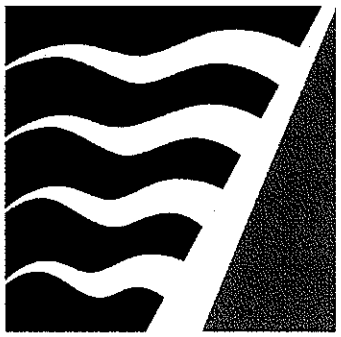

BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

CEQA INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

POTRERO HILLS ENERGY PRODUCERS LANDFILL GAS TO ENERGY PROJECT (BAAQMD PERMIT APPLICATION #23333)

POTRERO HILLS ENERGY PRODUCERS, LLC
425 SOUTH MAIN STREET, SUITE 201
ANN ARBOR, MI 48104

March 2012

Prepared by:
ENVIRON International Corp. and ARCADIS US, Inc.
on behalf of the
Bay Area Air Quality Management District (CEQA Lead Agency)
939 Ellis Street
San Francisco, CA 94109

1. **Project Title:** Potrero Hills Energy Producers (PHEP) Landfill Gas to Energy (LFGE) Project

2. **Lead Agency Contact:** Carol Allen, Bay Area Air Quality Management District, 939 Ellis Street, San Francisco, CA

3. **Project Contact:** Tom Durham, DTE Energy Services, 420 S. Main Street, Suite 201, Ann Arbor, MI 48104

4. **Project Location:** Potrero Hills Landfill (PHLF), 3675 Potrero Hills Lane, Solano County, California

5. **General Plan Designation:** Agriculture

6. **Zoning:** AL-160 Zone (Limited Agricultural District)

7. **Summary of Project:** The PHEP LFGE Project would be located at the existing PHLF, which is located at 3675 Potrero Hills Lane, Solano County, California. The purpose of the proposed LFGE project is to supply a source of renewable energy, utilizing landfill gas (LFG) as its fuel, and to provide local utilities with renewable energy that can be used to meet the State of California's mandated Renewables Portfolio Standard. The proposed LFGE project would utilize LFG produced by the decomposition of solid waste in the landfill to generate power. LFG is currently collected at the landfill and combusted using an industrial flare. The proposed LFGE project would include the installation of six Caterpillar 3520C internal combustion engine and generator sets that would burn the LFG currently combusted at the PHLF flare and produce energy. The proposed LFGE project would have a total generation capacity of 9.6 megawatts. Potrero Hills Energy Producers, LLC, the project proponent, has submitted to the Bay Area Air Quality Management District (BAAQMD) an application for an Authority to Construct and Permit to Operate for the proposed LFGE project.

8. **Surrounding Land Uses and Setting:** The proposed LFGE project is located within the boundaries of the existing PHLF site in the Spring Branch Creek Valley. The proposed LFGE project site and PHLF are bordered by rolling hills, the Suisun Marsh to the west, and several rural residences on agricultural land to the north. The landfill is within an area zoned by Solano County as Limited Agricultural District. The landfill is located within the area covered by the Suisun Marsh Protection Plan, which requires local governments to develop a local protection program. Solano County's Suisun Marsh Local Protection Program contains measures to guide development adjacent to Suisun Marsh and protect its natural resources.

9. **Other public agencies whose approval is required** (e.g., permits, financing approval, or participation agreement): Solano County, California State Water Resources Control Board, San Francisco Bay Regional Water Quality Control Board, and San Francisco Bay Conservation and Development Commission. Power line permitting requirements are to be determined in coordination with Pacific Gas and Electric Company (PG&E).

   The landfill gas to energy project was considered in a previous Environmental Impact Report (EIR), dated May 2009, (State Clearing House No. 2003032112) prepared by Solano County,

CONTENTS

FIGURES

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

ALUC	Airport Land Use Commission
APLIC	Avian Power Line Interaction Committee
AC	Authority to Construct
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BCC	birds of conservation concern
BCDC	Bay Conservation and Development Commission
bhp	brake horse power
BMP	best management practice
BO	Biological Opinion
CAAQS	California Ambient Air Quality Standards
CAPs	criteria air pollutants and precursors
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDMG	California Division of Mines and Geology
CDOGGR	California Department of Conservation, Division of Oil, Gas and Geothermal Resources
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CH_4	methane
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2	carbon dioxide

CO_{2e}	carbon dioxide equivalent
CSSC	California species of special concern
dBA	decibels, using A-weighted measurement
EIR	Environmental Impact Report
FP	fully protected
ft/sec	feet per second
gal	gallons
gwp	global warming potential
HCP	Habitat Conservation Plan
HDPE	high-density polyethylene
HMBP	Hazardous Materials Business Plan
IC	internal combustion
kV	kilovolt
LEL	Lower Explosive Limit
Leq	equivalent sound level
LFG	landfill gas
LFGE	landfill gas to energy
LPP	Local Protection Program
MBTA	Migratory Bird Treaty Act
MMRP	Mitigation, Monitoring and Reporting Program
MND	Mitigated Negative Declaration
MT/yr	metric tons per year
MW	megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards

NAHC	Native American Heritage Commission
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resources Conservation Service
NSR	New Source Review
PG&E	Pacific Gas and Electric Company
PHEP	Potrero Hills Energy Producers, LLC
PHLF	Potrero Hills Landfill
PM	particulate matter
PM_{10}	particulate matter less than 10 micrometers
$PM_{2.5}$	particulate matter less than 2.5 micrometers
PO	Permit to Operate
ROGs	reactive organic gases
rpm	revolutions per minute
RPS	Renewables Portfolio Standard
scfm	standard cubic feet per minute
SFRWQCB	San Francisco Regional Water Quality Control Board
SMPP	Suisun Marsh Protection Plan
SPCC	Spill Prevention Control and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
SR	State Route
TAC	toxic air contaminant
URBEMIS	Urban Land Use Emissions Model
U.S. EPA	United Stated Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

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POTRERO HILLS ENERGY PRODUCERS

PROJECT DESCRIPTION

Introduction
Project Objectives
Proposed Project Location and Background
Proposed Project Footprint and System Components
Proposed Project Construction
Proposed Project Operation and Maintenance

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INTRODUCTION

Potrero Hills Energy Producers, LLC (PHEP) is proposing to develop and operate a landfill gas to energy plant (LFGE plant) at the existing Potrero Hills Landfill (PHLF) facility located at 3675 Potrero Hills Lane in Solano County ("the County"), California. PHEP is a Michigan limited liability company, owned by DTE Biomass Energy (DTE Biomass). Headquartered in Ann Arbor, Michigan, DTE Biomass is a wholly owned subsidiary of DTE Energy. PHEP has contracted with Waste Connections Inc. (Waste Connections), the owner and operator of PHLF, for the sale of landfill gas (LFG) from PHLF. Waste Connections is a solid waste services company that is headquartered in Folsom, California. PHEP and Waste Connections are separate corporate entities.

The proposed LFGE project would utilize LFG produced by the decomposition of solid waste in the landfill to generate power. LFG is currently collected at PHLF and combusted using an industrial flare. Flaring is a high-temperature oxidation process used to burn combustible components, mostly hydrocarbons (such as methane), of waste gases from industrial operations. In combustion, gaseous hydrocarbons react with atmospheric oxygen to form carbon dioxide (CO_2) and water. Rather than flaring the collected LFG, the proposed LFGE project would utilize internal combustion engines, fueled by LFG that is recovered from PHLF, to produce energy.

The proposed LFGE plant would be equipped with six Caterpillar 3520C internal combustion (IC) engine and generator sets (2,233 brake horse power [bhp] each) that have a total electricity generation capacity of approximately 9.6 megawatts (MW), and a net electricity capacity of 8.8 MW available for distribution. If improved equipment technology that would result in improved performance and reduced environmental impacts from the LFGE plant (e.g., emissions reductions, increased equipment efficiency, increased power output) becomes available prior to construction, PHEP may substitute more efficient equipment for the Caterpillar 3520C internal combustion engine and generator sets. Appropriate authorizations, approvals, and permits would be obtained for such substitutions as required.

PROJECT OBJECTIVES

The State of California's mandated Renewables Portfolio Standard (RPS) requires electrical utilities to achieve a 33% renewable energy target by 2020 (California Governor's Executive Order S-14-08). California's RPS also requires retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least 1% per year so that 20% of their retail sales are procured from eligible renewable energy resources by 2017.

The objectives of the proposed LFGE project are to supply a source of renewable energy utilizing LFG as its fuel and to provide local utilities with renewable energy that can be used to meet the State of California's mandated RPS.

PHEP has entered into a 25-year agreement with Waste Connections for the landfill gas produced at PHLF. PHEP has a 25-year agreement with Pacific Gas and Electric (PG&E) to provide electricity generated by the proposed LFGE plant that would be sold into the California Independent System Operator system as a renewable energy source. The air quality impacts of the proposed LFGE project would be minimized through use of equipment that meets Best

Available Control Technology (BACT) requirements. The LFGE plant would also support on-site power demand at PHLF, which is currently produced on-site by diesel engine-generators. Diesel particulate matter (PM) is classified as a toxic air contaminant (TAC); therefore, the proposed LFGE project would result in a direct reduction of TAC emissions at the site. The proposal to use LFG to generate electricity may also displace non-renewable fossil fuel power generation and, if so, may result in a reduction in criteria pollutant and greenhouse gas emissions from non-renewable projects.

PROPOSED PROJECT LOCATION

The proposed LFGE project would be located within the existing property boundaries of PHLF. PHLF is located at 3675 Potrero Hills Lane in an unincorporated area of Solano County, California, approximately 2 miles southeast of Suisun City. The landfill is accessed from State Route 12 via Scally Road, Kildeer Road, and Potrero Hills Lane. The general location of the PHLF and physiographic features of the surrounding area are shown on Figure 1 – Site Vicinity Map, developed from the United States Geological Survey (USGS) topographic map for the Denverton quadrangle.

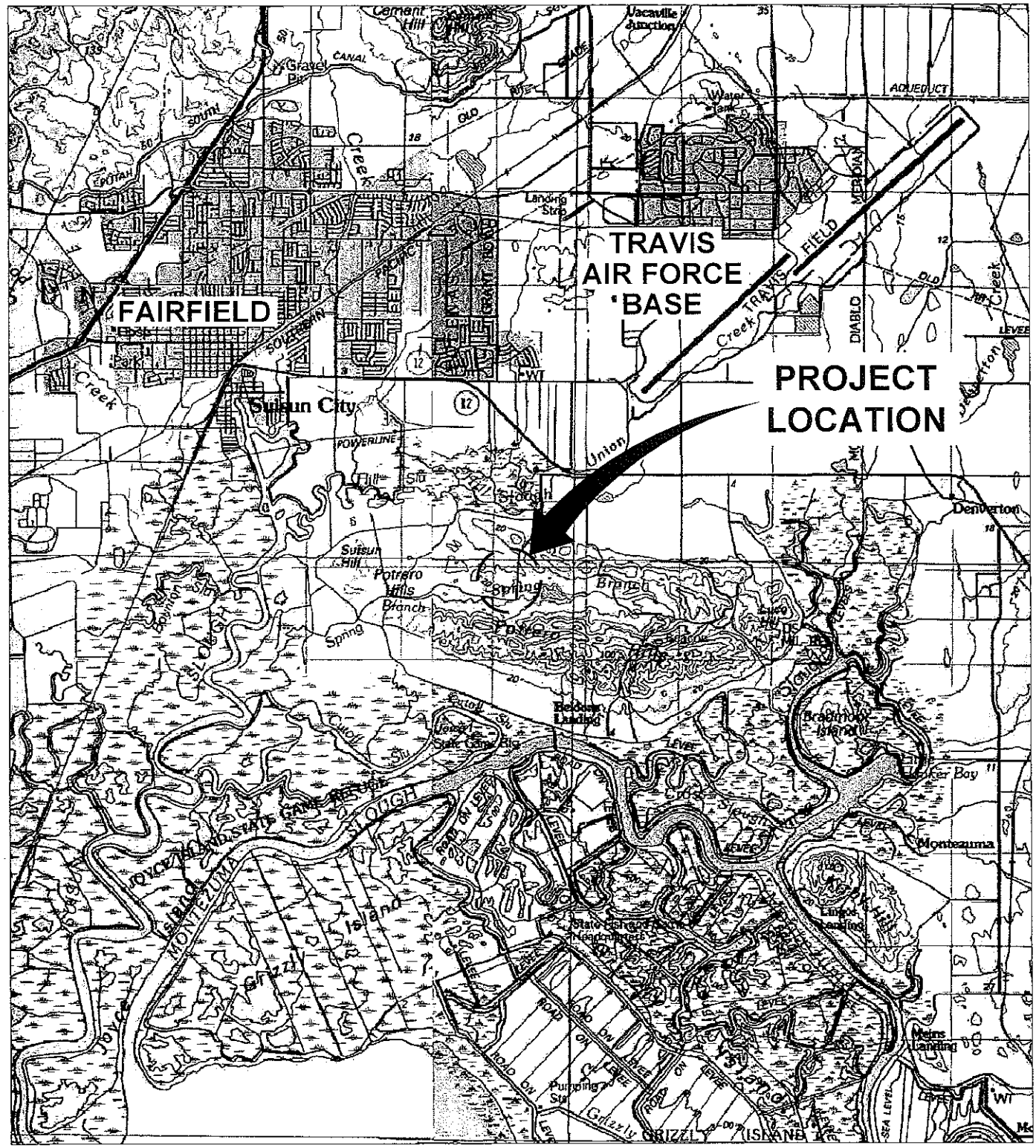
The PHLF property consists of approximately 1,400 acres total, of which 320 acres are in active use. PHLF operates the Class III solid waste landfill (as defined by Title 27 of the California Code of Regulations) under a combined Solano County land use permit, U-88-33, and Solano County Marsh Development Permit, MD-88-09. The currently permitted landfill, referred to as Phase I, is located entirely within a 320-acre parcel (Figure 2 – Site Location and PHLF Phase I and II Boundary Map).

The PHLF site has been in operation since 1986, and an expansion of the landfill has been proposed to increase the landfill's solid waste capacity. PHLF's proposed Phase II landfill expansion project would increase the landfill footprint from 320 to 535 acres and maximum height from 220 to 345 feet. The proposed increase in disposal capacity is expected to extend the disposal life of the landfill by approximately 35 years.

The proposed location of the LFGE plant is within the Phase I area of PHLF, between the inactive Cell 9 and the existing PHLF property boundary to the west. More specifically, the 4-acre LFGE plant site would be located west-northwest of the currently permitted landfill area, and in an area adjacent to an existing LFG flare and the diesel generators that currently provide power to the site (referred to as the "proposed project site", Figure 3 – Preliminary Site Plan). The LFG flare and diesel generators are located near silt basin #1, which is over a ridge to the west. However, the LFGE plant would not be located within wetlands or floodplain areas. Further, the existing PHLF site is located up gradient of the floodplain areas.

PROPOSED PROJECT BACKGROUND

The lead agency for a proposed project is the public agency principally responsible for carrying out or approving a project that may have a significant adverse effect upon the environment (Public Resources Code §21067). The proposed PHLF expansion project was subject to California Environmental Quality Act (CEQA) review completed by Solano County in 2009. The project description and impact analysis in the 2009 PHLF EIR primarily addressed the

