0.01	0.00	2,246.10
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.42**	**4.03**	**2.38**	**0.02**	**0.70**	**0.14**	**0.84**	**0.03**	**0.12**	**0.15**	**0.00**	**2,245.79**	**2,245.79**	**0.01**	**0.00**	**2,246.10**

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	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
Energy	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
Mobile	0.42	4.03	2.38	0.02	0.70	0.14	0.84	0.03	0.12	0.15	0.00	2,245.79	2,245.79	0.01	0.00	2,246.10
Waste						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.42**	**4.03**	**2.38**	**0.02**	**0.70**	**0.14**	**0.84**	**0.03**	**0.12**	**0.15**	**0.00**	**2,245.79**	**2,245.79**	**0.01**	**0.00**	**2,246.10**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Off-Road	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
Total	**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**

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	0.00	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
Vendor	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
Worker	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
Total	**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**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

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	0.42	4.03	2.38	0.02	0.70	0.14	0.84	0.03	0.12	0.15	0.00	2,245.79	2,245.79	0.01	0.00	2,246.10
Unmitigated	0.42	4.03	2.38	0.02	0.70	0.14	0.84	0.03	0.12	0.15	0.00	2,245.79	2,245.79	0.01	0.00	2,246.10
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	25.00	25.00	25.00	1,365,000	1,365,000
Total	25.00	25.00	25.00	1,365,000	1,365,000

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	150.00	150.00	150.00	0.00	100.00	0.00

5.0 Energy Detail

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						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity Unmitigated						0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NaturalGas Mitigated	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
NaturalGas Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

<u>Unmitigated</u>

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

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	tons/yr										MT/yr					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total		**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**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	kWh	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

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	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
Unmitigated	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
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

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

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	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	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
Total	**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**

7.0 Water Detail

7.1 Mitigation Measures Water

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr				MT/yr			
User Defined Industrial	0 / 0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
	tons/yr				MT/yr			
Mitigated					0.00	0.00	0.00	0.00
Unmitigated					0.00	0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

Mitigated

	Waste Disposed	ROG	NOx	CO	SO2	Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr				MT/yr			
User Defined Industrial	0					0.00	0.00	0.00	0.00
Total						**0.00**	**0.00**	**0.00**	**0.00**

9.0 Vegetation

CalEEMod Model Output File
Waste Hauling Vehicle Emissions
With John Smith Road Landfill Expansion Project
San Francisco Bay Area to John Smith Road Landfill
Daily Emissions

Hauling Bay Area to JSR Landfill (Project)

Alameda County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric
User Defined Industrial	25	User Defined Unit

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Utility Company**	Statewide Average
Climate Zone	4	**Precipitation Freq (Days)**	63		

1.3 User Entered Comments

Project Characteristics - This file is only for hauling of waste material. Not for construction.

Land Use - Units are the number of loads hauled.

Construction Phase - Ignore. This file is only for hauling of waste material. Not for construction.

Off-road Equipment - Ignore. This file is only for hauling of waste material. Not for construction.

Trips and VMT - Ignore. This file is only for hauling of waste material. Not for construction.

Vehicle Trips - Trip length is specific for Bay Area sources waste hauled to John Smith Road Landfill.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Vechicle Emission Factors - Vehicle mix is specific to hauling fleet.

Energy Use -

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					
2011	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.54
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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					
2011	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.00	0.00	0.54
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	2.31	22.62	12.83	0.08	4.78	0.75	5.52	0.16	0.66	0.82		13,611.83		0.09		13,613.68
Total	**2.31**	**22.62**	**12.83**	**0.08**	**4.78**	**0.75**	**5.52**	**0.16**	**0.66**	**0.82**		**13,611.83**		**0.09**	**0.00**	**13,613.68**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Energy	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Mobile	2.31	22.62	12.83	0.08	4.78	0.75	5.52	0.16	0.66	0.82		13,611.83		0.09		13,613.68
Total	**2.31**	**22.62**	**12.83**	**0.08**	**4.78**	**0.75**	**5.52**	**0.16**	**0.66**	**0.82**		**13,611.83**		**0.09**	**0.00**	**13,613.68**

3.0 Construction Detail

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.53		0.00		0.54
Total	**0.01**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.53**		**0.00**		**0.54**

3.2 Site Preparation - 2011

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					
Fugitive Dust					0.00	0.00	0.00	0.00	0.00	0.00						0.00
Off-Road	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00	0.00	0.00		0.00		0.00
Total	**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**

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00		0.00
Vendor	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
Worker	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.53		0.00		0.54
Total	**0.01**	**0.00**	**0.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**		**0.53**		**0.00**		**0.54**

4.0 Mobile Detail

4.1 Mitigation Measures Mobile

	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	2.31	22.62	12.83	0.08	4.78	0.75	5.52	0.16	0.66	0.82		13,611.83		0.09		13,613.68
Unmitigated	2.31	22.62	12.83	0.08	4.78	0.75	5.52	0.16	0.66	0.82		13,611.83		0.09		13,613.68
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Industrial	25.00	25.00	25.00	1,365,000	1,365,000
Total	25.00	25.00	25.00	1,365,000	1,365,000

4.3 Trip Type Information

	Miles			Trip %		
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
User Defined Industrial	150.00	150.00	150.00	0.00	100.00	0.00