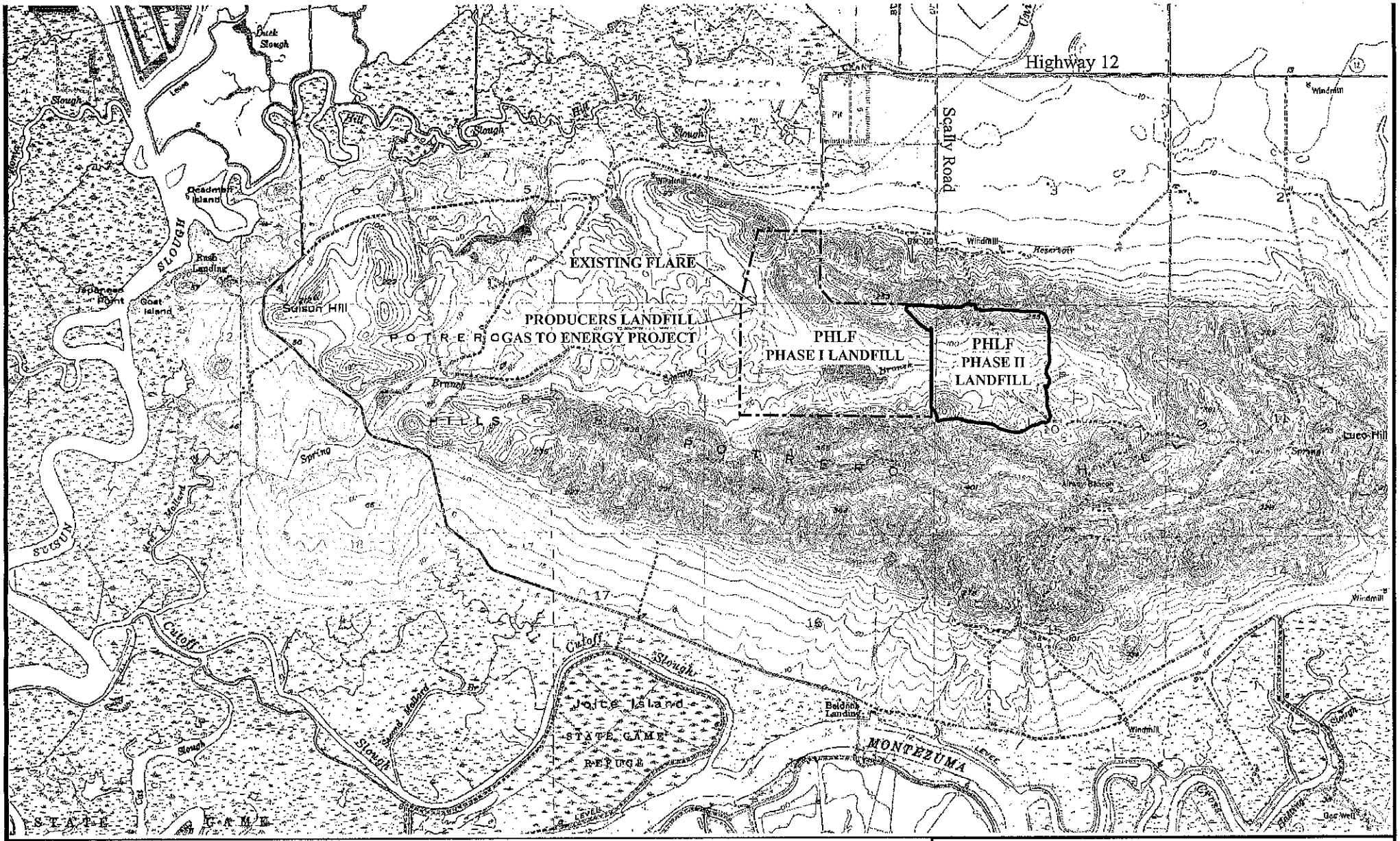


POTRERO HILLS ENERGY PRODUCERS
LANDFILL GAS TO ENERGY PROJECT
SOLANO COUNTY, CALIFORNIA

SITE VICINITY MAP

ARCADIS

FIGURE
1



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POTRERO HILLS LANDFILL (PHLF) - PHASE I LANDFILL

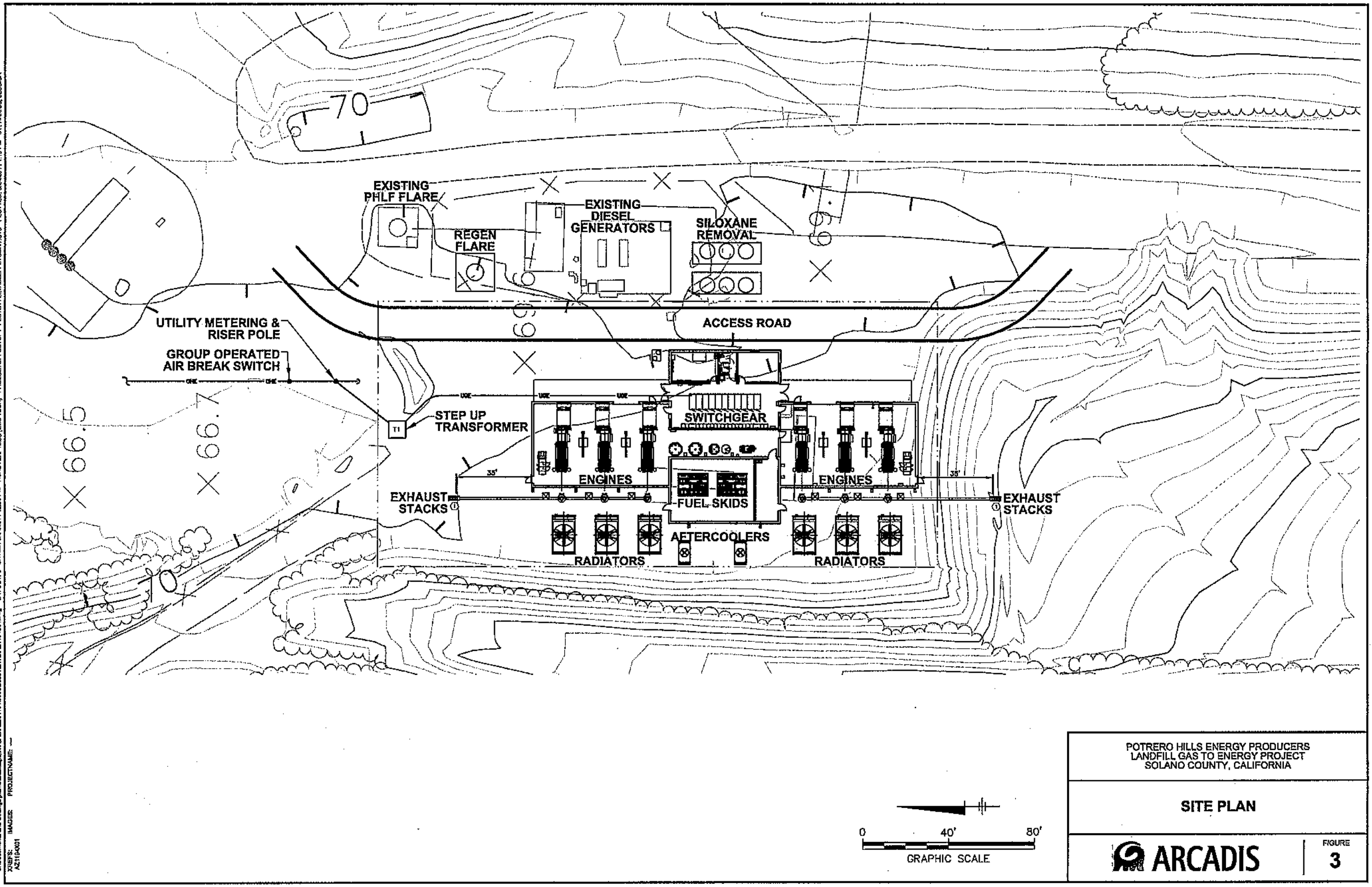
POTRERO HILLS LANDFILL (PHLF) - PHASE II LANDFILL

POTRERO HILLS ENERGY PRODUCERS
LANDFILL GAS TO ENERGY PROJECT
SOLANO COUNTY, CALIFORNIA

SITE LOCATION AND PHLF PHASE I AND II LANDFILL BOUNDARY MAP

ARCADIS

FIGURE
2



POTRERO HILLS ENERGY PRODUCERS
LANDFILL GAS TO ENERGY PROJECT
SOLANO COUNTY, CALIFORNIA

SITE PLAN

ARCADIS

FIGURE 3

PHLF expansion project, as well as a conceptual description and analysis of the proposed PHEP LFGE project.1

With presentation of the current proposed LFGE project, Solano County determined that because a proposed LFGE plant was discussed in the PHLF expansion EIR and because a proposed LFGE plant was included in the revised Land Use and Marsh Development Permit issued for the landfill expansion by the Solano County Board of Supervisors on September 13, 2005 (Resolution No. 2005-203), the County has no other permitting authority over the proposed energy project. In addition, the San Francisco Bay Conservation and Development Commission (BCDC) issued a permit, BCDC Permit 3-10(M), for the landfill expansion project, which amends the Solano County Marsh Development Permit, MD-88-09, Revision 2, for construction within the secondary management area of Suisun Marsh (November 1, 2010).

CEQA Guidelines Section 15152 states that "where an EIR has been prepared and certified for a program, ...any lead agency for a later project pursuant to or consistent with the program...should limit the EIR or negative declaration on the later project to effects which: (1) were not examined as significant effects on the environment in the prior EIR; or (2) are susceptible to substantial reduction or avoidance by the choice of specific revisions in the project, by the imposition of conditions, or other means." Therefore, this IS/MND focuses on the potential impacts of the LFGE project not evaluated in the 2009 PHLF EIR. Applicable text from the 2009 PHLF EIR is included and/or referenced in this document. Where applicable, mitigation measures from the 2009 PHLF EIR are incorporated as part of recommended mitigation measures included in this impact analysis.

The previous PHLF draft and final EIRs are available for public review at the Solano County Department of Resource Management (located at 675 Texas St, Suite 5500 in Fairfield, California 94533), and also available on the County's website (http://www.solanocounty.com/depts/rm/documents/eir/potrero_hills_landfill.asp). A data gap analysis was conducted to determine the scope of this IS and to identify any additional field work or analyses needed to complete the CEQA review for the proposed LFGE project, based on consideration of the current PHEP LFGE project description, as well as the draft and final environmental impact reports (EIRs) (EDAW 2003, 2005, 2007 and 2009) and associated permits and supporting documents for the PHLF Phase II Expansion. The results of the gap analysis, which forms the basis of the CEQA review for the proposed LFGE project, are included as Appendix A.

Since the 2009 PHLF EIR was published, additional details regarding the PHEP LFGE project have been developed, and since Solano County has determined it has no additional permitting authority over the proposed energy project, the Bay Area Air Quality Management District (BAAQMD) will be the lead agency for the PHEP LFGE project (CEQA Guidelines §15051(b)). The BAAQMD can issue an Authority to Construct (AC) and subsequently a Permit to Operate (PO) for the project under the New Source Review (NSR) Program. Upon completion of the

[1] PHLF EIR documents (including draft and final EIRs) can be accessed and downloaded from the Solano County Resource Management website: http://www.solanocounty.com/depts/rm/documents/eir/potrero_hills_landfill.asp

CEQA process of the LFGE project, BAAQMD will proceed with NSR to ensure that the project's air emissions comply with all applicable federal, state, and local air quality regulations.

PROPOSED PROJECT FOOTPRINT AND SYSTEM COMPONENTS

PHEP would lease and occupy an area of approximately 4 acres within the PHLF boundaries, on which a 180-foot-long by 80-foot-wide by 25-foot-high building would be constructed to house the power-generating equipment (see Figure 3). The LFGE plant would occupy an area near the PHLF entrance. Primary components of the proposed LFGE project would include:

- An LFG supply line (new piping or modifications to existing piping) connected to the header of the existing LFG collection system and one or more dedicated electric-driven gas blower/compressor systems to draw methane-rich gas (fuel) from the existing LFG collection system to the new electricity generation operations;
- LFG treatment equipment (for gas moisture removal and filtration) installed on a skid with the aforementioned gas blower/compressor systems;
- Gas treatment for siloxane removal and regeneration of the absorption media abated by an enclosed flare (3.2 MM BTU/hour capacity) to control waste gas from this regeneration cycle;
- Six identical Caterpillar 3520C lean burn IC engines connected to individual electricity generators, including switchgear, radiators, and exhaust and emissions control equipment, as appropriate; and
- A 1000-gallon fresh oil tank and a 1000-gallon waste oil tank.

Each of the LFG generators would have an electricity output rating of 1.6 MW, resulting in a total generation of 9.6 MW. The engines would be four stroke-cycle, water-cooled gas-fired units. The basic specifications for the proposed generators are included in Table 1.

Table 1

Generator Specifications

(Typical for each of the generators)

Manufacturer	Caterpillar
Model	3520C
Power Output at 100% Load (MW)	1.6
Bhp	2,233 at 1,200 revolutions per minute (rpm)
Fuel Type	LFG
% Load	100%
Gas Firing Rate (standard cubic feet per minute [scfm])	Not to exceed 600 per engine at 50% methane

The lean burn CAT 3520C LFG IC engines would be used to power electricity generators. These engines:

- Are designed to fire low-pressure, lean fuel mixtures and produce low combustion byproduct emissions;
- Are equipped with a controller that monitors engine performance parameters and automatically adjusts the air to fuel ratio and ignition timing to maintain efficient fuel combustion, which minimizes air pollutant emissions; and
- Would be fueled exclusively with LFG generated by, and received from, PHLF.

As shown in the site plan (see Figure 3), there are two sets of three generators on the west and east sides of the proposed LFGE plant building. Each generator would have its own exhaust pipe. The exhaust lines for each set of three generators would be bound together (i.e., as three separate pipes alongside each other) at the ends of the building. The externally bound exhaust lines would extend horizontally approximately 35 feet from the ends of the building at a height of approximately 30 feet above the finished grade, after which the exhaust lines would be vertically oriented to a maximum stack discharge height of approximately 30 feet above the finished grade. Stack specifications are included in Table 2.

Table 2

Generator Stack Specifications

(Typical for each of the engines)

Stack Parameter	Value
Diameter	16 inches
Orientation	Vertical
Discharge Height[1]	30 feet maximum (above ground)
Exhaust Velocity[2]	150 feet per second (ft/sec)
% Load	100%
Gas Firing Rate (scfm)	Nominal 518, maximum 600 per engine

[1] Based on initial air modeling results for all six engines

[2] Based on manufacturer's specification sheet exhaust volume, temperature, and stack diameter

The engines and switchgear, including a small air compressor, would be housed inside the building, and the radiators and LFG treatment skid would be housed outside the building. The estimated noise levels of equipment operated at the LFGE plant (prior to mitigation) would be:

- For the engines, there are no published noise data. However, the engines would be contained within a building and exhaust silencers would be installed on the engines to

reduce the noise level to less than or equal to 65 decibels, using A-weighted measurement (dBa) at 25 feet[2] (for each silencer).

- For the radiators, approximately 65 dBa at 25 feet (for each radiator).
- For the gas skid, approximately 85 dBA at 50 feet. An enclosed regeneration flare, equipped with a blower, would be installed remotely from the skid.

When the proposed LFGE plant is in operation, the existing flare and diesel engine/generator sets that are used to provide site power would normally be off, as the proposed engine capacities would be adequate to process the current LFG volume. However, the existing flare and diesel engine/generator sets would be maintained by PHLF and operated in the event that it is necessary to shut down the LFGE plant engine/generator sets for maintenance, during unplanned shutdowns, or when collected LFG volumes exceed the fuel capacity of the engines. Note that PHLF has proposed installation of a second flare, in addition to the existing flare, to handle LFG volumes that exceed the LFG capacity of the existing flare.

In addition to the LFGE plant, the proposed LFGE project would include the construction and operation of new power lines, as well as modifications of existing power lines, to connect the LFGE plant to an existing PG&E power line. PG&E has a 21 kilovolt (kV) line at the intersection of Walters Road and Petersen Road in Suisun City. This line would be modified from the Peabody Substation on Peabody road south along Peabody Road to Air Base Parkway, West along Air Base Parkway to Walters road and South on Walters Road to the intersection of Walters Road and Petersen Road. New power lines would be installed from Walters Road to Highway 12 and East on Highway 12 to Scally Lane and turn South on Scally Lane onto the landfill property then turn West along the landfill service road to the plant. The line would then turn south onto Kildeer Road to Potrero Hills Lane, through the landfill entrance, and end at the LFGE plant. An alternate route would involve routing the line along from Highway 12 along Potrero Hills Lane, through the landfill entrance and into the LFGE plant. The power lines would be installed underground along Potrero Hills Lane adjacent to Suisun Marsh and above ground within the landfill property and along Highway 12 and north to the interconnect point.

The use of Selective Catalytic Reduction (SCR) for the control of operational air emissions of nitrogen oxides (NOx) from the engines has also been evaluated as an optional project component. SCR is an air pollution control device in which an exhaust stream is passed through a catalyst bed in the presence of ammonia. If this optional project component is implemented, the following additional items would be added to the project:

- SCR catalyst housing, including catalyst blocks and open loop urea injection control system (6 total, one for each of the six engines);
- Air compressor; and
- Urea storage tank (5,000 gallon).

[2] Noise ratings were obtained from the equipment manufacturers for use in calculating off-site noise levels. Noise ratings for project equipment were available for distances of either 25 or 50 feet.

PROPOSED PROJECT CONSTRUCTION

CONSTRUCTION OF THE LFGE PLANT

Construction of the LFGE plant would be conducted in one phase. The construction time for this phase is anticipated to occur over a period of approximately 12 months, with construction activities expected to commence in 2012.

The construction activities and their estimated durations, as well as the equipment to be used and their total expected operation times during this phase, are summarized in Table 3 below. With the exception of truck deliveries, the activities are generally presented in chronological order.

Table 3

LFGE Plant Construction

(Includes installation of six engines)

Construction Activity	Duration of Activity	Construction Equipment Information				
		Type / Description	Number Used	Estimated Operating Time (Hours)	Maximum Daily Operating Time (Hours)	Maximum Daily Truck Trips
Site Work	2 weeks	D9 Dozer	2	80	10	
		Sheep's Foot Compactor	1	40	10	
Paving	2 days	Paver	1	6	6	
		Grader	1	8	8	
		16-yard Dump Trucks for Stone Deliveries	4	4		8
		16-yard Dump Trucks for Asphalt Deliveries	4	8		16
HDPE Pipe Installation	1 week	Trackhoe	1	24	10	
		Small Compactor	1	8	8	
Concrete (Foundation)	2.5 weeks	Trackhoe for Footing Excavation	1	30	10	
		Concrete Trucks	36			8
		Small Dozer for Backfill Footings	1	24	10	
		Rubber Tire Loader for Grading at Slabs and Miscellaneous Site Work	1	40	10	

Table 3

LFGE Plant Construction

(Includes installation of six engines)

Construction Activity	Duration of Activity	Construction Equipment Information				
		Type / Description	Number Used	Estimated Operating Time (Hours)	Maximum Daily Operating Time (Hours)	Maximum Daily Truck Trips
Masonry (Building)	6 weeks	All-Terrain Forklift	1	180	10	
		Small Cement Mixer	1	180	10	
Steel Erection (Support)	3 weeks	70-Ton Crane	1	48	10	
		Welder / Generators	2	150	10	
Roofing (Building)	2 weeks	Forklift	1	32	10	
Process Piping Installation	6 weeks	Forklift	1	120	10	
Electrical (excludes distribution line installation)	8 weeks	Forklift	1	110	10	
LFGE Plant Equipment Installation	4 weeks	100-Ton Crane	1	110	10	

Table 3

LFGE Plant Construction

(Includes installation of six engines)

Construction Activity	Duration of Activity	Construction Equipment Information				
		Type / Description	Number Used	Estimated Operating Time (Hours)	Maximum Daily Operating Time (Hours)	Maximum Daily Truck Trips
Truck Deliveries (Material and Equipment)	Over duration of entire phase	Delivery Trucks	250			10

Notes: Assumes 16-yard dump truck deliveries make a round trip in 2 hours.

HDPE = high-density polyethylene

A total of approximately 50 to 60 construction workers would be employed to support the construction activities described above, with approximately 25 different trades represented in the proposed LFGE project (excluding distribution line interconnection). At any one time, approximately 10 to 20 construction workers would be on-site, all of whom would drive to and park their personal vehicles at the proposed LFGE project location each work day. Construction hours would be from 7 am to 5 pm on weekdays, with potentially some work on weekends.

Construction traffic would access the proposed LFGE project site on existing roads to PHLF's Potrero Hills Lane entrance and from the entrance to the LFGE plant location. To the extent practicable, construction deliveries for the LFGE plant construction would occur during non-commute hours (e.g., 10 am to 4 pm). The main roads to the landfill are asphalt-paved, and from the entrance, the last approximately ¼ mile to the proposed LFGE project site is gravel road. PHLF anticipates that the existing roads will be used for solid waste acceptance and other landfill operations during the following time periods: 365 days per year, 24 hours per day Monday through Friday, and 20 hours per day on Saturday and Sunday.

Since the proposed location of the LFGE plant would be on previously disturbed soil and on a relatively flat surface, no significant clearing or grading would be needed. Currently, the location is used by PHLF as an equipment storage area, with a small office structure. No more than 4,000 cubic yards of soil would be disturbed during construction. Minimal to no landscaping is expected. If landscaping is included, the plants selected would be native to the area and require minimal watering. Solid waste generated during construction activities would be disposed of in accordance with Solano County solid waste regulations.

Construction workers would be provided with potable drinking water (in the form of bottled water) and temporary restroom facilities (in the form of portable toilets) over the duration of the construction process.

CONSTRUCTION OF PG&E DISTRIBUTION LINE INTERCONNECTION

Based on the proposed routing of the PG&E distribution line and interconnection to the LFGE plant described above, construction schedule and equipment estimates are included in Table 4 below. Detailed routing and construction specifications for interconnection of the LFGE plant to the existing PG&E distribution line would be developed in coordination with PG&E and would be subject to Solano County and BCDC review.

Table 4

Distribution Line Interconnection Construction (Preliminary)

Construction Activity	Duration of Activity	Construction Equipment Information		
		Type / Description	Number Used	Maximum Daily Operating Time (Hours)
Dig Holes	1 day	Crew Truck	2	10
Spot and Handle Wood Poles	3 days	Crew Truck	1	10
Erect and Backfill Holes	3	Crew Truck	1	10
		Flatbed Truck	1	10
		¾-ton Pickup Truck	1	10
		55-ton Crane	1	2
		12-ton Crane	1	2
		Earth Auger	1	2
		Tractor w/ winch	1	10
Disposal of Poles and Surplus Material	<1 day	Crew Truck	1	0.4
Overhead Conductor Installation	4 days	Crew Truck	1	10
		Flatbed Truck	1	10
		¾-ton Pickup Truck	1	10
		55-ton Crane	1	2
		12-ton Crane	1	2
		Earth Auger	1	2
		Tractor with Winch	1	10
Trenching	8 days	Trencher Chain (40 horsepower)	1	10

Table 4

Distribution Line Interconnection Construction (Preliminary)

Construction Activity	Duration of Activity	Construction Equipment Information		
		Type / Description	Number Used	Maximum Daily Operating Time (Hours)
Set Pull Boxes	3 days	5-ton Self-Propelled Crane	1	10
Compaction	3 days	Vibratory Plates, Gas	1	10
Underground Conductor Installation	4 days	Crew Truck	1	10
		Flatbed Truck	1	10
		¾-ton Pickup Truck	1	10

PROPOSED PROJECT OPERATION AND MAINTENANCE

Landfills and open dumps generate large amounts of methane and other gases as waste decomposes under anaerobic (without oxygen) conditions. The mixture of waste decomposition gases is referred to as landfill gas (LFG). Typically, LFG contains 30%-60% methane. Methane is highly flammable and is a potent greenhouse gas. LFG also contains reactive organic gases, toxic air contaminants, and odorous compounds. According to the U.S. Environmental Protection Agency (U.S. EPA), landfills were the third largest human-related source of methane in the United States in 2009, accounting for approximately 17.1% of all methane emissions. The amount of methane created depends on the quantity and moisture content of the waste and the design and management practices at the site. As required by local and federal law, LFG is currently collected from within PHLF and is burned using an enclosed industrial flare, in order to prevent LFG from migrating into the atmosphere and contributing to local smog, global climate change, and public health risks.

The proposed LFGE project would utilize the LFG collected from PHLF as fuel in six internal combustion engines to generate a source of renewable energy and reduce the amount of LFG that must be flared by PHLF. All of the engines would be started up together, and the operation of the generator units would be rotated until all were fully loaded.

The six-engine LFGE plant would have an average combined capacity of approximately 3,000 standard cubic feet per minutes (scfm) at 50% methane content and a maximum combined capacity of approximately 3,600 scfm at 50% methane[3]. The supply of LFG collected from

[3] The value of 50% methane content is an estimate used for purposes of calculation; actual methane content of LFG will vary.

PHLF is expected to continue to increase until the year 2068, at which point the supply of gas is projected to level off and begin to decrease thereafter. The maximum gas recovered at the peak of the gas curve is expected to be 8,400 scfm at 50% methane content. Information on the modeling of the LFG generation rate and projected fuel supply is included in Appendix B.

Figure 4 – Collection System Diagram, provides a general overview of the LFG collection and energy generation process.

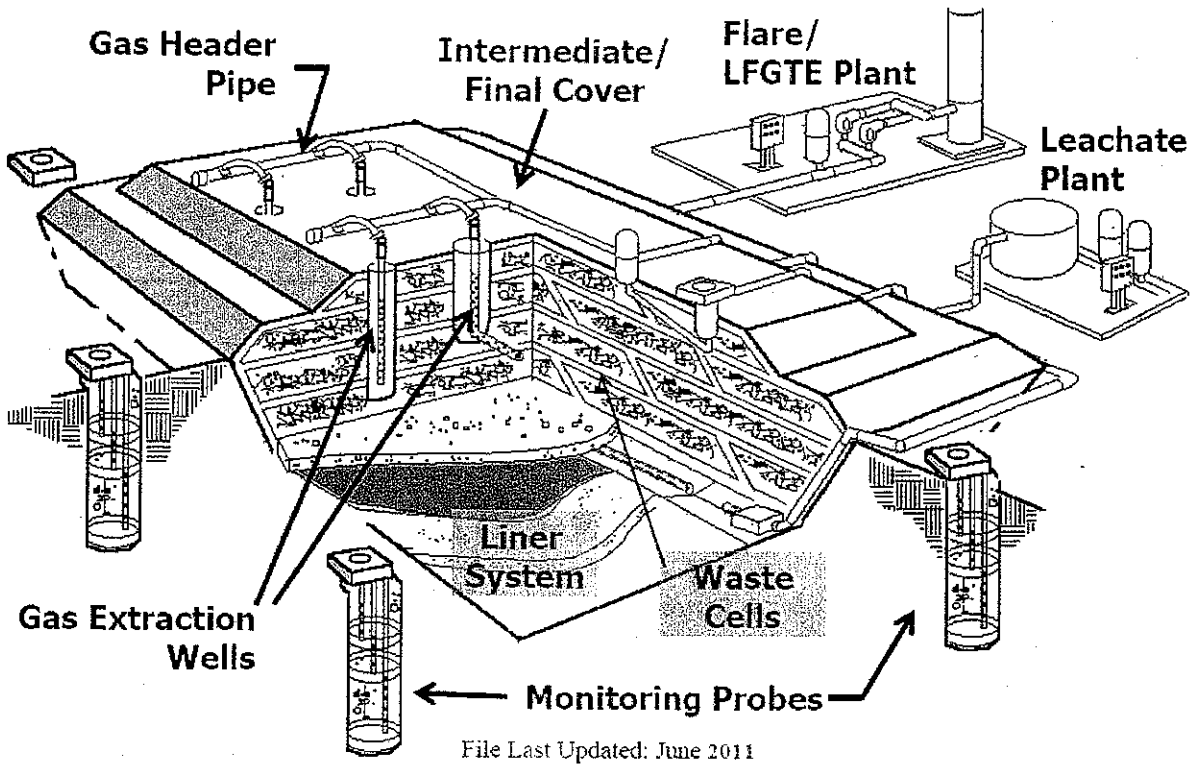


Figure 4: Collection System Diagram

Source: U.S. EPA. 2011. Landfill Methane Outreach Program. "An Overview of Landfill Gas Energy in the United States." http://www.epa.gov/lmop/documents/pdfs/overview.pdf

PHLF would be responsible for treating gas that is flared. The LFG to be used in the engines would be treated by the LFGE plant if it has not been treated by PHLF. Following treatment and compression, the LFG would be piped to provide fuel to the internal combustion engines. Condensate generated from LFG treatment by PHEP would be returned to the landfill for disposal in accordance with PHLF's Waste Discharge Requirements. When the LFGE plant begins operating, the existing flare(s) would normally be off, as the current LFG volumes are expected to be less than the maximum fuel capacity of the engines (3,600 scfm at 50% methane content). PHLF would maintain the flare(s) and operate them from time to time when it is necessary to shut down the engines for maintenance, during unplanned shutdowns, or when collected LFG volumes exceed the fuel requirements of the engines.

Tables 5, 6a and 6b show a comparison of current emissions from the PHLF with projected emissions during normal, anticipated operation from the PHLF and LFGE plant combined. Table 6a includes estimated emissions from the proposed LFGE project as currently proposed. Table 6b includes estimated emissions from the proposed LFGE project with the optional SCR project component. This information is provided for reference purposes only.

Table 5

Current Air Emissions (PHLF)

Facility	Source	Emissions (tons/year)				
		PM_{10}	CO	NOx	SO_2	POC
Potrero Landfill	Landfill Gas Fugitives	0	--	0	--	35.04
	Transportation	2.24	--	64.61	--	3.29
	Landfill Equipment/Other	4.62	3.80	51.49	1.56	81.34
	Generator S-33	0.31	2.18	5.81	2.13	0.31
	Flare A-2	3.24	38.91	11.6	36.64	2.72
	Flare A-3	5.19	62.26	18.68	58.62	4.35
Total		**15.6**	**107.2**	**152.2**	**98.9**	**127.0**

Table 6a

Projected Air Emissions (PHLF and LGFE Plant)

Facility	Source	Emissions (tons/year)				
		PM_{10}	CO	NOx	SO_2	POC
Potrero Landfill	Landfill Gas Fugitives	0	--	0	--	35.04
	Transportation	2.24	--	64.61	--	3.29
	Landfill Equipment/Other	4.62	3.80	51.49	1.56	81.34
	Generator S-33	0.31	2.18	5.81	2.13	0.31
	Flare A-2	0.55	6.57	1.97	6.19	0.46
	Flare A-3					
DTE Energy	IC Engines (6)	20.88	224.16	77.52	48.00	20.76
	Siloxane Flare	1.11	0.84	0.35	0.25	0.05
Total		**29.7**	**237.6**	**201.7**	**58.13**	**141.2**

Table 6b

Projected Air Emissions (PHLF and LGFE Plant) with SCR

Facility	Source	Emissions (tons/year)				
		PM_{10}	CO	NOx	SO_2	POC
Potrero Landfill	Landfill Gas Fugitives	0	--	0	--	35.04
	Transportation	2.24	--	64.61	--	3.29
	Landfill Equipment/Other	4.62	3.80	51.49	1.56	81.34
	Generator S-33	0.31	2.18	5.81	2.13	0.31
	Flare A-2	0.55	6.57	1.97	6.19	0.46
	Flare A-3					
DTE Energy	IC Engines (6)	20.88	224.16	19.44	48.00	20.76
	Siloxane Flare	1.11	0.84	0.35	0.25	0.05
Total		**29.7**	**237.6**	**143.67**	**58.13**	**141.2**

One to two employees would be hired by PHEP to ensure proper operation and maintenance of the LFGE plant. These employees would normally work Monday through Friday, from 8 am to 5 pm, and would be available on an on-call basis outside of normal working hours.

Potable drinking water (in the form of bottled water) and a restroom facility (consisting of a septic and leach field system) would be provided for PHEP employees. Other sources of wastewater would be rinsed from cleaning the floors and condensate from the air compressor(s). The rinse water and any condensate water generated by the compressors in the LFG treatment process would be returned to the landfill's leachate collection and disposal system in accordance with PHLF's Waste Discharge Requirements and San Francisco Regional Water Quality Control Board (SFRWQCB) requirements. The capacity of the existing leachate system is sufficient to handle the addition of 2,250 gallons per day, the expected maximum output of the proposed LFGE project.

The LFGE plant equipment would be operated and maintained in accordance with manufacturer specifications, and system-specific standard operating procedures would be developed by PHEP. Hazardous materials anticipated to be stored and used on-site for operations and maintenance activities associated with the LFGE plant would include:

- oil, as summarized in Table 7 below
- ethylene glycol (engine coolant)
- small quantities of cleaning agents for degreasing parts

The oil, coolant and cleaning agents would be purchased and delivered to the site by a third-party supplier. These hazardous materials, including hazardous waste generated from operation and maintenance of the LFGE plant, would be stored in appropriate storage containers or cabinets with secondary containment, as required. Hazardous waste (e.g., waste oil, which is considered a

California only, or non-Resource Conservation and Recovery Act, hazardous waste) would be transported off-site for appropriate handling and disposal by a qualified hazardous waste service provider. The quantities and types of oil anticipated as necessary for the PHEP operation are summarized in Table 7 below.

Table 7

LFGE Plant Oil Storage Inventory

Storage / Use Location	Number of Containers	Oil Storage Capacity per Container (gal)	Total Oil Storage Capacity (gal)
Engine – Inside Building	6	143	858
Makeup Oil Tank – Inside Building	6	50	300
Fresh Oil Tank – Inside Building	1	1,000	1,000
Waste Oil Tank – Inside Building	1	1,000	1,000
Transformer – Outside Building	1	1,000	1,000
Maximum Oil Inventory (gal):			**4,158**

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POTRERO HILLS ENERGY PRODUCERS

ENVIRONMENTAL IMPACTS

Determination
Discussion of Environmental Impacts

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DETERMINATION

On the basis of this initial evaluation:

_____ I find the proposed LFGE project COULD NOT have a significant effect on the environment. Therefore an environmental impact report (EIR) is not required, and a negative declaration is sufficient to comply with CEQA.

__X__ I find that although the proposed LFGE project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION will be prepared.

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

_____ I find the proposed LFGE project MAY have a significant effect on the environment, but at least one "potentially significant impact" or "potentially significant unless mitigated" impact (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 LFGE project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because all potentially significant effects (1) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (2) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures from the EIR that are imposed upon the proposed LFGE project.

Carol A Allen 4-9-12

Carol S. Allen Date
Supervising Air Quality Engineer

Reviewed by:

for JK 4/9/12

Jim Karas Date
Engineering Division Director

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DISCUSSION OF ENVIRONMENTAL IMPACTS

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires environmental review for projects developed or approved by California state, regional, or local government. PHEP has submitted a permit application for the proposed energy project to BAAQMD for approval. The permit application does not qualify under any of the CEQA exemptions contained in BAAQMD Regulation 2-1-311 (ministerial exemption), BAAQMD Regulation 2-1-312 (categorical exemption), or Section 15061 of the State CEQA Guidelines. The BAAQMD is not aware of any other public agency that will be preparing a Negative Declaration or EIR for this project. Accordingly, the BAAQMD is the Lead Agency for this project under CEQA.

The BAAQMD has received from the permit applicant a completed preliminary environmental study as required by BAAQMD Regulation 2-1-426.1, with information equivalent to that contained in Appendix H of the State CEQA Guidelines.

SPECIFIC IMPACTS

The following sections provide additional detail about why particular items in the CEQA checklist were checked.

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1. AESTHETICS

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:					
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?	☐	☐	☒	☐

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would result in significant aesthetic impacts related to altered views from the north and northwest, expansion of night lighting, visual changes associated with construction of ancillary facilities, and increased litter generation from the landfill. The 2009 PHLF EIR included mitigation measures to reduce these aesthetics impacts to a less-than-significant level. The 2009 PHLF EIR impacts and mitigation measures that are applicable to the LFGE project are identified in the analysis below which has been prepared to provide a more detailed assessment of the LFGE component now that more details about its design are available (see Project Description).

a) Less Than Significant Impact – The proposed LFGE site is located within the Potrero Hills Landfill property and is screened from offsite view from all directions by the area's rolling, grass-covered hills. Views of the LFGE site from the south and east are completely blocked by landfill cells. Public views of the site from the west are from Rush Ranch, a public park located approximately two miles from the site. These views are screened by soil stockpiles along the western boundary of the landfill property. State Route (SR) 12 is located approximately 1 mile north of the landfill entrance. The landfill's entrance is partially visible from SR 12. However, the LFGE plant would be located behind the landfill entrance, at a lower elevation, and would not be visible from off-site.

To evaluate potential off-site views of the LFGE plant and exhaust stacks, which would be approximately 30 feet above grade. Figure 5 – Line of Sight Location Map and Figure 6 – Line of Site Profiles present a line-of-sight analysis. Figure 5 shows the locations of three public viewpoints, including Rush Ranch to the west and SR 12 to the north. The Solano County General Plan Scenic Roadways Element (Solano County 2010) designates adjacent stretches of

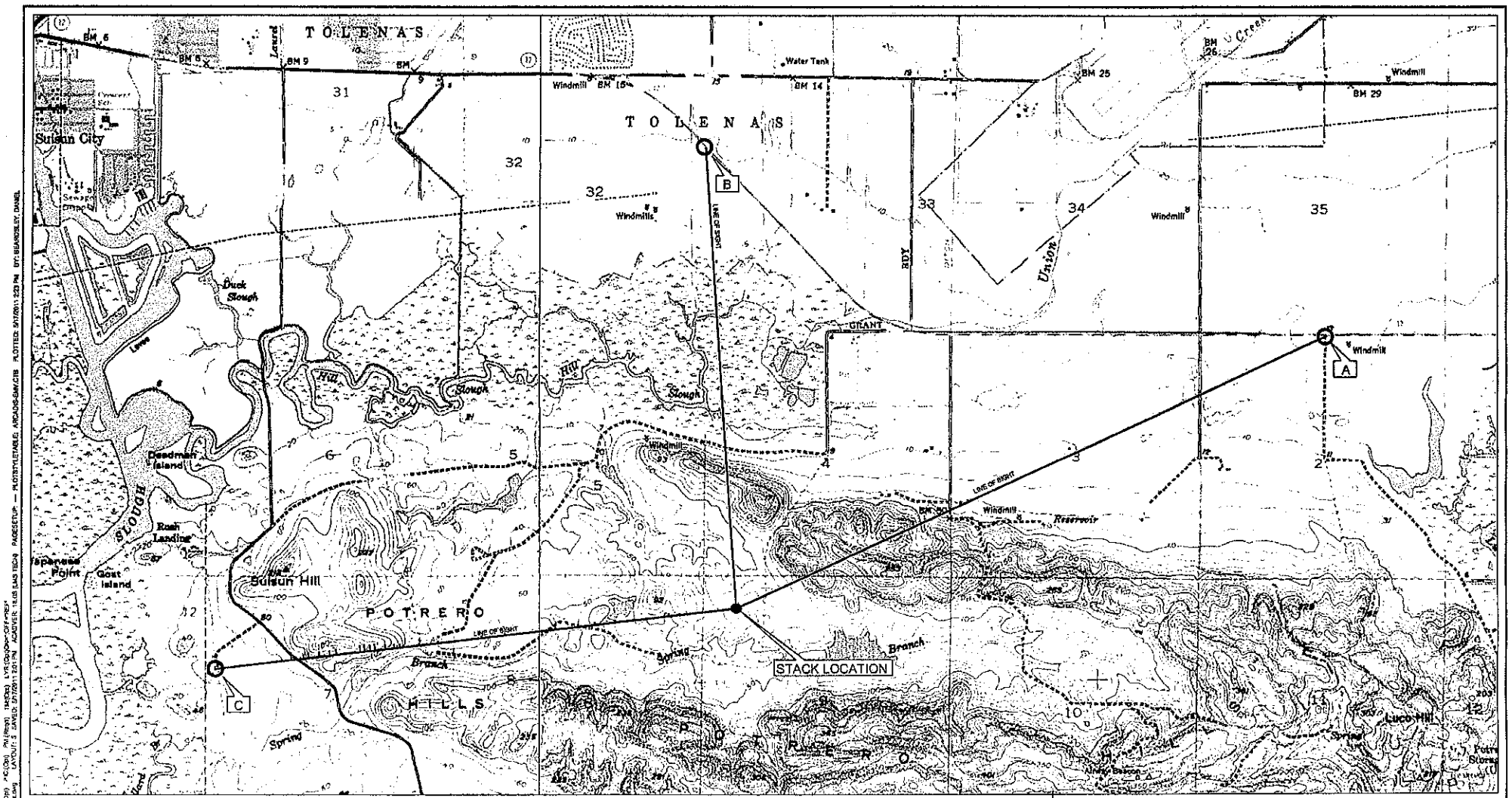
SR 12 as a scenic roadway. Policies related to foreground views of the area's rolling grasslands include:

> C.1 Allowable building construction or road construction which overlaps such a foreground component and is in view of the designated scenic roadway should be subject to site and design review by qualified county or city or by an urban design consultant to the staff.
>
> C.4 Since grassland is highly vulnerable to visual disruption by development activity, grading of a development site should be restricted to minimize alteration of the natural terrain. Padding should be prohibited and the use of adaptive foundations should be encouraged to accommodate topographic variations while minimizing cut and fill.
>
> C.5 New landscaping and introduced planting which will be visible from a designated scenic roadway should include heavy use of native species. Hilltops and upper hillsides shall be protected from non-native plant invasion.

The LFGE plant construction would not disturb any grasslands or alter the terrain, and any plantings would be directly adjacent to the plant and not viewable from SR 12. The LFGE plant and exhaust stacks would be 30 feet high. Figure 5 provides a line-of-sight analysis from two observation points along SR 12 approaching the proposed LFGE project area. The analysis shows that neither the LFGE plant nor the exhaust stacks would be visible to motorists approaching from the east and west. Therefore, because views of the LFGE plant would be blocked by the area's rolling topography and other features, the LFGE plant would have no impact on views from this scenic highway.

The proposed LFGE project interconnect line would be constructed from the LFGE plant within the confines of the landfill, along the landfill access road (Potrero Hills Lane), and north along SR 12 and Walters Road to the substation. Parts of the distribution interconnect would be in close proximity to Suisun Marsh. The proposed LFGE project is located within the boundaries of Solano County's approved Suisun Marsh Local Protection Program (LPP). The LPP conforms to the BCDC's management guidelines for marsh protection in primary and secondary management areas. The distribution interconnect line would cross a primary management area directly adjacent to a portion of the marsh between the landfill and SR 12, potentially requiring approval from both Solano County and BCDC. Within the landfill area, the interconnect line would be within a secondary management area (buffer lands), and along SR 12 to Suisun City, the distribution interconnect line would be outside the area covered by the Suisun Marsh Protection Plan and LPP.

Within the primary management area, the distribution interconnect line would be trenched underground in compliance with Solano County's LPP and would not be visible. The line would be installed within the raised roadbed and would have minimal disturbance of native vegetation. Construction within the landfill property would be in the secondary management area where undergrounding is not required and would be on power poles. Poles would also be used along the northern edge of SR 12, which is outside the Suisun Marsh LPP area. In this area, the power line would have a less-than-significant impact on scenic views because it would not interfere with foreground views of grasslands in the primary management area to the south and would blend with other utilities lines in the area. Therefore, the LFGE plant and distribution interconnect line



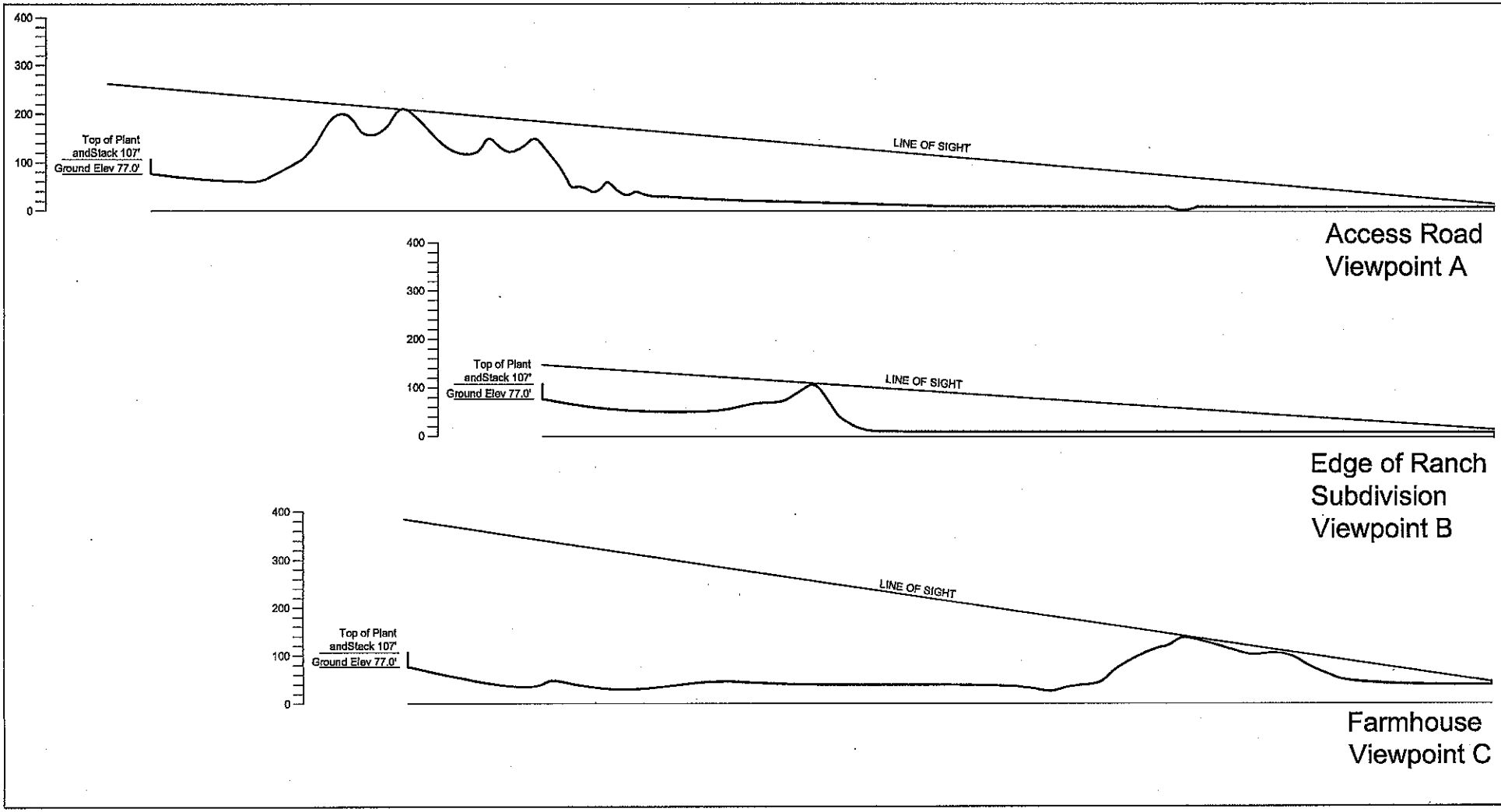
REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., DENVERTON, CA, 1980, AND FAIRFIELD SOUTH, CA, 1980.