5.0 Energy Detail

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
NaturalGas Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	lb/day										lb/day					
User Defined Industrial	0	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00	0.00	0.00
Total		**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**	**0.00**	**0.00**

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	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Unmitigated	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**	**NA**

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

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	0.00					0.00	0.00		0.00	0.00						0.00
Consumer Products	0.00					0.00	0.00		0.00	0.00						0.00
Landscaping	0.00	0.00	0.00	0.00		0.00	0.00		0.00	0.00		0.00		0.00		0.00
Total	**0.00**	**0.00**	**0.00**	**0.00**		**0.00**	**0.00**		**0.00**	**0.00**		**0.00**		**0.00**		**0.00**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Vegetation

Appendix C

Noise Technical Data

Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Data Input Sheet

Project #: 2011-174
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	John Smith Road	Fairview to Best	952	86		14	3	8	45	50	
2	John Smith Road	Best to Landfill entrance	490	86		14	3	16	45	50	
3	John Smith Road	Landfill entrance to Santa Ana Valley	158	86		14	3	2	45	50	
4	Airline Hwy	West of Fairview	8,068	87		13	2	2	45	50	
5	Best Road	South of John Smith	420	87		13	2	1	35	50	
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2011-174
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	John Smith Road	Fairview to Best	55.2	48.8	57.5	60
2	John Smith Road	Best to Landfill entrance	51.9	45.9	57.6	59
3	John Smith Road	Landfill entrance to Santa Ana Valley	47.7	41.0	43.7	50
4	Airline Hwy	West of Fairview	64.7	56.1	60.6	67
5	Best Road	South of John Smith	48.7	41.6	43.8	51

Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Noise Contour Output

Project #: 2011-174
Description: Existing
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	John Smith Road	Fairview to Best	5	11	23	49	106
2	John Smith Road	Best to Landfill entrance	4	9	20	42	91
3	John Smith Road	Landfill entrance to Santa Ana Valley	1	2	5	10	22
4	Airline Hwy	West of Fairview	14	29	63	136	293
5	Best Road	South of John Smith	1	3	5	12	25

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2011-174
Description: Cumulative No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	John Smith Road	Fairview to Best	1,986	86		14	3	3.9	45	50	
2	John Smith Road	Best to Landfill entrance	707	86		14	3	11	45	50	
3	John Smith Road	Landfill entrance to Santa Ana Valley	191	86		14	2	2	45	50	
4	Airline Hwy	West of Fairview	25,793	87		13	2	2	45	50	
5	Best Road	South of John Smith Road	420	87		13	2	1	35	50	
6											
7											
8											
9											
10											
11											
12											
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16											
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18											
19											
20											
21											
22											
23											
24											
25											

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Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2011-174
Description: Cumulative No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	John Smith Road	Fairview to Best	58.6	52.0	57.6	62
2	John Smith Road	Best to Landfill entrance	53.8	47.5	57.6	59
3	John Smith Road	Landfill entrance to Santa Ana Valley	48.6	40.0	44.5	50
4	Airline Hwy	West of Fairview	69.7	61.2	65.7	72
5	Best Road	South of John Smith Road	48.7	41.6	43.8	51

Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2011-174
Description: Cumulative No Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	John Smith Road	Fairview to Best	6	14	30	64	139
2	John Smith Road	Best to Landfill entrance	5	10	21	46	98
3	John Smith Road	Landfill entrance to Santa Ana Valley	1	2	5	12	25
4	Airline Hwy	West of Fairview	30	64	137	295	636
5	Best Road	South of John Smith Road	1	3	5	12	25

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FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Data Input Sheet

Project #: 2011-174
Description: Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)
1	John Smith Road	Fairview to Best	2,028	88		12	3	6.8	45	50	
2	John Smith Road	Best to Landfill entrance	757	92		8	3	18	45	50	
3	John Smith Road	Landfill entrance to Santa Ana Valley	191	86		14	3	3	45	50	
4	Airline Hwy	West of Fairview	25,819	87		13	2	2	45	50	
5	Best Road	South of John Smith Road	430	87		13	2	1	35	50	
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FHWA-RD-77-108 Highway Traffic Noise Prediction Model
Predicted Levels

Project #: 2011-174
Description: Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway Name	Segment Description	Autos	Medium Trucks	Heavy Trucks	Total
1	John Smith Road	Fairview to Best	58.2	51.7	59.7	62
2	John Smith Road	Best to Landfill entrance	52.5	46.6	58.9	60
3	John Smith Road	Landfill entrance to Santa Ana Valley	48.5	41.8	46.3	51
4	Airline Hwy	West of Fairview	69.7	61.2	65.7	72
5	Best Road	South of John Smith Road	48.8	41.7	43.9	51

Appendix B

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Noise Contour Output

Project #: 2011-174
Description: Cumulative Plus Project
Ldn/CNEL: Ldn
Hard/Soft: Soft

			-------- Distances to Traffic Noise Contours --------				
Segment	Roadway Name	Segment Description	75	70	65	60	55
1	John Smith Road	Fairview to Best	7	16	34	73	157
2	John Smith Road	Best to Landfill entrance	5	11	23	50	107
3	John Smith Road	Landfill entrance to Santa Ana Valley	1	3	6	13	27
4	Airline Hwy	West of Fairview	30	64	137	296	637
5	Best Road	South of John Smith Road	1	3	6	12	26

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