POTRERO HILLS ENERGY PRODUCERS
LANDFILL GAS TO ENERGY PROJECT
SOLANO COUNTY, CALIFORNIA

LINE OF SIGHT LOCATION MAP

ARCADIS

FIGURE 5



REFERENCE: ELEVATION INFORMATION BASED ON USGS 7.5. MIN. TOPO. QUAD., DENVERTON, CA, 1980, AND FAIRFIELD SOUTH, CA, 1980.

0 1,000' 2,000'
Approximate Horizontal Scale: 1 in. = 1,000 ft.

POTRERO HILLS ENERGY PRODUCERS
LANDFILL GAS TO ENERGY PROJECT
SOLANO COUNTY, CALIFORNIA

LINE OF SIGHT PROFILE

ARCADIS

FIGURE
6

would have less than significant visual impacts on foreground views from SR 12, a Solano County-designated scenic roadway.

The proposed LFGE project site is also visible from Rush Ranch, a 2,070-acre open space area located on the opposite side of Suisun Marsh, approximately 2.3 miles to the west. This property was purchased by the Solano Land Trust in 1988 with a grant from the California Coastal Conservancy. In 2003, Rush Ranch was designated as part of the San Francisco Bay National Estuarine Research Reserve. Figure 6 provides a line-of-sight analysis for views of the LFGE plant's stacks from Rush Ranch and shows that the tops of the stacks would not be visible from this public viewing point and would have no impacts on views from Rush Ranch.

As a result, the altered view impact and associated mitigation measure described in the 2009 PHLF EIR are not applicable to the LFGE component as it will not be visible from off-site. The LFGE plant's impact on scenic vistas would be less than significant and no mitigations measures would be required.

b) No Impact – The proposed LFGE project site is south of SR 12, which is listed as eligible for the State Scenic Highway System but is not a designated state scenic highway. The LFGE plant site is within the landfill property and would have no impact on scenic resources. The distribution interconnect line would be trenched or "undergrounded" within the raised roadbed along SR 12 and either along Scally Lane or along Potrero Hills Lane and Kildeer Road, depending on how the power line is routed. This area is characterized as grassland and generally has very few trees or rock outcroppings, particularly within the roadbed. Construction would not affect buildings. Therefore, the LFGE project would have no impacts on trees, rock outcroppings, or historic buildings within a state scenic highway.

c) Less Than Significant Impact – The LFGE plant would be constructed within the Potrero Hills Landfill, an existing waste disposal facility. The visual character is commercial and industrial, including an administration building, weigh station, recycling areas, equipment laydown, stockpiled soils, and access roads. The LFGE plant would be consistent with the existing industrial visual character of the landfill site and would not adversely impact the landfill site. As described above, the LFGE plant and stacks would not be visible from SR 12 or Rush Ranch, which are the only public viewing points of the proposed LFGE project area (see Figure 6). Therefore, the LFGE plant would have no impact on the visual character of the surrounding area.

As described above, the distribution interconnect line would be installed underground in a trench along Potrero Hills Lane and would not be visible from SR 12. Power poles within the landfill would be consistent with the site's industrial character. Power poles along SR 12 would be outside the Suisun Marsh LPP area, but within a scenic roadway as designated by Solano County (Solano County 2010). However, no grading would be required and no buildings would be constructed. As described above, the power poles would blend with other utilities in the area. The poles would be installed on the north side of the road and would not substantially interfere with views of the Potrero Hills to the south or foreground views of area grasslands. Any revegetation along Potrero Hills Lane and SR 12 would use a native species seed mix.

Given the industrial nature of the proposed site, blocked views of the LFGE plant stacks, and underground construction of the distribution interconnect line through the Suisun Marsh primary

management area, the proposed LFGE project would not substantially degrade the existing visual character or quality of the site or its surroundings. Therefore, this impact would be less than significant and no mitigation measures would be required. The visual change impact and associated mitigation measure described in the 2009 PHLF EIR are not applicable to the LFGE component as it would not be visible from off-site.

d) Less Than Significant Impact – The proposed LFGE project would not create a new source of substantial light or glare. The LFGE plant would not require lighting for construction or operations. Only minimal safety lighting would be needed for the office, and no floodlights or night construction or operational lighting would be needed. Because the site is in the secondary management area for the Suisun Marsh LPP, any lighting would be subject to Solano County and BCDC design review.

According to the Travis Air Force Base Land Use Compatibility Plan (Shutt Moen 2002), which is administered by the Solano County Airport Land Use Commission, the proposed LFGE project's stacks would not require Federal Aviation Administration review. The proposed LFGE project is in Zone C where structures with heights below 100 feet would not require review (Policy 2.5.3); Lighting and marking requirements would not apply. Therefore, the proposed LFGE project would not create substantial light or glare from work area or stack lighting. Lighting impacts would be less than significant and no mitigation measures would be required. The expansion of night lighting impact and associated mitigation measure described in the 2009 PHLF EIR are not applicable to the LFGE component as no significant lighting is proposed as part of the PHLF project.

CONCLUSION

The LFGE plant would not be visible from off-site. The proposed LFGE distribution interconnect would be constructed underground along Potrero Hills Lane through the Suisun Marsh LPP primary management area and would not be visible to motorists on SR 12. Power poles would be used on the landfill site and north of SR 12 where they would blend in with existing utility lines. The line-of-sight analysis presented above shows that the LFGE plant stacks would not be seen from off-site. Overall, the proposed LFGE project would have a less than significant aesthetic impact on the proposed LFGE project area and no mitigation measures would be required.

REFERENCES

EMCON Associates (EMCON). 1999. 1999 Landfill Design Report, Potrero Hills Landfill, Solano County, California. May.

Shutt Moen Associates. 2002. Travis Air Force Base Land Use Compatibility Plan, Solano County, California. Solano County Airport Land Use Commission.

Solano County. 2010. General Plan's Scenic Roadways Element.

2. AGRICULTURE AND FOREST RESOURCES

Issues (and Supporting Information Sources):	*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. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **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) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, included an analysis of the agricultural resource impacts that would result from the proposed landfill expansion project. The 2009 PHLF EIR determined that

the landfill expansion project would not result in any agricultural resource impacts and no mitigation measures were required. This same finding is true for the LFGE project as currently proposed. A brief analysis is provided below.

a) No Impact – According to the California Department of Conservation (CDC), Division of Land Resource Protection, Farmland Mapping and Monitoring Program, Solano County Important Farmland 2008 map (CDC 2009), the Potrero Hills Landfill is located on Urban and Built-up Land. The land surrounding the PHLF is shown as Grazing Land (i.e., land on which the existing vegetation is suited to the grazing of livestock). The proposed LFGE project would be located on land currently owned and operated by PHLF (located within an AL-160 Zone [agricultural limited – 160-acre minimum]), with the exception of the utility interconnect poles that would run along the northern edge of SR 12, which is designated as Grazing Land. The proposed LFGE project would not result in conversion of Farmland of Statewide Importance to non-agricultural uses. Therefore, there would be no impacts associated with converting Farmland of Statewide Importance, Prime Farmland, or Unique Farmland.

b) No Impact – The proposed LFGE project site does not contain lands covered by a Williamson Act contract. Lands to the west and south of the PHLF, and therefore, of the proposed LFGE project, are protected under the Williamson Act as Non-Prime Agricultural Land (CDC 2008). Based on these determinations, the proposed LFGE project would have no conflict with lands under a Williamson Act contract and therefore would have no impact.

c), d) No Impact – The proposed LFGE project site is not associated with forest lands or timberland and therefore would have no impacts from the conversion of forest land to non-forest use.

e) No Impact – The proposed LFGE project would not involve changes to the existing environment that could result in conversion of farmland to non-farmland use or conversion of forest land to non-forest use. Therefore, no impacts would result. Conclusion

The proposed LFGE project would have no impact on agricultural resources because the project site does not contain lands covered by a Williamson Act contract nor does it result in a conversion of farmland or Farmland of Statewide Importance to non-agricultural use.

REFERENCES

California Department of Conservation (CDC), Division of Land Resource Protection, Williamson Act Program. 2008. Solano County Williamson Act Lands 2007. Published September 25, 2008. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/wa/Map%20and%20PDF/Solano/SoloanoWA_07_08.pdf Accessed April 4, 2011.

CDC, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. 2009. Solano County Important Farmland 2008. Published July 2009. Available at: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/sol08.pdf. Accessed April 4, 2011.

3. AIR QUALITY

Issues (and Supporting Information Sources):		*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?	☐	☐	☒	☐

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would result in significant impacts related to construction period emissions, emissions from expanded compost operations, and odors from landfill operations. The 2009 PHLF EIR included mitigation measures to reduce these air quality impacts to a less-than-significant level. The analysis below has been prepared to provide a more detailed assessment of the LFGE component now that more details about its design are available (see Project Description) and the regulatory environment has changed.

The BAAQMD is the regional agency responsible for air quality regulation within the San Francisco Bay Air Basin. The BAAQMD regulates air quality through its permit authority over most types of stationary emission sources, and through its planning and enforcement activities. The BAAQMD Guidelines provide air quality significance thresholds, which are presented in Table 8 (excluding greenhouse gas emissions thresholds). This analysis uses these thresholds of significance when considering the air quality impacts of the proposed LFGE project. Greenhouse gas emission impacts are addressed later in this IS/MND.

Table 8

BAAQMD Project-Level Air Quality CEQA Thresholds of Significance

Pollutant	Construction-Related	Operational-Related	
Criteria Air Pollutants and Precursors (Regional)	**Average Daily Emissions (pounds per day)**	**Average Daily Emissions (pounds per day)**	**Maximum Annual Emissions (tons per year)**
ROG	54	54	10
NO_X	54	54	10
PM_{10}	82 (exhaust only)	82	15
$PM_{2.5}$	54 (exhaust only)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	
Risk and Hazards (Individual Project)	Same as Operational Thresholds	Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: > 0.3 $\mu g/m^3$ annual average **Zone of Influence:** 1,000-foot radius from fence line of source or receptor	
Risk and Hazards (Cumulative Thresholds)	Same as Operational Thresholds	Cancer: > 100 in a million (from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) $PM_{2.5}$: > 0.8 $\mu g/m^3$ annual average (from all local sources) **Zone of Influence:** 1,000-foot radius from fence line of source or receptor	

Notes:

GHG thresholds are presented in Section 8, Greenhouse Gases

$\mu g/m^3$ = micrograms per cubic meter

ppm = parts per million

Source: BAAQMD CEQA Guidelines, May 2011.

An analysis of criteria air pollutants and precursors (CAPs) including reactive organic gases (ROGs), nitrogen oxides (NOx), particulate matter less than 10 micrometers (PM_{10}), particulate matter less than 2.5 micrometers ($PM_{2.5}$), and carbon monoxide (CO), local risk and hazard impacts from TACs and $PM_{2.5}$, and odors was conducted to estimate potential air quality impacts due to the proposed LFGE project. The analysis is consistent with CEQA Guidelines issued by the BAAQMD in May 2011 (BAAQMD Guidelines).

Table 9 provides a summary of the incremental construction CAP emissions estimated using the California Air Resources Board (CARB) approved Urban Land Use Emissions Model (URBEMIS). As discussed in the Project Description, construction will include the development of the LFGE plant as well as installation of the distribution line interconnection. Although it is likely the distribution line interconnection construction would not occur until later in the construction schedule, for this analysis, it is conservatively assumed that the distribution line interconnection construction could occur concurrently with any of the other construction activities. URBEMIS results are shown in Appendix C – Air Quality and Greenhouse Gas Emissions Estimates.

Table 9

Daily Construction Emissions

Source	Activity	Daily Emissions (pounds per day)			
		ROG	NOx	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
LFGE Plant	Site Work	6	48	2	2
	Paving	4	30	2	1
	HDPE Installation	0.64	4	0.35	0.32
	Concrete (Foundation)	2	18	1	1
	Building Construction	4	20	1	1
Distribution Line Interconnection	Pole Installation	4	32	1	1
	Trenching	1	2	0.27	0.24
	Setting pull boxes	0.49	3	0.27	0.24
	Compaction	0.26	3	0.13	0.12
	Conductors	4	31	1	1
Maximum Emissions		9	52	3	3
Significance Threshold		54	54	82	82
Exceed Threshold?		NO	NO	NO	NO

Notes:

Distribution line interconnection construction was assumed to occur concurrently with the LFGE plant construction activities. As a mitigation measure, the tasks with the highest emissions from these activities (i.e., site work associated with the LFGE plant construction and pole installation or conductor work associated with the distribution line interconnection construction) will be required to be performed separately and not overlap. The values presented in this table may not add up due to rounding for presentation purposes.

Construction of the optional SCR project component was also evaluated. Inclusion of this project component would not result in an increase in the maximum daily construction air quality impacts listed above.

A summary of operational CAP emissions associated with the operation of the six generators and one regeneration flare are presented in Tables 10a and 10b. Operational CAP emissions from the proposed LFGE project with the optional SCR project component are included in Tables 11a and 11b. The project emissions were compared to emissions associated with the existing flare (baseline) at the actual 2010 landfill gas combustion rate. Full calculations and assumptions are included in Appendix C.

Table 10a

Operational Daily Emissions

Process	Equipment	Daily Emissions (pounds per day)			
		ROG	NOx	PM_{10}	$PM_{2.5}$
Proposed Project	Generators	114	425	51	51
	Regeneration Flare	0.27	2	6	6
	Offsets	-114.27	-427	0	0
Baseline	Existing Flare (2010 actual emission)	0.48	65	16	16
Difference		-0.48	-65	41	43
Significance Threshold		54	54	82	54
Exceed Threshold?		NO	NO	NO	NO

Notes:

Significance thresholds are compared to the "difference", which is calculated by summing the emissions from the generators and regeneration flare, subtracting offsets to be provided for the proposed LFGE project, and then subtracting the baseline. The values presented in this table may not add up due to rounding for presentation purposes.

BAAQMD Regulation 2-2-302 will require offsets for all NOx and POC emission increases at the PHEP facility (POC and ROG include the same set of compounds), because the PHEP facility will emit more than 10 tons/year each of NOx and POC. The emission reduction credits (ERC) that will be used to offset the NOx and ROG emission increases must be supplied for the entire cumulative emission increase (CEI) at the PHEP site at a ratio of at least 1.0 tons/year of ERC per 1.0 tons/year of CEI.

Table 10b

Operational Annual Emissions

Process	Equipment	Annual Emissions (tons per year)			
		ROG	NOx	PM_{10}	$PM_{2.5}$
Proposed Project	Generators	21	78	9.3	9.3
	Regeneration Flare	0.05	0.35	1	1
	Offsets	-21.05	-78.35	0	0
Baseline	Existing Flare	0.09	12	3	3
Difference		-0.09	-12	7.3	7.3
Significance Threshold		10	10	15	10
Exceed Threshold?		NO	NO	NO	NO

Notes:

Significance thresholds are compared to the "difference", which is calculated by summing the emissions from the generators and regeneration flare and subtracting the baseline. The values presented in this table may not add up due to rounding for presentation purposes.

BAAQMD Regulation 2-2-302 will require offsets for all NOx and POC emission increases at the PHEP facility (POC and ROG include the same set of compounds), because the PHEP facility will emit more than 10 tons/year each of NOx and POC. The emission reduction credits (ERC) that will be used to offset the NOx and ROG emission increases must be supplied for the entire cumulative emission increase (CEI) at the PHEP site at a ratio of at least 1.0 tons/year of ERC per 1.0 tons/year of CEI.

Table 11a

Operational Daily Emissions with SCR

Process	Equipment	Daily Emissions (pounds per day)			
		ROG	NOx	PM_{10}	$PM_{2.5}$
Proposed Project	Generators	114	107	51	51
	Regeneration Flare	0.27	2	6	6
	Offsets	-114.27	-109	0	0
Baseline	Existing Flare (2010 actual emission)	0.48	65	16	16
Difference		-0.48	-65	41	43
Significance Threshold		54	54	82	54
Exceed Threshold?		NO	NO	NO	NO

Notes:

Significance thresholds are compared to the "difference", which is calculated by summing the emissions from the generators and regeneration flare, subtracting offsets to be provided for the proposed LFGE project, and then subtracting the baseline. The values presented in this table may not add up due to rounding for presentation purposes.

BAAQMD Regulation 2-2-302 will require offsets for all NOx and POC emission increases at the PHEP facility (POC and ROG include the same set of compounds), because the PHEP facility will emit more than 10 tons/year each of NOx and POC. The emission reduction credits (ERC) that will be used to offset the NOx and ROG emission increases must be supplied for the entire cumulative emission increase (CEI) at the PHEP site at a ratio of at least 1.0 tons/year of ERC per 1.0 tons/year of CEI.

Table 11b

Operational Annual Emissions with SCR

Process	Equipment	Annual Emissions (tons per year)			
		ROG	NOx	PM_{10}	$PM_{2.5}$
Proposed Project	Generators	21	19	9.3	9.3
	Regeneration Flare	0.05	0.35	1	1
	Offsets	-21.05	-19.35	0	0
Baseline	Existing Flare	0.09	12	3	3
Difference		-0.09	-12	7.3	7.3
Significance Threshold		10	10	15	10
Exceed Threshold?		NO	NO	NO	NO

Notes:

Significance thresholds are compared to the "difference", which is calculated by summing the emissions from the generators and regeneration flare and subtracting the baseline. The values presented in this table may not add up due to rounding for presentation purposes.

BAAQMD Regulation 2-2-302 will require offsets for all NOx and POC emission increases at the PHEP facility (POC and ROG include the same set of compounds), because the PHEP facility will emit more than 10 tons/year each of NOx and POC. The emission reduction credits (ERC) that will be used to offset the NOx and ROG emission increases must be supplied for the entire cumulative emission increase (CEI) at the PHEP site at a ratio of at least 1.0 tons/year of ERC per 1.0 tons/year of CEI.

The calculated emissions for the proposed LFGE project would result in an increase in emissions from the level of emissions currently generated by flaring for the following reasons:

1. The technology of the equipment used to combust the LFG is different. The IC engine used to power the proposed LFGE project generators have individual combustion chambers that start and stop combustion of LFG through the piston movement. In contrast, the existing flare would continuously combust the LFG. The start and stop process results in higher emissions per volume of fuel from the IC engines.
2. The proposed LFGE project emission estimates account for combustion of a greater amount of LFG at the engines than is currently being produced and combusted by the flare. It is expected that LFG production will increase in the future due to the expected waste decomposition curve, as well as due to increased solid waste placement. The current LFG combusted (approximately 1,380 scfm) is lower than the maximum throughput for the proposed LFGE project (3,600 scfm).

3. ROG emissions for the proposed LFGE project use an emission factor provided by the Manufacturer Specifications that is designed to be conservative. In contrast, ROG emissions for the existing flare were based on actual landfill gas data for 2010.

One-hour and eight-hour CO concentrations associated with the proposed LFGE project operations were estimated using the AERMOD air dispersion model and combined with background concentrations measured at the closest monitoring station, located in Vallejo, California, approximately 15 miles southwest of the proposed LFGE project. The resulting projected local CO concentrations are presented in Table 12. Full calculations and assumptions are included in Appendix C.

Table 12

CO Concentrations for Background and Proposed Project

Process	1-Hour Concentrations (ppm)	8-Hour Concentrations (ppm)
Proposed Project	0.82	0.74
Background	3.3	2.7
Total	4.1	3.4
Significance Threshold	20.0	9.0
Exceed Threshold?	NO	NO

Notes:

Significance thresholds are compared to the "total", which is calculated by summing the proposed LFGE project and background. The values presented in this table may not add up due to rounding for presentation purposes.

A screening level Health Risk Assessment was conducted to assess the cancer risk of TACs to the public, as well as chronic and acute hazard health risks from the proposed LFGE project. In addition, since a large body of scientific evidence indicates both long-term and short-term exposure to $PM_{2.5}$ can cause a wide range of health effects, the BAAQMD 2011 CEQA Guidelines recommend characterizing the potential effects of exposure to $PM_{2.5}$ emissions. Therefore, the potential $PM_{2.5}$ concentrations estimated at residential properties were calculated using AERMOD. A summary of these potential health risks from the proposed LFGE project is presented in Table 13. Full calculations and assumptions are included in Appendix C. The risks presented in Table 13 represent those from the LFGE project as currently proposed and with the use of the optional SCR project component.

Table 13

Health Risks from Proposed Project

Process	Cancer Risk	Chronic Hazard Index	Acute Hazard Index	$PM_{2.5}$ (Annual Avg.)
Proposed Project	6.36 in a million	0.15	0.27	0.26 $\mu g/m^3$
Significance Threshold	10 in a million	1	1	0.3 $\mu g/m^3$
Exceed Threshold?	NO	NO	NO	NO

The BAAQMD CEQA Guidelines also recommend that TAC and $PM_{2.5}$ sources located within a 1,000-foot radius of a proposed project site be evaluated for potential cumulative impacts. The only permitted sources within this radius of the proposed LFGE project are the sources operated by PHLF, including a non-retail gasoline dispensing facility, the landfill operation, and diesel engines. Table 14 lists the health risks from landfill gas fugitive emissions, landfill equipment exhaust, and landfill gas control devices which were presented during the 2009 PHLF EIR evaluation and scaled to account for the total landfill fill capacity, mobile sources (operational haul trucks) at the landfill, the non-retail gasoline dispensing facility, in addition to the risks associated with the proposed LFGE project as provided by BAAQMD.

The risks presented in Tables 13 and 14 represent those from the LFGE project as currently proposed and with the use of the optional SCR project component. The use of SCR would result in additional emissions of ammonia, which is used as a reagent in the SCR system. Hourly and annual ammonia emissions from the use of SCR have been evaluated for their impact on overall health risks from the project. Based on emissions calculations, dispersion modeling and risk calculations, the overall risk from SCR ammonia emissions would not impact the calculated risks presented in Tables 13 and 14.

Table 14

Screening-Level Cumulative Health Risks From Sources Within 1,000 Feet of the proposed LFGE project

Site No.	Facility Name	Street Address	UTM E	UTM N	Cancer Risk in a Million	Chronic Hazard Index	$PM_{2.5}$ ($\mu g/m^3$)
	Proposed Project				6.36	0.15	0.26
G11138	Potrero Hills Landfill, Inc. (non-retail gas dispensing facility)	3675 Potrero Hills Lane	588968	4260316	0.21	0.000	0.05
2039	Potrero Hills Landfill, Inc. (scaled from 2009 PHLF Draft EIR)	3675 Potrero Hills Lane	589514	4230863	6.80	--	--
2039	Potrero Hills Landfill, Inc. (mobile source impacts)	3675 Potrero Hills Lane	589514	4230863	2.30	0.00089	0.0044
2039	Potrero Hills Landfill, Inc. (pending permit applications)	3675 Potrero Hills Lane	589514	4230863	20	2	0.39
Total					36	2.15	0.70
Significance Threshold					100	10	0.8
Exceed Threshold?					NO	NO	NO

Notes:

Health impacts for Site No. G11138 (a non-retail gas dispenser facility) were taken from the BAAQMD database (http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Tools-and-Methodology.aspx). The cancer risk for Site No. 2039, Potrero Hills Landfill, was taken from the 2009 PHLF Draft EIR. This cancer risk only accounts for the increase of 61.6 million cubic yards to the landfill fill capacity for a total of 83 million cubic yards. Therefore, the cancer risk analysis is adjusted to account for the total landfill fill capacity. Two additional projects at the Potrero Hills Landfill were added to this table to address permit applications under review at BAAQMD. A worst-case cancer risk of 10 in a million and chronic hazard index of 1.0 was assumed for each project since this is the maximum value allowable under Regulation 2, Rule 5. $PM_{2.5}$ concentrations were not reported in the 209 EIR, so emissions from the EIR and from current permits and pending permit applications were modeled to determine $PM_{2.5}$ impacts. The values presented in this table may not add up due to rounding for presentation purposes.

AIR QUALITY IMPACT ANALYSIS

a) Less Than Significant Impact – An air quality plan describes air pollution control strategies to be implemented by a city, county, or region classified as a non-attainment area. The main purpose of an air quality plan is to bring the area into attainment with the requirements of federal and state air quality standards. To bring the San Francisco Bay Area region into attainment, the BAAQMD developed the 2010 Clean Air Plan (BAAQMD 2010a). BAAQMD's 2010 Clean Air Plan includes the following strategies:

- Update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement "all feasible measures" to reduce ozone;
- Provide a control strategy to reduce ozone, PM, air toxics, and greenhouse gases in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2010 to 2012 timeframe.

The San Francisco Bay Area Air Basin is classified as non-attainment with ozone, PM_{10}, and $PM_{2.5}$ with respect to California Ambient Air Quality Standards (CAAQS) and as non-attainment with ozone and $PM_{2.5}$ with respect to National Ambient Air Quality Standards (NAAQS).[4] Because the proposed LFGE project would not exceed emissions thresholds as shown in Tables 9, 10a, and 10b, the proposed LFGE project would not have the potential to conflict with the BAAQMD's 2010 Clean Air Plan.

b) Less Than Significant Impact with Mitigation – A project's impact on air quality is considered significant if it exceeds the significance thresholds identified by the BAAQMD presented in Table 8.

Construction Emissions. As shown in Table 9, NOx emissions from construction-related activities would not exceed the BAAQMD significance threshold with mitigation applied. ROG, PM_{10} exhaust, and $PM_{2.5}$ exhaust emissions from construction-related activities are below the BAAQMD significance thresholds.

The BAAQMD does not provide quantitative significance thresholds for fugitive PM_{10} or $PM_{2.5}$ emissions. However, the BAAQMD recommends that for fugitive dust significance, a project incorporates best management practices for dust control. To meet the best management practices

[4] The federal Clean Air Act Amendments of 1970 established national ambient air quality standards (NAAQS) to which states are required to adhere. The NAAQS are intended to protect the public health and welfare. They are designed to protect those segments of the public most susceptible to respiratory distress, known as "sensitive receptors," including asthmatics, the very young, the elderly, and people weakened by other illness or disease. The federal act also afforded individual states the option to adopt standards that are more stringent and/or include other pollutants. California had established its own air quality standards when federal standards were promulgated. Some of the California Ambient Air Quality Standards (CAAQS) are more stringent than their NAAQS counterparts.

threshold for fugitive dust, the proposed LFGE project would implement the following measures as recommended in the BAAQMD Guidelines:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered at least two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment exhaust shall be checked for opacity by a certified visible emissions evaluator.
8. Post a publicly visible sign with the telephone number and designated person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

In addition to the standard implementation measures listed above, Mitigation Measure AIR-1 listed below will also be required for this project to ensure that daily NOx emissions from construction-related activities would not exceed the BAAQMD significance threshold.

Operational Emissions. Criteria pollutant emissions for operation of the proposed LFGE project (Tables 10a and 10b or 11a and 11b) do not exceed daily or annual significance thresholds either with or without the optional SCR project component. As shown in Table 12, operation of the proposed LFGE project would not result in local ambient CO concentrations that exceed BAAQMD significance thresholds.

c) Less Than Significant Impact – The operation of the proposed LFGE project would not result in a significant impact to air quality from criteria pollutant and precursor emissions. Therefore, the proposed LFGE project has the potential to result in a significant cumulative impact to air quality from criteria pollutant and precursor emissions.

d) Less than Significant Impact – Exposure of sensitive receptors to substantial pollutant concentrations was determined by comparing risk and hazards thresholds, taking into account both individual and nearby cumulative sources.

Construction Emissions. As discussed in the 2011 BAAQMD Guidelines and the Screening Tables for Air Toxics Evaluation during Construction (BAAQMD 2010b), diesel particulate

matter, $PM_{2.5}$, and several TACs are emitted from construction activity that uses traditional diesel-powered equipment such as bulldozers, generators, and cranes. Using Table 2 from the Screening Tables for Air Toxics Evaluation During Construction (BAAQMD 2010b) for the 4-acre project site, 100 meters (approximately 328 feet) would be the minimum offset distances from the project fence line to ensure that the project will have a less-than-significant impact on sensitive receptors.[5] No sensitive receptors are located within 100 meters of the proposed LFGE project. Therefore, the TAC impacts to air quality from construction of the proposed LFGE project would be less than significant.

Operational Emissions. Table 13 indicates that the proposed LFGE project is not expected to expose the public to significant levels of TACs or $PM_{2.5}$. As shown in Table 14, the cumulative impacts of sources within 1,000 feet of the proposed LFGE project (including the proposed LFGE project) would not exceed the significance thresholds identified in the BAAQMD Guidelines.

Based on the construction and operational emissions for the proposed LFGE project, the proposed LFGE project itself would have a less than significant impact on sensitive receptors. Therefore, this impact would be less than significant.

e) Less than Significant Impact – The proposed LFGE project would not create objectionable odors affecting a substantial number of people. LFG does have an odor associated with it primarily due to the presence of hydrogen sulfide and other odorous sulfur compounds in LFG; however, LFG would continue to be collected by PHLF, which minimizes LFG emissions into the atmosphere, during construction of the energy plant and after the project is operational. During construction, LFG will continue to be flared by PHLF. Combustion of LFG in a flare converts most of the odorous constituents to sulfur dioxide and water and minimizes the residual amounts of odorous compounds in the exhaust gas from the flare. Once the project is operational, the LFG would be directed through the IC engines and combusted, thereby greatly reducing the odor from the collected LFG, just as flaring does. The proposed electricity generation facility is not anticipated to create detectable odors or generate dust. Therefore, odor impacts would be less than significant.

MITIGATION MEASURES

AIR-1, Distribution Line Construction. The project applicant shall ensure that initial site work and paving at the project site shall not be performed on any day on which construction of the Distribution Line Interconnection for this project also occurs.

CONCLUSION

The proposed LFGE project would not result in significant air quality impacts. Daily and annual operational emissions from the project are below significance thresholds. Mitigation will be required to ensure that daily NOx emissions from construction remain less than significant.

[5] Conservatively uses the 2.8-acre industrial project screening values provided in the Construction Screening Table.

Proposed project construction emissions would not exceed significance thresholds ROG, PM_{10}, and $PM_{2.5}$. The project itself would not have a significant impact on health risk to the surrounding population. Also, the project plus neighboring sources would not have a cumulatively significant impact on health risk to the surrounding population.

REFERENCES

Bay Area Air Quality Management District (BAAQMD). 2010a. Bay Area 2010 Clean Air Plan (CAP). Adopted September 15, 2010.

———. 2010b. Screening Tables for Air Toxics Evaluation During Construction. May. http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/CEQA_Construction_Screening_Approach.ashx

———. 2011. California Environmental Quality Act (CEQA) Air Quality Guidelines. May.

California Air Resources Board (CARB). 2008. UREMIS 2007 Model Version 9.2.4. February.

4. BIOLOGICAL RESOURCES

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:					
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 U.S. 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?	☐	☐	☐	☒

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would result in biological resource impacts related to vernal pool crustaceans, burrowing owls, raptors, California tiger salamander, and sensitive habitats. The 2009 PHLF EIR included mitigation measures to reduce these biological resource impacts to a less-than-significant level. The 2009 PHLF EIR impacts and mitigation measures that are applicable to the LFGE project are identified in the analysis below which has been prepared to

provide a more detailed assessment of the LFGE component now that more details about its design are available (see Project Description).

a) Less than Significant with Mitigation Incorporation –

Federal and State Threatened and Endangered Species

The federal- and state-listed threatened California tiger salamander (CTS; *Ambystoma californiense*) breeds in many of the ponds that surround the PHLF and proposed project location, and are distributed in the surrounding upland grasslands (BCDC 2007; EDAW 2009). The LFGE plant location and potential impacts to CTS are described and analyzed in the Final EIR for the PHLF Phase II expansion (EDAW 2009). A draft Biological Opinion (USFWS 2010) and BCDC Permit No. 3-10(M) (BCDC 2010) were issued for the PHLF Phase II expansion, including the LFGE plant and distribution interconnect. No substantive changes have occurred in regards to the proposed LFGE project location, design, or operation of the LFGE plant that would adversely impact CTS or their habitat. The implementation of 2009 PHLF EIR Mitigation Measure 4.2-5 (Appendix D), the BCDC permit conditions (BCDC 2010; Appendix E – BCDC Permit), and the avoidance and minimization measures in the anticipated final Biological Opinion (BO) (Appendix F) would reduce impacts to threatened CTS to a less than significant level for the construction and operation of the LFGE plant.

The modified proposed project described in this IS/MND includes a change in the location of the PG&E distribution interconnect from a previous alignment that would have had direct impacts on CTS upland grassland habitat to a new distribution interconnect route with much lower potential impacts on CTS habitat. The new distribution interconnect route on Potrero Hills Lane would avoid impacts to CTS upland habitat by installing the line within the existing road right-of-way. Therefore, the potential for direct effects from disturbance of burrows or potential habitat (grasslands) would be avoided. However, CTS are known to migrate long distances to and from breeding ponds (BCDC 2007) and may attempt to cross the route during migrations where they could be struck by vehicles, crushed by construction equipment, or trapped in excavations or spoils. Therefore, if construction occurs during the CTS migration season, then the distribution interconnect portion of the proposed LFGE project would incorporate the avoidance and minimization measures for CTS contained in the 2009 PHLF EIR (EDAW 2009), the BCDC permit (BCDC 2010), the draft and anticipated final BO, as well as mitigation measures BIO-1, BIO-2, and BIO-3 that would reduce impacts to CTS to less than significant for the construction and operation of the distribution interconnect.

The area adjacent to Potrero Hills Lane consists of vernal pool and marsh habitat. In addition to CTS, these areas are potential habitat for a number of other protected species including: Contra Costa goldenfields (*Lasthenia conjugens*; threatened), conservancy fairy shrimp (*Branchinecta conservation*; endangered), vernal pool fairy shrimp (*B. lynchi*; threatened), and vernal pool tadpole shrimp (*Lepidurus packardi*; endangered; USFWS 2011a), as well as designated critical habitat for several of these species (USFWS 2011b). The underground installation of the distribution interconnect in the elevated road bed in these areas would result in no impact to protected species or their designated critical habitat. All construction would occur in the elevated portion of the road right-of-way, which does not provide habitat for the protected species present

in the adjacent vernal pool and marsh habitats. No fill would be placed in wetlands or adjacent grassland habitats. As a result, the vernal pool crustaceans mitigation measure described in the 2009 PHLF EIR is not applicable to the LFGE component as it would not affect habitat for the protected species present in the vernal pools and marshes. The LFGE plant's impact on vernal pool crustaceans would be less than significant and no mitigations measures would be required.

The implementation of standard stormwater best management practices and 2009 PHLF EIR Mitigation Measure 4.3-4, which requires erosion control measures (see Appendix D) would protect adjacent habitat from erosion and sedimentation. Therefore, the underground installation and long-term operation and maintenance of the distribution interconnect would have no impact on protected species or adjacent habitats.

The proposed LFGE project area contains foraging habitat for the state-listed threatened Swainson's hawk (*Buteo swainsoni*). Although the species is uncommon in the southern portion of Solano County, the aboveground portion of the distribution interconnect could have an adverse impact on this species. Collisions and other interactions with power lines may cause bird injuries and mortalities, especially to larger species such as raptors. Bird collisions with power lines tend to occur more during periods of low visibility, such as the foggy conditions common in the proposed LFGE project area, especially during the winter months. Therefore, the aboveground portion of the distribution interconnect would be designed and constructed according to the guidelines in the "Suggested Practices for Avian Protection on Power Lines: State of the Art in 2006" (APLIC 2006). In addition, 2009 PHLF EIR Mitigation Measures 4.1-3 and 4.2-7 (Appendix D) would reduce impacts to less than significant. These measures would require spacing of power lines 6 feet apart, preconstruction raptor nest surveys during the breeding season, and avoidance measures for active raptor nests. The applicant would also develop and implement an Avian Management Plan (Mitigation Measure BIO-4). These measures would reduce impacts on Swainson's hawk to less than significant.

Federal and California Special Status Species

The distribution interconnect route would cross areas that could provide nesting and foraging habitat for special status bird species including California fully protected (FP) species, California species of special concern (CSSC), and United States Fish and Wildlife Service (USFWS) birds of conservation concern (BCC), as listed below.

- Golden eagle (*Aquila chrysaetos*) - FP, BCC, Bald Eagle Protection Act
- Short-eared owl (*Asio flammeus*) - CSSC
- Burrowing owl (*Athene cunicularia*) - CSSC, BCC
- Northern harrier (*Circus cyaneus*) - CSSC
- White-tailed kite (*Elanus leucurus*) - FP
- Prairie falcon (*Falco mexicanus*) - BCC
- Peregrine falcon (*Falco peregrinus*) - FP, BCC

- Loggerhead shrike (*Lanius ludovicianus*) - CSSC, BCC
- Siusun song sparrow (*Melospiza melodia maxillaris*) - CSSC, BCC
- Long-billed curlew (*Numenius americanus*) - BCC

Construction of the distribution interconnect in the existing road right-of-way would not directly affect nesting habitat for these species. The potential for these species to interact with the aboveground power lines could result in injuries and mortalities, especially for larger species, such as raptors. The avoidance and mitigation measures discussed above for Swainson's hawk, 2009 PHLF EIR Mitigation Measures 4.2-6 and 4.2-7 (see Appendix D), minimization measures for avoiding impacts to burrowing owl, as well as Mitigation Measure BIO-5 requiring nesting bird surveys, would reduce impacts on these species to less than significant.

Migratory Bird Treaty Act

Nesting migratory birds are protected under the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. The USFWS definition of take under the MBTA is "to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof" (USFWS 2011b). Migratory bird nesting activity may occur in the LFGE plant location or in areas immediately adjacent to the LFGE plant or distribution interconnect route. Construction would have the potential to adversely impact nesting birds either by direct impacts in the work area, or by causing birds to abandon active nests in close proximity to the construction area. However, Mitigation Measure BIO-5 (nesting bird surveys) would reduce these impacts on avian species to less than significant.b), c) No Impact – The proposed LFGE project would not have a substantial adverse effect on federally protected waters or wetlands as defined by §404 of the Clean Water Act, riparian habitat, or other sensitive natural communities identified in local or regional plans, policies, regulations, or by CDFG or USFWS. While the proposed LFGE project passes through marsh and vernal pool areas, construction would be confined to the road right-of-way and impacts to riparian areas would be avoided. Therefore, the proposed LFGE project would have no impact on riparian or wetland habitats.

d) Less Than Significant Impact – The LFGE plant is located within the existing boundaries of the Potrero Hills Landfill in a previously disturbed area, and the distribution interconnect would be constructed within the existing road right-of-way. The construction of the distribution interconnect underground in the area adjacent to the wetlands used by migratory waterfowl would eliminate a potential migratory barrier that may have occurred if the distribution interconnect was constructed aboveground in this area. Because the proposed LFGE project would be constructed within the existing landfill boundaries and road right-of-way, as well the distribution interconnect being constructed underground adjacent to the wetland areas, the proposed LFGE project would not substantially interfere with the movement of any native fish or wildlife species, nor impede the use of established migratory corridors, or nursery sites by native species.

e) No Impact – The proposed LFGE project would be consistent with the Solano County component of the Suisun Marsh LPP (Solano County 2010). The LPP is the local (County) component of the Suisun Marsh Protection Plan (BCDC 1976), which ensures the protection and

preservation of the Suisun Marsh. The Suisun Marsh and adjacent lands are divided into Primary and Secondary Management Areas; the proposed LFGE project would occur in both areas. The LFGE plant is located within the Secondary Management Area. Its construction as part of the PHLF Phase II expansion (EDAW 2009) was found to be consistent with the Suisun Marsh Protection Plan (SMPP) and Solano County component of the LPP, and a Land Use Permit (U-88-33) and Marsh Development Permit (MD-88-09) were issued. The issuance of the Marsh Development Permit was subsequently appealed to the BCDC, resulting in the issuance of BCDC Permit 3-10(M), which superseded Marsh Development Permit MD-88-09. As a result, Marsh Development Permit MD-88-09 is no longer in effect. Solano County Land Use Permit U-88-33 is still in full force and effect. The distribution interconnect component of the proposed LFGE project would pass through both Primary and Secondary Management Areas. Consistent with Solano County component of the LPP criteria, the distribution interconnect would be constructed below ground in the Primary Management Area. Therefore, the proposed LFGE project would not conflict with local policies, plans, or ordinances.

f) No Impact – The proposed LFGE project would not conflict with the provisions of any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. As described above, the proposed LFGE project is consistent with the guidelines of Solano County's Suisun Marsh LPP.

Other habitat conservation efforts include the joint federal and state multi-agency 30-year stewardship plan for the Suisun Marsh called the Suisun Marsh Habitat Management, Preservation, and Restoration Plan. This plan will provide long-term guidance for tidal restoration, ongoing operations in managed wetlands and recovery actions for listed species. A Draft Programmatic Environmental Impact Statement (EIS)/EIR (Suisun Marsh Charter Group 2010) was prepared to evaluate this program and was published on October 28, 2010. Public meetings were held on November 18, 2010. Although not adopted, the proposed LFGE project would not likely conflict with this plan because it will not have significant impacts on listed species or adjacent protected habitat. The Solano Multispecies Habitat Conservation Plan (HCP) has not been formally adopted and is in final administrative draft form (SCWA 2009). However, the proposed LFGE project is not in conflict with any of the provisions of the draft HCP.

MITIGATION MEASURES

The following mitigation measures identified in the 2009 PHLF EIR would reduce the impacts to habitat, identified 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 to less-than-significant.

2009 PHLF EIR Mitigation Measure 4.1-3 Consistency with the Local Protection Program Policies Regarding Undergrounding Power Lines. Power lines installed on the project site shall be placed underground unless the project applicant can show that the underground installation would be so expensive as to preclude service, consistent with the requirements of Policy 1(c) of the Utilities, Facilities and Transportation section of the LPP. If power lines are constructed above ground, the wires shall be placed at least six feet apart.

2009 PHLF EIR Mitigation Measure 4.2-5 Effects on California Tiger Salamander. Mitigation for tiger salamanders shall include four components that address impacts on the various life stages of this species. The first component mitigates impacts on terrestrial (aestivation) habitat on the project site; the second component mitigates impacts on the aquatic breeding and larval development habitats; the third component compensates for impacts on terrestrial (aestivation) habitat for off-site pools whose watershed/terrestrial buffer would be affected by the proposed LFGE project; and the fourth component includes protection measures to minimize mortality of adults and larvae prior to and during construction, as well as during project operation. The project applicant shall develop a detailed plan for implementing these components; the plan shall be approved by the County, CDFG and USFWS prior to initiation of ground-disturbing activities.

All mitigation sites for California tiger salamanders must be located within the known range of the California tiger salamander in southern Solano County (i.e., roughly between the Potrero Hills area and the Jepson Prairie area to the north).

Component 1 – Terrestrial Habitat

a. The project applicant shall preserve in perpetuity an off-site parcel as mitigation for impacts on the California tiger salamander and its terrestrial habitat. The entire expansion area encompassing 210 acres provides essential habitat for tiger salamanders; therefore, the minimum size of the mitigation parcel shall be 210 acres.

Minimum criteria for off-site mitigation areas include the following

i. The site must be documented to support California tiger salamanders or be within 2,000 feet of a known breeding pond.

ii. If there is no breeding habitat onsite, there must be no impassable barrier between the mitigation site and the known breeding pond.

iii. The known breeding pond must be on land that is preserved as open space in perpetuity and managed as native wildlife and plant habitat.

All mitigation sites for California tiger salamanders must be located within the known range of the California tiger salamander in southern Solano County (i.e., the area roughly between the Potrero Hills area and the Jepson Prairie area on the north).

Sites with high potential for enhancement and restoration through activities such as constructing breeding ponds and increasing the carrying capacity of the upland terrestrial habitat (e.g., eliminating ground squirrel control) will adequately mitigate impacts at a 1:1 ratio (210 acres).

Sites with low potential for enhancement and restoration shall require larger ratios to mitigate impacts on tiger salamanders. The increased ratio will range from 1.5:1 to 3:1 and shall be determined by the County, CDFG and USFWS. Some characteristics of sites with low potential for enhancement and restoration may include sites greater than 2,000

feet but less than 3,000 feet from a known breeding pond, sites with a passable barrier to dispersal between the known breeding pond and the mitigation site, sites with minimal opportunities for creation of additional breeding ponds, and sites with permanent water bodies that support non-native predators such as exotic fish and bullfrogs. CDFG and USFWS must approve the proposed parcel as suitable habitat and acceptable for mitigation. The project applicant shall document the conditions on the site so that the appropriate mitigation ratio can be applied.

b. A conservation easement shall be placed on the mitigation parcel or parcels, establishing the land as wildlife habitat in perpetuity. The conservation easement must be completed prior to the initiation of ground-disturbing activities on the proposed LFGE project site. A habitat management plan shall be developed for the mitigation area that stipulates allowable activities on the site (e.g., grazing) and details enhancements to be completed on the site to improve the breeding and terrestrial habitat for tiger salamanders. The habitat management plan shall be submitted to CDFG, USFWS and the County for approval. The project applicant shall provide a secure source of funding to ensure completion of the enhancement activities on the site and provide for the long-term maintenance of the site.

Component 2 – Aquatic Breeding Habitat

a. Pond 5 shall be avoided during landfill construction. Upstream of the pond (east side of the pond), the extent of the watershed shall be designated as a buffer zone. On the west side of the pond, a 300-foot buffer shall be established. Neither staging nor construction shall occur within the buffer zone, nor shall any ancillary facilities be located or constructed within the buffer zone for the life of the project. The existing dilapidated barn west of Pond 5 provides upland terrestrial habitat for tiger salamanders and shall be avoided (left in disrepair) during landfill expansion and operation. Although this pond will be preserved, impacts on the upland buffer around the pond shall be subject to the compensation terms described in Component 3 below.

b. A minimum compensation ratio of 2:1 shall be applied to Ponds 1 and 4 (1.22 acres) that provide aquatic breeding habitat for California tiger salamanders. A minimum of 0.61acre of aquatic breeding habitat shall be preserved on the off-site mitigation site. An additional 0.61 acre of aquatic breeding habitat designed for tiger salamanders also shall be created on the off-site mitigation site. The combined acreage of Ponds 1 and 4 is 0.61 acre. Ponds 1 and 4 fall within the project footprint and will be removed during landfill development (the berm on Pond 4 was removed in 2000).

c. All aquatic habitat either preserved or created must have a hydroperiod sufficient to allow completion of California tiger salamander metamorphosis during an average rainfall year. Ponds must hold water for at least 12 weeks during winter and early to mid-spring. This will require that the watershed of the mitigation site be appropriately sized, as determined through a study of the hydrology on the site, to support all mitigation ponds preserved or created on the mitigation site.

Component 3 – Upland Buffers of Off-Site Ponds

a. Compensatory mitigation for the permanent loss of terrestrial buffer/watershed habitat for off-site ponds whose terrestrial buffers/watersheds would be affected by the proposed LFGE project shall be mitigated in addition to direct losses, as described in Component 2 above.

i. For purposes of this EIR, terrestrial buffer zones include the immediate natural contributing watershed to the individual pond or a 1,000-foot radius from the pond, whichever is larger.

ii. Development or loss of terrestrial habitat within the terrestrial buffer/contributing watershed shall be mitigated through construction of aquatic breeding habitat. Mitigation acreage shall be determined under the following criteria:

- Effects to 50 percent or less of the buffer area
- Mitigation Area = (buffer impacted/total watershed) x (area of affected wetland habitat)
- Effects to greater than 50 percent of the buffer area
- If greater than 50 percent of the watershed would be permanently affected, 1:1 mitigation is required for the affected aquatic habitat.

For this project, the buffer zones for Ponds 2, 5, and 6 would be affected by the proposed landfill development. Applying the formula above, an additional 0.16 acre of aquatic breeding habitat shall be preserved on the off-site mitigation areas as compensation for impacts on the adjacent ponds and their terrestrial buffers used for aestivation. The total acreage of aquatic breeding habitat to be preserved and created at the mitigation site shall be 1.38 acres (1.22 acres for the loss of ponds on the project site plus 0.16 acre for impacts on the associated terrestrial buffer of adjacent off-site ponds).

Component 4 – Protection Measures and Avoidance

a. A salamander-proof barrier (e.g., fence or curb) shall be erected around the perimeter of the landfill expansion site to prevent salamanders from moving onto the expansion area during ground-disturbing activities and operation of the landfill. The barrier also would help direct the salamanders to areas where breeding ponds are preserved. The project applicant shall submit plans for a barrier design with their mitigation plan for approval by the County, USFWS and CDFG.

b. Pond 1 and the Spring Branch Creek channel are located within the footprint of the expanded landfill and would be affected by landfill construction. To avoid potential impacts on larval salamanders in these aquatic features, all construction activities in and around Pond 1 and the Spring Branch Creek channel shall occur in late summer or early fall (August 1–October 15) when no standing is water present. Conducting activities at this time of year shall avoid mortality of larval salamanders that could be developing in the pond or creek. Construction activities at Pond 1 and Spring Branch Creek shall be

completed prior to the onset of the first rain of the season. The pond and creek shall be backfilled with soil, or excavated and drained to prevent their use as a breeding habitat during the life of the landfill. Once the aquatic habitats have been filled or excavated, additional construction activities can proceed in the vicinity of Pond 1 or Spring Branch Creek at any time of year.

c. A biological monitor shall conduct an employee training session for all operators and managers involved in ground clearing and landfill cell construction prior to the initiation of ground-disturbing activities. The purpose of the training is to inform the workers of the sensitive resources onsite, the resources that are being avoided, and the measures being implemented to avoid tiger salamanders and other sensitive resources. A biological monitor with appropriate permits from CDFG and USFWS shall be onsite during initial ground-disturbing activities to move or salvage and possibly relocate any adult salamanders unearthed during earth-moving activities. Once the initial ground-disturbing activities are completed, the monitor shall make periodic (monthly) checks of the site to document compliance with the protection measures. Monitoring visits shall continue through the first rainy season after the initial ground disturbance.

d. The project applicant shall investigate the feasibility of moving adult tiger salamander from the expansion area to the mitigation area prior to ground-disturbing activities. The project applicant shall consult CDFG and USFWS regarding this activity.

e. Ponds in the eastern valley survey area (Ponds 2, 6, and 7) shall be left intact and shall continue to provide breeding habitat for California tiger salamanders. Upland areas that provide terrestrial habitat also shall be left intact. No borrow areas or ancillary facilities shall be constructed outside the designated expansion area or within areas designated for avoidance.

f. Ground squirrel control, if required, shall be limited to only the expansion area. No ground squirrel control by poisoning, trapping, shooting, or other methods shall be allowed outside the expansion area or within the buffer around Pond 5.

2009 PHLF EIR Mitigation Measure 4.2-6 Effects on Burrowing Owl.

- Prior to construction activity, focused pre-construction surveys shall be conducted by the project applicant for burrowing owls where suitable habitat is present within 75 meters of the construction areas. Surveys will be conducted no less than 14 days and no more than 30 days prior to commencement of construction activities and surveys will be conducted in accordance with CDFG protocol (CDFG 1995).

- If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings will be submitted to CDFG for review and approval, and no further mitigation will be necessary.

- If occupied burrows are found, disturbance to the burrows shall be avoided by providing a buffer of 50 meters during the non-breeding season (September 1 through January 31)

or 75 meters during the breeding season (February 1 through August 31). In addition, a minimum of 6.5 acres of foraging habitat shall be preserved contiguous with each occupied burrow (CDFG 1995).

- If impacts to occupied burrows are unavoidable due to their location within the landfill footprint, onsite passive relocation techniques approved by CDFG shall be used to encourage owls to move to alternative burrows in the local vicinity that are outside of the impact area. However, no occupied burrows shall be disturbed during the nesting season unless a qualified biologist verifies through non-invasive methods that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Mitigation for foraging habitat for relocated pairs will follow guidelines provided in the California Burrowing Owl Consortium Guidelines (1993) which range from 6.5 to 19.5 acres or replacement habitat per pair.

2009 PHLF EIR Mitigation Measure 4.2-7 Effects on Other Raptors.

- If project activity would commence during the raptor nesting season (February 15 to September 15), preconstruction surveys shall be conducted in areas of suitable nesting habitat within 500 feet of project activity. Surveys will be conducted no less than 14 days and no more than 30 days prior to commencement of project activity. If no active nests are found, no further mitigation will be required.

- If active nests are found, disturbance of the nest shall be avoided by establishment of a 500-foot exclusion buffer. No project activity shall occur within the buffer area until a qualified biologist confirms that the young have fledged from the nest or the adults abandon the nest on their own. Orange construction fencing shall be installed around the buffer area to prohibit access by site personnel and equipment. Weekly monitoring of the nest by a qualified biologist shall be conducted to determine when the young fledge. Daily monitoring will be required to document that a nest has been abandoned. Construction activities can commence once the young have fledged.

In addition to the 2009 mitigation measures listed above, the following mitigation measures were identified as a result of the detailed biological resource analysis completed as part of this Initial Study and are necessary to reduce biological impacts to a less-than-significant level.

BIO-1, CTS Biological Monitoring. A USFWS-approved biological monitor will be present during any activities along the distribution interconnect with the potential for take of listed CTS during the winter breeding migration; i.e., rainy season and the summer young of the year dispersal period (June to August).

BIO-2, CTS Exclusion Fencing. Trenches, debris, and material stockpiles that are left overnight will be secured with temporary exclusion fencing or secure covers and all potential access points sealed. The temporary exclusion fencing or covered areas will be inspected by a biological monitor upon completion and prior to beginning work the next day. Temporary exclusion

fencing or covering is required during the CTS migration periods (i.e., rainy season and summer dispersal).

BIO-3, CTS Pre-work Inspections. Stored construction materials and equipment will be inspected prior to use or movement for sheltering CTS. Inspections are required during the CTS migration periods (i.e., rainy season and summer dispersal).

BIO-4, Avian Management Plan. An Avian Management Plan will be prepared as described in the Avian Protection Plan Guidelines (APLIC 2005) and submitted to the USFWS for approval.

BIO-5, Nesting Bird Surveys. Pre-construction surveys would be conducted within 14 days of the scheduled start of activities by a qualified biologist and repeated immediately prior to commencing activities with the potential to impact nesting migratory birds. Potentially active migratory bird nests will be monitored to assess whether a nest is active and whether a protective zone is required. No activities will be conducted within an acceptable protective zone established around active migratory bird nests. The size of the protective zone will be determined on a case-by-case basis depending upon the type of work, duration of the work, and the nesting species.

CONCLUSION

The LFGE plant would be constructed within the existing landfill and would implement the mitigation measures outlined in the 2009 PHLF EIR and above, the BCDC permit, and other regulatory requirements to protect CTS. If the distribution interconnect line is constructed during the CTS migration season, Mitigation Measures BIO-1, BIO-2, and BIO-3 would be implemented and would reduce CTS impacts to less than significant. Underground installation of the distribution interconnect would avoid impacts on other protected species and adjacent habitats by being located in elevated portions of the road right-of-way, which does not provide habitat for the protected species present in the adjacent vernal pool and marsh habitats. Collisions and other bird interactions with aboveground portions of the distribution interconnect line would be reduced to less than significant through design measures, as well as the 2009 PHLF EIR mitigation measures and Mitigation Measures BIO-4 (Avian Management Plan) and BIO-5 (Nesting Bird Surveys). The proposed LFGE project would have no impacts on wetlands, riparian habitat, or other protected habitats, and no impacts on consistency with local ordinances or provisions of any HCP or Natural Community Conservation Plan or other natural resources protection or conservation plan. The proposed LFGE project would have less than significant impacts to the movement of any native resident or migratory fish or wildlife species or established native resident or migratory wildlife corridors.

REFERENCES

Avian Power Line Interaction Committee (APLIC). 2005. Avian Protection Plan Guidelines (APP). A joint document prepared by APLIC and the USFWS. April. Available online at http://www.aplic.org/uploads/files/2634/APPguidelines_final-draft_Aprl2005.pdf

———. 2006. Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, D.C. and Sacramento, CA.

EDAW. 2005. Final Environmental Impact Report for the Potrero Hills Landfill Expansion Project. Prepared for the County of Solano, Department of Resource Management. Fairfield, CA. March.

———. 2009. Revision to the June 2008 Recirculated final Environmental Impact Report for the Potrero Hills Landfill Expansion Project. Prepared by the County of Solano. Fairfield, CA. May.

San Francisco Bay Conservation and Development Commission (BCDC). 1976. Suisun Marsh Protection Plan. San Francisco, CA. December.

———. 2007. Scientific Panel Review of Biological Resources, Impacts and Proposed Mitigation for the Potrero Hills Landfill Phase II Expansion. Prepared for Bay Conservation and Development Commission. San Francisco, CA. August.

———. 2010. Permit 3-10(M). Issued November 1, 2010 San Francisco, California.

Solano County. 2010. Suisun Marsh Local Protection Program Solano County Component August 2010 Amendment. Fairfield, CA. Available online at https://www.solanocounty.com/depts/rm/planning/suisun_marsh_local_protection_program.asp

Solano County Water Agency (SCWA). 2009. Solano Multispecies Habitat Conservation Plan (Final Administrative Draft). Prepared by LSA Associates, Point Richmond, CA. Accessed online at http://www.scwa2.com/Conservation_Habitat_FinalAdminDraft.aspx.

Suisun Marsh Charter Group. 2010. Suisun Marsh Habitat Management, Preservation, and Restoration Plan, Draft Environmental Impact Statement/Environmental Impact Report. October.

United States Fish and Wildlife Service (USFWS). 2010. Draft Biological Opinion on the Proposed Potrero Hills Landfill Phase II Expansion Project, Solano County, California. (81420-2007-F-1362).

———. 2011a. Federal Endangered and Threatened Species that Occur in or may be Affected by Projects in the Counties and /or U.S.G.S 7 ½ Minute Quads. [Web Page] Located at http://www.fws.gov/sacramento/es/spp_list/auto_list.cfm. Accessed: March 7, 2011.

———. 2011b. Listed species with critical habitat. [Web Page]; Located at: http://ecos.fws.gov/tess_public/CriticalHabitat.do?nmfs=1. Accessed: February 10, 2011.

5. CULTURAL RESOURCES

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:					
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 a unique 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?	☐	☒	☐	☐

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, determined that the landfill expansion project could affect unidentified cultural resources and as a result, the landfill expansion would result in cultural resource impacts. The 2009 PHLF EIR included mitigation measures to reduce these cultural resource impacts to a less-than-significant level. The 2009 PHLF EIR impacts and mitigation measures that are applicable to the LFGE project are identified in the analysis below. The cultural resources surveys and records searched conducted as part of the 2009 EIR included the area of the landfill where the LFGE plant is proposed. Results of these surveys and searches were negative for prehistoric and historic resources and the LFGE plant is proposed in an area of the PHLF that is has already been substantially disturbed. For these reasons, the cultural resources analysis included in this document is limited to a summation of the findings included in the 2009 PHLF EIR.

a) Less than Significant With Mitigation Incorporation – The proposed LFGE project would not cause a substantial adverse change in the significance of a historical resource as defined in §15064.5 because previous records searches and on-site surveys discussed in the 2009 PHLF EIR have not determined that historical resources exist on the proposed LFGE project site. The only structures over 50 years old identified within the landfill's footprint were located in the Phase II area, which is over 1 mile from the proposed LFGE project site. These structures were analyzed in previous studies and it was determined that they did not have any historic significance. The potential for historical resources to be present and obscured by fill material is low. Mitigation Measure 4.11-1 identified in the 2009 PHLF EIR MMRP would reduce any potential impacts on historical resources to less than significant.

b) Less than Significant with Mitigation Incorporation – The proposed LFGE project would not cause a substantial adverse change in the significance of a unique archaeological resource as defined in §15064.5 because previous records searches and on-site surveys discussed in the 2009

PHLF EIR have not determined that unique archaeological resources exist on the proposed LFGE project site. In addition, the proposed LFGE project lays within the Phase I area of the PHLF between the edge of the landfill's boundary and currently inactive Cell 9, in a previously filled and graded area. Contour maps show that between 20 and 50 feet of fill material was placed and graded in the area underlying the proposed LFGE project as part of the landfill's construction. Excavation for the footings and foundation of the LFGE plant would not exceed 10 feet. Therefore, the excavation would not impact native soils, and the potential for archaeological resources to be present and obscured by fill material is low. Mitigation Measure4.11-1 identified in the 2009 PHLF EIR MMRP would reduce any potential impacts on archaeological resources to less than significant.

c) Less than Significant with Mitigation Incorporation –The proposed LFGE project would not directly or indirectly destroy a unique paleontological or geological resource. As discussed in a) and b) above, the proposed LFGE project would not result in the excavation or disturbance of any native soils due to the thick layer of fill underlying the proposed LFGE project site. In addition, previous environmental review work did not reveal any significant impacts to paleontological resources associated with the landfill expansion. Therefore, the potential for paleontological resources to be present and obscured by fill material is low. Mitigation Measure 4.11-1 identified in the 2009 PHLF EIR MMRP would reduce any potential impacts on archaeological resources to less than significant.

d) Less than Significant with Mitigation Incorporation – The potential for human remains to be present beneath the proposed LFGE project is low. A record search and sacred lands review was conducted through the Native American Heritage Commission (NAHC) for the entire landfill expansion project in conjunction with the 2009 PHLF EIR. The results of the NAHC search indicate the absence of recorded archaeological sites and sacred lands on the property. If human remains are identified at any point during construction, work in the area would stop immediately and would not resume until approved to do so by the County coroner or other authorized legal authority. Mitigation Measure 4.11-1 identified in the 2009 PHLF EIR MMRP would reduce any potential impacts on human remains to less than significant.

MITIGATION MEASURES

The following mitigation measures identified in the 2009 PHLF EIR would reduce the impacts unidentified cultural resources to a less-than-significant level and no additional mitigation measures are necessary.

2009 PHLF EIR Mitigation Measure 4.11-1 Disturbance of Unidentified Cultural Resources. The project applicant shall implement the following measures for cultural resources discovered during project implementation activities.

- In the event that cultural or paleontological resources are encountered during project construction, all earth-moving activity in the specific construction area shall cease until the applicant retains the services of a qualified archaeologist or paleontologist. The archaeologist or paleontologist shall examine the findings, assess their significance, and offer recommendations for procedures deemed appropriate to either further investigate or

mitigate adverse impacts on those cultural or paleontological archaeological resources that have been encountered (e.g., excavate the significant resource).

- If human bone or bone of unknown origin is found during project construction, all work shall stop in the vicinity of the find and the County Coroner shall be contacted immediately. If the remains are determined to be Native American, the Coroner shall notify the Native American Heritage Commission. The Native American Heritage Commission shall notify the person considered to be the most likely descendant. The most likely descendant will work with the project applicant to develop a program for the re-internment of the human remains and any associated artifacts. No additional work shall take place within the immediate vicinity of the find until the identified appropriate actions have been completed.

- Project personnel shall not collect or retain artifacts found at the site. Prehistoric resources may include, but would not be limited to, chert or obsidian flakes; projectile points; mortars and pestles; and dark friable soils containing shell and bone, dietary debris, scorched rock, or human remains. Historic resources may include, but would not be limited to, stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits, including those in old wells and privies.

CONCLUSION

With implementation of the mitigation measure identified in the 2009 PHLF EIR and listed above, potential impacts to unidentified cultural resources would be considered less than significant.

6. ENERGY

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:					
a)	Result in a substantial increase in overall or per capita energy consumption?	☐	☐	☐	☒
b)	Increase reliance on natural gas and oil?	☐	☐	☐	☒
c)	Result in wasteful or unnecessary consumption of energy?	☐	☐	☐	☒
d)	Require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity?	☐	☐	☒	☐
e)	Comply with adopted energy efficiency standards?	☐	☐	☒	☐

The 2009 PHLF EIR energy analysis was not included as a separate resource analysis; it was discussed in the Utilities and Public Services resource analysis. The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would not result in energy impacts and no mitigation measures were required. This same finding is true for the LFGE project as currently proposed. A brief analysis is provided below.

a), b), c) No Impact – The proposed LFGE project would not result in a substantial increase in overall or per capita energy consumption, increase reliance on natural gas or oil, or result in wasteful or unnecessary consumption of energy. The proposed LFGE project would provide energy from a renewable source. The proposed LFGE project would require a small amount of power from PG&E in order to start the first engine. In order to start the first engine, the plant would require up to 0.5 MW of capacity and energy from PG&E for a period of up to two hours (i.e., less than one megawatt-hour). After the first engine becomes operational and is electrically connected to PG&E's transmission system and generating electricity, the proposed LFGE project would generate sufficient energy to provide for the internal use of the plant auxiliary equipment.

The proposed LFGE project would be self-sufficient with regard to electrical demand, as it would consume approximately 8% of the total energy generated from the LFG to supply internal auxiliary equipment loads. The draw on the grid for startup activities is minor in comparison to the 9.6 MW production of renewable energy that can be produced and will contribute to meeting the State of California's mandated RPS.

Energy expenditures to construct the proposed LFGE project would include both direct and indirect uses of energy. Combustion of diesel fuel and gasoline needed to operate construction equipment would be a part of the direct energy use. Though construction energy would be consumed only during the construction period, it would be a relatively small, but irreversible

drain on finite natural energy resources. Total supply of diesel fuel or gasoline within California could adequately accommodate the proposed LFGE project.

Because the proposed LFGE project would use LFG, a renewable resource, as opposed to natural gas or oil, to produce electricity, the proposed LFGE project would not result in increased reliance on natural gas or oil. The proposed LFGE project would, in fact, do the opposite. It would provide a source of electricity that is derived from a renewable source, thereby reducing reliance on natural gas and oil. This energy source would be consistent with California's renewable energy requirements. Executive Order S-14-08 set a target of 33% renewable energy by 2020, and Executive Order S-21-09 directed the CARB to adopt regulations increasing California's RPS to 33% by 2020. On April 12, 2011, Governor Brown signed into law Senate Bill 2X, which requires 33% of the state's energy to come from renewable resources.

Rather than flaring all LFG, the proposed LFGE project would combust LFG in internal combustion engines to produce electricity up to the maximum capacity of the engines, thus providing a beneficial use of a renewable resource that would otherwise be wasted. As a result, the proposed LFGE project would contribute toward achievement of California's mandated RPS.

The electricity generated by the facility would be delivered to the PG&E transmission system. As a new energy source, the proposed LFGE project would not create any significant adverse impacts on peak and base period demands for electricity and other forms of energy. Based upon these considerations, no adverse energy impacts are anticipated.

d), e) Less than Significant Impact – The proposed LFGE project would generate electricity that would be input into the state-wide electrical grid and used in northern California. In addition to the construction and operation of the LFGE plant, the proposed LFGE project would include the construction and operation of new power lines, as well as modifications of existing ones, to connect the LFGE plant to an existing PG&E power line. PG&E has a distribution line located at the intersection of Walters Road and Petersen Road in Suisun City, CA from the Peabody substation and this line from Peabody will be modified to include a separate circuit to the PHEP project. The line would likely be routed south on Walters Road and then southeast/east on Highway 12 to Scally Lane. Then the line would turn west and follow Kildeer Road to Potrero Hills Lane through the landfill entrance and end at the LFGE plant. An alternate route would involve routing the line along from Highway 12 along Potrero Hills Lane, through the landfill entrance and into the LFGE plant.

The distribution lines would be installed underground to the extent possible, unless demonstrated to have a greater adverse environmental effect than aboveground construction, or if the cost of underground installation would be so expensive as to preclude service.

The new distribution line would have a 21-kV capacity which would sufficiently transmit the 9.6 MW electricity generated from the proposed LFGE project. The extension of the existing power lines would result in an altered utility system that would be built by PG&E or by PHEP contractors and incorporated into their transmission system. However, the PG&E transmission system is large relative to the proposed LFGE project distribution line, and these changes would not result in a substantially altered transmission system. In addition, the installation of the proposed 21-kV distribution line would comply with existing energy standards. Therefore,

impacts to energy consumption from the installation of the new distribution line are considered less than significant.

CONCLUSION

The proposed LFGE project would have less than significant impacts on energy use because the project would not result in a substantial increase in overall per capita energy consumption and would generate electricity that would be connected to the state-wide electrical grid.

REFERENCES

California Air Resources Board (CARB). 2010. Resolution 10-23. September 2.

7. GEOLOGY / SOILS

Issues (and Supporting Information Sources):	*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 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 wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would result in geology and soils impacts related to faulting and seismic shaking, slope stability, potential excessive or differential landfill settlement, and erosion. The 2009 PHLF EIR included mitigation measures to reduce the geology and soils impacts to a less-than-significant level. The regional and site seismicity analysis and soil, rock and minerals analysis prepared for 2009 PHLF EIR included the area of the landfill where the

LFGE plant is proposed. Results of these analyses demonstrate that shallow soils may result in difficulty with placement of project components and the plant is likely to experience seismic activity during the lifetime of the project. Potential impacts from the proposed LFGE were adequately evaluated in the 2009 PHLF EIR analysis and no new or additional impacts are anticipated.. For these reasons, the geology and soils analysis included in this document is limited to a summation of the findings included in the 2009 PHLF EIR.

a) i. Less than Significant Impact – Alquist-Priolo Zones are established in areas of known Holocene surface fault rupture. The Alquist-Priolo Earthquake Fault Zone located nearest to the proposed LFGE project site is approximately 1 mile east of the proposed LFGE project site. This Alquist-Priolo Zone is located in the southwest corner of the Fairfield South Quadrangle Map (CDMG 1993). The Cordelia Fault is the nearest Holocene fault, and is located approximately 8 miles west of the site (CGS 2010). The absence of a fault on or immediately adjacent to the project site makes the potential for on-site fault rupture unlikely. Therefore, the project would not 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. Therefore the potential for exposure to adverse effects resulting from rupture of an earthquake fault is less than significant.

a) ii. Less than Significant Impact with Mitigation – The proposed LFGE project site could be affected by ground shaking associated with the following active and potentially active faults: the Cordelia Fault located approximately 8 miles west of the site, the Vaca-Kirby Hills Fault located approximately 3.5 miles east of the site, the San Andreas Fault located approximately 43 miles west of the site, and the Hayward Fault located approximately 25 miles west of the site (CGS 2010). The Birds Landing Seismic Zone in the Central Valley Coast Ranges Fault (6 miles west of the site) and the Green Valley Fault (9 miles west of the site) could subject the site to strong shaking because of their proximity (CGS 2010).

As discussed in the 2009 PHLF EIR, the San Andreas Fault and the Central Valley Coast Ranges Fault could subject the proposed LFGE project site to strong shaking. EDAW determined in the 2003 Draft EIR that "in the absence of appropriate engineering measures, such relatively strong ground shaking could cause permanent horizontal displacement of the refuse column; slope failure; liquefaction; damage to the landfill liner, drainage or gas collection systems; damage to structures; or onsite safety hazards. This impact would be considered significant." Mitigation Measure 4.3-1 of the 2009 EIR MMRP states that the final design of the proposed landfill expansion would be in accordance with the requirements of California Code of Regulations (CCR) Title 27, Section 20370, which requires proposed structures to be constructed at the proposed LFGE project site with the ability to withstand ground shaking associated with the Maximum Probable Earthquake without damage to the foundations or to the features of the landfill, such as structures which control leachate, surface drainage, erosion, or gas (CCR 2011).

The Solano County, Resource Management Department, Building and Safety Division issues building, grading, and other construction related permits, performs inspections of permitted construction, grading, and building improvements for compliance with all applicable codes and regulations, and enforces mandated State and Federal Codes, as well as County-adopted California Building Standards Codes. The County Building Code is based on the California

Building Code and is enforceable by law. The proposed LFGE project would be required to design all components of the renewable energy facilities according to the California Building Code earthquake design requirements based on the appropriate Seismic Design Category classification. Facilities that meet California Building Code design standards have a built in factor of safety to protect people and structures from risk of loss, injury, or death involving strong seismic ground shaking, or seismic-related ground failure, including landslides among other important geologic hazards.

Implementation of the PHLF MMRP mitigation measure 4.3-1, along with compliance with CCR Title 27, Section 20370 and applicable building codes, would reduce impacts to the proposed LFGE project from seismic ground motion to less than significant. Structures proposed to be constructed at the proposed LFGE project site would be built in accordance with current building codes, which address the potential for seismic ground motion. Therefore the potential for exposure to adverse effects resulting from seismic ground shaking would be less than significant.

a) iii. Less Than Significant Impact – The risk of seismic liquefaction (change from solid to liquid in certain saturated soils, as a result of ground shaking) is greatest in areas with shallow groundwater (less than 50 feet below ground surface) and well-sorted unconsolidated sandy sediments. As discussed in the Public Health and Safety Element of the Solano County General Plan, "recent County efforts aimed at recharging the water table have been successful, but produced the unforeseen consequence of increasing liquefaction potential in the central and eastern portions of the county" (Solano County 2008). Figure HS-6 of the Solano County General Plan indicates that the liquefaction potential of the proposed LFGE project area is low to very low (Solano County 2008). Based on this information, liquefaction would pose a less than significant impact to the proposed LFGE project site.

a) iv. Less Than Significant Impact with Mitigation – Landslides are often triggered by an earthquake, heavy rainfall, or changes in ground conditions caused by land development activities. Areas with slopes greater than 15 percent are more susceptible to landslides. As shown in Figure HS-4 of the Solano County General Plan, the proposed LFGE project is in an area with slope percentage ranging from 4 to 14.9 percent (Solano County 2008). The Solano County General Plan Public Health and Safety Element includes a map of land stability (Figure HS-5 Landslide Stability, of the General Plan) and the proposed LFGE project site is outside of the analyzed portion of the county. Based on this limited information, it appears that a landslide could pose a potentially significant impact to the structures that are to be constructed as part of the proposed LFGE project.

However, by following the appropriate geologic and engineering design and implementing the slope stability mitigation measure in the 2009 PHLF EIR, The proposed LFGE project would incorporate the necessary recommendations to maintain the appropriate factor of safety for landslides. Specifically, all future structures at the site will be constructed in accordance with current building codes, which address the potential for landslides. As stated above, a site-specific geotechnical investigation is to be conducted prior to redeveloping the site to verify these results, and to collect data for a project design that would appropriately mitigate risks associated with landslides, in accordance with current construction codes and practices. Therefore the potential for exposure to adverse effects resulting from landslides is less than significant.

b) Less Than Significant Impact with Mitigation – Implementation of the proposed LFGE project would result in temporary ground disturbances, which would potentially increase rates of soil erosion and sedimentation. However, because site topography is relatively flat and the site contains surface water runoff control features, runoff migrating off-site is anticipated to be minimal. Any necessary grading would not create steep slopes subject to substantial erosion. The site would continue to drain surface water runoff to the stormwater retention pond adjacent to the recycling area that allows the stored surface water to percolate to groundwater or enter Stormwater Control Basin No. 1. Neither the direction nor the volume of surface water runoff at the site would be altered substantially. In addition, the proposed LFGE project would be designed in accordance with CCR Title 27 requirements. Negligible off-site transport of sediment or other materials is anticipated during the construction and operational phases of the proposed LFGE project. Proposed project area soils are susceptible to wind erosion if vegetative cover is not maintained. Although the proposed LFGE site is relatively flat, minimal to no stormwater runoff anticipated, grading would not result in steep slopes and the project would be designed in accordance with CCR Title 27 requirements, the soil erosion mitigation measures identified in the 2009 PHLF are applicable to the proposed project to help reduce potential erosion impacts to a less-than-significant level.

c) Less Than Significant Impact – As described above, while the proposed LFGE project would be located in an area subject to landslides and other unstable soil conditions, through adherence to current building codes, impacts from potential soil instability would be less than significant. No mines, karst topography, or oil and natural gas extraction are known to exist beneath the proposed LFGE project area. There would be no impact resulting from landslides, lateral spreading, subsidence or collapse. The potential for impacts resulting from liquefaction would be less than significant.

d) Less Than Significant Impact – Soils containing high clay content often have a high potential for expansion/contraction when they become saturated and then later dried out. This property of clay ("shrink/swell") can negatively impact building foundations and other support structures. The surface soil at the site is primarily Clear Lake clay, which has a clay percentage of approximately 50 percent and therefore is considered expansive and thus subject to shrinking and swelling (NRCS 2011). A site-specific geotechnical investigation would be conducted to evaluate the expansivity of the local soils, and to collect data so that the design of the foundations for the structures proposed to be constructed at the site would appropriately mitigate any risks associated with the expansive soil. Also the buildings will be constructed in accordance with current building codes. Therefore, the potential for exposure to adverse effects resulting from expansive soils would be less than significant.

e) Less Than Significant Impact – The proposed LFGE project includes the installation of a septic system to manage wastewater discharge associated with the employee sanitary facilities. A septic system receives wastewater and solids from the sanitary facilities and then disposes of the effluent from the waste by permitting it to absorb into soils at the property in an area designated for draining the system. Proper septic system design for the level of usage and soil conditions is critical if the system is going to have a long useful life. The septic system would be designed to support the one to two full-time employees that would operate the LFGE plant. In order to ensure that the drain field does not cause flooding or unsafe conditions associated with the wastewater discharge, the soils must meet a minimum size to support the wastewater discharge and

necessary biological activity to naturally treat the effluent and maintain the necessary percolation rates to accommodate the wastewater discharge volumes on a daily basis.

The area designated for the proposed septic system would be designed and installed as the project is built. The design of the septic system would be submitted with a Sewage Disposal System permit application to the Solano County, Department of Resource Management, Environmental Health Division and would be required to conform to the Solano County On-Site Sewage Disposal Standards (Solano County Code, Chapter 6.4). The proposed LFGE project would comply with all Solano County, Department of Resource Management, Environmental Health Division requirements; therefore, this impact would be less than significant.

MITIGATION MEASURES

The following mitigation measure identified in the 2009 PHLF EIR would reduce the impacts from strong seismic ground shaking to less-than-significant.

2009 PHLF EIR Mitigation Measure 4.3-1 Faulting and Seismic Shaking. The final design documents for the proposed landfill expansion shall be prepared pursuant to the requirements of CCR Title 27, Section · 20370. These regulations require that the final design documents for the proposed landfill expansion demonstrate the ability of the landfill to withstand ground shaking associated with the Maximum Probable Earthquake (MPE) without damage to the foundations or to the structures which control leachate, surface drainage, erosion, or gas.

In addition, the design recommendations included in the *1999 Geology and Geotechnical Engineering Evaluation* (EMCON, May 1999) for the site shall be implemented. These include the following design elements.

- During excavation of cut slopes, engineering geologic mapping shall be required to confirm the findings of the *1999 Geology and Geotechnical Engineering Evaluation.*
- MSW slopes in the Pre-Subtitle D area shall not be constructed at angles greater than 3:1 with required benching at least every 100 feet.
- MSW slopes in the Subtitle D area shall not be constructed at angles greater than 4:1. < Site specific geosynthetic materials and geomembrane-clay interface strengths shall be confirmed by testing prior to construction in the Subtitle D area.
- The cover system over the Subtitle D area shall be maintained by providing a minimum interface friction angle of 24 degrees above the geomembrane and an interface shear strength (adhesion) of 200 pounds per square foot between the geomembrane and lowpermeability soil under low overburden pressures. The values shall be verified during the final design of the cover system.
- Preliminary dewatering of the saturated sandstone above the proposed base grades shall occur.
- In existing slide areas, the slide material shall be removed before cell development

- Provisions shall be made to repair potential surficial slides in the temporary and permanent excavation slopes. This may require buttressing, reinforcing, or repairing the slopes.

- Surficial soils beneath composite-lined areas of the landfill shall be removed to minimize foundation settlements.

2009 PHLF EIR Mitigation Measure 4.3-1 Slope Stability. The final design documents for the proposed landfill expansion shall be prepared pursuant to the requirements of CCR Title 27, Section 21090. These regulations require that the integrity of the final slopes under both static and dynamic conditions be ensured. Section 21090 specifies maximum final slopes and minimum design requirements, and requires a slope or foundation stability report for final slopes that exceed a horizontal to vertical ratio of 3:1 for slopes in areas subject to liquefaction or unstable areas with poor foundation conditions. In addition, the design recommendations included in the *1999 Geology and Geotechnical Engineering Evaluation* (EMCON, May 1999) for the site shall be implemented. These design recommendations are identified in Mitigation Measure 4.3-1 above.

2009 PHLF EIR Mitigation Measure 4.3-4 Erosion. In order to minimize the potential for increased soil erosion on the site, the landfill expansion shall be designed in accordance with the drainage and erosion control requirements of CCR Title 27 §§20365, 20190, 21150, and 21750. CCR Title 27 requires engineered controls to limit erosion associated with facility operations. These controls typically include diversion of storm water runoff using temporary swales or interceptor ditches, retention of existing vegetation wherever possible, stabilization of barren soils with jute netting or geotextile fabric, installation of erosion-resistant layers, application of straw or mulch after seeding, installation of silt fences, berms, or hay bales to direct runoff away from construction areas, and visqueen sheets (plastic vapor barriers) or tarps to cover stockpiled soils.

CONCLUSION

The proposed LFGE project would result in less than significant impacts on geology and soils because the a geotechnical investigation would be conducted for the proposed LFGE project, and the proposed LFGE project would comply with existing regulations, policies, and codes that would ensure the project would result in less than significant impacts.

REFERENCES

California Code of Regulations (CCR). 2011. Title 27, Environmental Protection – Division 2, Solid Waste. http://www.calrecycle.ca.gov/Laws/regulations/Title27/default.htm

California Division of Mines and Geology (CDMG). 1993. State of California, Special Studies Zones, Fairfield South Quadrangle. Revised Official Map.

California Geological Survey (CGS). 2010. 2010 Fault Activity Map of California. http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html. Accessed April 2010.

EDAW. 2003. 2003 Draft EIR for Potrero Hills Landfill Expansion. Prepared for the County of Solano, Department of Resource Management. Fairfield, CA.

National Resources Conservation Service (NRCS). 2011. Web Soil Survey, National Cooperative Soil Survey. http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx. Accessed April 2011.

Solano County Planning Department. 2008. Solano County General Plan. November.

8. GREENHOUSE GASES

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy or regulation of a District adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

The 2009 PHLF EIR determined that the GHG emissions impacts from the landfill expansion would be significant and unavoidable, even with mitigation. This determination was made before BAAQMD had adopted thresholds of significance for GHG emissions. None of the adopted mitigation measures from the 2009 PHLF EIR are applicable to the proposed LFGE project. The 2009 PHLF EIR did not quantify impacts from GHG emissions generated from the LFGE portion of the project. Assessment of GHG emissions was recently added to the BAAQMD CEQA guidelines and the BAAQMD checklist. The following subsections provide a detailed assessment of GHG emissions from the proposed LFGE project.

An analysis of GHG emissions associated with the proposed LFGE project was conducted. The analysis is consistent with CEQA Guidelines issued by the BAAQMD in May 2011 to determine whether the GHG emissions associated with the proposed LFGE project would be below thresholds of significance listed in the BAAQMD Guidelines. A project's impact is considered significant if it exceeds the significance thresholds provided in Table 15.

Table 15

Project-Level GHG CEQA Thresholds of Significance

Source	Construction-Related	Operational-Related
GHGs – Non-stationary (Area, Mobile, & Indirect) Sources	None	1,100 MT/yr of CO2e (excluding biogenic CO2e)
GHGs - Stationary Sources	Not Applicable	10,000 MT/yr of CO2e (excluding biogenic CO2e)

Notes:

MT/yr = metric tons per year

Although the 2011 BAAQMD Guidelines do not include a significance threshold for construction-related GHG emissions, the BAAQMD Guidelines recommend that the lead agency quantify and disclose GHG emissions that would occur during construction, and make a determination on the significance of these construction-related GHG emission impacts. To determine the potential impacts from greenhouse gas emissions from the construction of the proposed LFGE project, URBEMIS was used to estimate construction emissions. Table 16 presents construction GHG emissions.

Table 16

GHG Construction Emissions

Source	Activity	Emissions (MT)			
		CO_2	CH_4	N_2O	CO_2e
LFGE Plant	Site Work	21	3.0E-03	5.4E-04	21
	Paving	6	7.9E-04	1.4E-04	6
	HDPE Installation	1	1.5E-04	2.8E-05	1
	Concrete (Foundation)	11	1.5E-03	2.8E-04	11
	Building Construction	177	2.5E-02	4.5E-03	179
	Subtotal	216	3.0E-02	5.5E-03	218
Distribution Line Interconnection	Pole Installation	13	1.9E-03	3.4E-04	13
	Trenching	1	1.4E-04	2.6E-05	1
	Setting pull boxes	0.35	5.0E-05	9.0E-06	0.36
	Compaction	0.60	8.5E-05	1.5E-05	0.61
	Conductors	9	1.3E-03	2.3E-04	9
	Subtotal	24	3.5E-03	6.2E-04	25
Total		240	3.4E-02	6.1E-03	243

Notes:

Numbers shown are rounded.

CH_4 = Methane

CO_2e = Carbon dioxide equivalent. CO2e is a metric that accounts for the emissions from the various greenhouse gases based on their global warming potential (GWP). A GWP of 21 was used for CH_4 and a GWP of 310 was used for N_2O.

N_2O = Nitrous oxide

Greenhouse gas emissions from the operation of the proposed LFGE project were estimated using air permit application information and the BAAQMD GHG Model and compared with applicable screening criteria identified in the 2011 BAAQMD Guidelines. Tables 17 and 18 presents operational GHG emissions from non-stationary (mobile, area, and indirect) and stationary sources, respectively. As discussed in the BAAQMD Guidelines, biogenic CO_2 emissions should not be included in the quantification of GHG emissions for a project. Therefore CO_2 emissions associated with LFG combustion (generators, regeneration flare, and the existing flare) are not considered when comparing emissions to the significance threshold.

Table 17

Proposed Project Non-Stationary Sources

Greenhouse Gas Emission Rates

Processes / Scenario	CO_2	CH_4	N_2O	Total CO_2e	Non-biogenic CO_2e
	(MT/yr)	(MT/yr)	(MT/yr)	(MT/yr)	(MT/yr)
Proposed Project					
Solid Waste Generation	0.02	0.12	0	3	3
Water Use	0.03	0	0	0.03	0.03
Transportation	2	0	0	2	2
Electricity	31	0.0003	0.00010	31	31
Natural Gas	3	0.00031	0.000010	3	3
Total					39
Significance Threshold					1,100
Significant?					NO

Notes:

Numbers shown are rounded.

Table 18

Comparison of Baseline and Proposed Project Scenarios

Greenhouse Gas Emission Rates from Stationary Sources

Processes / Scenario	CO_2	CH_4	N_2O	Total CO_2e	Non-biogenic CO_2e
	(MT/yr)	(MT/yr)	(MT/yr)	(MT/yr)	(MT/yr)
Proposed Project					
Generators	44,494	334	0.086	51,535	7,041
Regeneration Flare	1,468	3	0.0028	1,526	58
Subtotal	45,962	337	0.089	53,060	7,099
Baseline	289	1	0.034	310	22
Difference					7,077
Significance Threshold					10,000
Significant?					NO

Notes:

Numbers shown are rounded.

GREENHOUSE GAS IMPACT ANALYSIS

a) **Construction Emissions.** As shown in Table 16, the estimated CO_2e emissions from the construction of the proposed LFGE project would be 243 metric tons. BAAQMD has not adopted a significance threshold for GHG emissions from construction. These emissions are temporary in nature and are also well below the thresholds for operational emissions adopted for stationary sources (10,000 MT/year) or for other land use projects (1,100 MT/year). Construction GHG emissions are therefore considered to have a less than significant impact.

Operational Emissions. Table 17 shows that non-stationary source GHG emissions will increase by approximately 39 MT/year, which would be below the corresponding significance threshold of 1,100 MT/year. Table 18 indicates that compared to baseline conditions, the proposed LFGE project would increase stationary source GHG emissions by approximately 7,077 MT/year, which would be below the significance threshold of 10,000 MT/year. Therefore, the increase of GHG emissions from the proposed LFGE project is considered to be less than significant.

b) No Impact – As shown in Tables 17 and 18, the proposed LFGE project would have a less than significant impact for GHG emissions. The proposed LFGE project would not conflict with

applicable plans, programs, policies and regulations including the Solano County Climate Action Plan, Bay Area Climate Change Compact, or the California AB 32 Scoping Plan.

CONCLUSION

The proposed LFGE project's construction and operational GHG emissions would be below significance thresholds and therefore would result in a less than significant impact. The proposed LFGE project would not conflict with applicable plans established to reduce GHG emissions.

REFERENCES

Association of Bay Area Governments. (ABAG). 2008. Bay Area Climate Change Compact. September.

Bay Area Air Quality Management District (BAAQMD). 2011. California Environmental Quality Act (CEQA) Air Quality Guidelines. May.

California Air Resources Board (CARB). 2008. AB 32 Climate Change Scoping Plan. December.

Solano County. 2010. Solano County Climate Action Plan. Draft.

9. HAZARDS & HAZARDOUS MATERIALS

Issues (and Supporting Information Sources):	*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?	☐	☐	☐	☒

The 2009 PHLF EIR did not address hazards and hazardous material impacts. The construction and operation of the proposed LFGE plant would include transport, use and storage of hazardous materials, namely the combustion of LFG, which primarily contains methane, and the storage of

oils in above ground containers. The 2009 PHLF EIR did not include a detailed analysis of the potential impacts related to hazards and hazardous resources; therefore, the following subsections assess the potential impacts of the proposed LFGE project.

a) Less Than Significant Impact – Hazardous materials may include solids, liquids, or gaseous materials that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, could pose a threat to human health or the environment. The proposed LFGE project would involve the combustion of LFG, which primarily contains methane, a gas that, while not a direct hazard to human health, is nonetheless classified as hazardous due to its potential to combust when present in concentrations above the lower explosive limit[6]. In addition to the use of LFG containing methane, the proposed LFGE project would require the storage of oil in aboveground containers for the engines, makeup oil, fresh oil, waste oil, and transformer oil. The maximum oil inventory for the site would be 4,158 gallons. Small amounts of ethylene glycol for cooling and small amounts of cleaning agents are also expected to be used.

Explosions can occur when concentrated methane is trapped or leaked and then inadvertently exposed to an ignition source. Therefore, care must be taken to assure that the methane which would serve as the fuel for the engines in the proposed LFGE project is properly contained. In addition, methane is considered a greenhouse gas and as such, is viewed as a contributor to global climate change. Federal and state laws require landfill operators to control, collect and destroy methane generated by landfills through combustion to prevent it from escaping to the atmosphere. Landfills and LFG combustion equipment are subject to BAAQMD Regulation 8, Rule 34. This regulation requires landfills with more than 1 million tons of refuse in place to collect and control the LFG that is generated by waste decomposition and specifies numerous operating, monitoring, and reporting requirements for subject operations. Regulation 8, Rule 34 has required that the LFG generated at PHLF be controlled by an active LFG collection system, which has been in operation at PHLF since 1992. The LFG collection system was expanded and upgraded in 2006 in order to capture the increasing quantity of LFG generated by the expanded landfill. In addition to the leak monitoring requirements that would apply to the LFG collection system, all buildings constructed for the proposed LFGE project would be equipped with methane detection systems.

All aboveground oil-containing devices, including the aboveground storage tanks for the fresh oil and waste oil, as well as engine, makeup, and transformer oil containers, would be equipped with secondary containment as required by federal, state, and local law. The aboveground storage tanks would be inspected for tank integrity on a regular basis as required by California's Aboveground Petroleum Storage Act. In addition, because the site would have an oil storage capacity over 1,320 gallons, the facility operator would be required under federal regulations to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan. The SPCC Plan would include information, such as spill prevention, planning, emergency response, and spill response, release reporting, and cleanup procedures for releases of oil.

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[6] Lower Explosive Limit (LEL): The lowest concentration (percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (arc, flame, heat). At a concentration in air below the LEL, there is not enough fuel to continue an explosion.

Because the hazardous materials stored on-site, such as the various oils, exceed the reporting thresholds established under the California Hazardous Materials Business Plan Program law and regulations, the project proponents also would be required to prepare and submit a Hazardous Materials Business Plan (HMBP) for this project. An HMBP includes an inventory of all hazardous materials stored above threshold quantities (55 gallons of liquids, 200 pounds of compressed gas or 500 pounds of solid) and an emergency response/contingency plan.

The transport and disposal of hazardous waste from the site would be conducted in accordance with federal safety regulations promulgated by the federal Department of Transportation. These include regulations governing the transfer of hazardous waste to a registered hazardous waste hauler, the transport of hazardous waste by a registered hazardous waste hauler, required documentation including manifests, and the appropriate training of personnel involved in hazardous waste transport.

The project proponent would prepare and implement separate Stormwater Pollution Prevention Plans (SWPPP) for construction and operation of the proposed LFGE project. Among other measures, the SWPPPs would discuss where any hazardous materials may be stored during construction or operation and the protective measures including best management practices, notifications, and cleanup requirements for any accidental spills or other releases of hazardous materials that would be implemented.

The 2009 PHLF EIR public safety analysis included mitigation measures for public health hazards related to expanded landfill gas and composting, potential attraction of vectors that spread disease, bird strikes with Travis AFB, expansion of night lighting, and human exposure to biosolids in connection with the composting operation. None of these measures are applicable to the LFGE project as the proposed project will not expand the landfill's gas generation; or increase the potential for vectors, birds, night lighting nor increase human exposure to biosolids. All of these previously identified measures relate to other components of the landfill expansion that was previously analyzed and are not applicable to the LFGE project.

The addition of the optional SCR project component would involve storage and use of urea-based ammonia. Urea is less hazardous than other forms of ammonia (e.g., aqueous ammonia), and would not represent a significant hazard. Storage and use of urea under this optional project component would be performed consistent with the requirements described above for other materials. No new regulatory requirements would be triggered by the use of urea under this optional project component.

The use of SCR would also result in generation of spent catalyst that could potentially require disposal as a hazardous waste. Over time, SCR catalyst material (typically comprised of base metals or precious metals) is fouled by impurities in the exhaust stream, reducing its effectiveness in controlling NOx emissions. This material may require disposal as a hazardous waste, although many SCR catalyst suppliers also recycle spent catalyst in order to recover metals for reuse.

With adherence to and compliance with local, state, and federal regulations, the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials is less than significant.

b) Less Than Significant Impact – All appropriate and legally required secondary containment, leak detection and monitoring requirements would be followed for hazardous materials stored on-site. With adherence to and compliance with local, state, and federal regulations addressing the quantities of hazardous materials anticipated to be stored or used, impacts would be reduced to a less than significant level.

c) No Impact – No schools or proposed schools are located within 0.25 mile of the proposed LFGE project site. Consequently, there would be no potential for the proposed LFGE project to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste in the vicinity of an existing or proposed school. Therefore, no impact would occur.

d) No Impact – A review of state and federal databases was conducted addressing the proposed LFGE project site and the surrounding 2-mile area to identify hazardous waste facilities subject to corrective action, land designated as hazardous waste property or border zone, hazardous waste disposed of on public land, and sites included in the Abandoned Site Assessment Program. The assessment confirmed that the proposed LFGE project would not be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Consequently, the proposed LFGE project would not result in an impact to the public or the environment through inclusion on a listed hazardous material site.

e) No Impact – The proposed LFGE project is not located within an airport land use plan area or within 2 miles of a public airport or public use airport. Travis Air Force Base is located approximately 2 miles from the site, but the hazardous materials that would be used or stored on the site of the proposed LFGE project do not conflict with any of the restrictions or provisions of the Travis Air Force Base Land Use Compatibility Plan. The proposed LFGE project would not result in a safety hazard for people residing or working in the proposed LFGE project area as a result of being in the vicinity of an airport. No impact would occur.

f) No Impact – The proposed LFGE project is more than 8 miles from the nearest private airstrip, and the location would not result in a safety hazard for people residing or working in the proposed LFGE project area. No impact would occur.

g) No Impact – The proposed LFGE project would not interfere with implementation of or physically interfere with an adopted emergency evacuation plan. The only applicable emergency response plan that includes the area of the proposed LFGE project is the Solano County Hazardous Materials Area Plan, adopted in 2008. The proposed LFGE project would not interfere with the implementation of any of the components of this emergency response plan. Therefore, no impact would occur.

h) No Impact – The proposed LFGE project may increase the potential for additional incidents related to fire and fire safety. Electrical fire sources, such as sparks from proposed project wiring and connectivity could create a fire hazard. In terms of fire hazards, the proposed LFGE project would be located within the boundaries of an active solid waste landfill which does not support vegetation or fuel that could lead to the spread of wild fires. Minimal or no landscaping is proposed for the proposed LFGE project site, and weeds and vegetation around the facility would be controlled. The building and equipment associated with the proposed LFGE project would meet all applicable fire codes. Fire suppression at the site during the construction and operation phases would primarily consist of appropriately-rated fire extinguishers. The proposed

LFGE project is not located near any population centers. With the implementation of the safety precautions described above, fire hazards pose no risk to life and property. Therefore, no impact would occur.

CONCLUSION

The proposed LFGE project would result in less than significant impacts in terms of hazards and hazardous materials. Proposed project construction and operation would require minimal use and transportation of hazardous materials, which primarily consist of fuel, lubricant, and cooling oils. The proposed LFGE project generally is built of non-flammable materials (metal and concrete). Electrical fire sources, such as sparks from proposed project wiring and connectivity could create a fire hazard; however, the fuel load on the site and in the surrounding area is low, and the methane collection system currently in place is subject to extensive leak detection and monitoring requirements.

REFERENCES

Bay Area Air Quality Management District (BAAQMD). 2005. Regulation 8, Organic Compounds, Rule 34, Solid Waste Disposal Sites, last revised June 15, 2005.

Solano County. 2008. Hazardous Materials Area Plan.

Solano County Airport Land Use Commission. 2002. Travis Air Force Base Land Use Compatibility Plan.

State of California, Health and Safety Code Sections 25500-25520, Hazardous Materials Business Plans.

State of California, Governor's Office of Emergency Services, California Code of Regulations, Title 19, Division 2, Chapter 4, Hazardous Materials Release Reporting, Inventory and Response Plans.

State of California Water Resources Control Board, Division of Water Quality System (NPDES) General Permit for Storm Water Discharges Associated with: (1) Construction and Land Disturbance Activities, Order No. 2010-0014-DWQ, NPDES No. CAS000002, effective date July 1, 2010, and (2) Industrial Activities, Order No. 97-03-DWQ, NPDES No. CAS000001.

U.S. Environmental Protection Agency, Spill Prevention, Control and Countermeasure Plan Requirements, U.S. Code of Federal Regulations, Title 40, Part 112.

10. HYDROLOGY / WATER QUALITY

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:					
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 of 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 of seiche, tsunami, or mudflow?	☐	☐	☒	☐

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would result in water resource impacts from increased erosion and potential effects on surface and groundwater quality. The 2009 PHLF EIR included mitigation measures to reduce these water resource impacts to a less-than-significant level. The 2009 PHLF EIR impacts and mitigation measures that are applicable to the LFGE project are identified in the analysis below which has been prepared to provide a more detailed assessment of the LFGE component now that more details about its design are available (see Project Description).

a) Less Than Significant Impact – The proposed LFGE project site is located upstream of Suisun Marsh. Spring Branch Creek, an ephemeral drainage, parallels the southern boundary of the landfill and flows west into First Mallard Branch, a tributary of Suisun Sloughs, part of the Sacramento-San Joaquin Delta. The proposed LFGE project distribution interconnect line would cross an upstream reach of Suisun Slough north of the landfill entrance traversed by the landfill access road.

The Porter-Cologne Water Quality Act protects beneficial uses of both surface water and groundwater. The SFRWQCB's Basin Plan contains narrative and numerical water quality objectives to protect waters in the Suisun Basin, including Suisun Slough and its tributaries in the proposed LFGE project area. Beneficial uses include stock watering, domestic water supply, wildlife and fish habitat, estuarine habitat, and recreation (SFRWQCB 2010).

Potable drinking water (in the form of bottled water) and a restroom facility (consisting of a septic and leach field system) would be provided for PHEP employees. Other sources of wastewater would be rinsate from cleaning the floors and condensate from the air compressor(s). Any condensate collected from the compressors in the LFG treatment process would be returned to the landfill's leachate collection and disposal system in accordance with PHLF's Waste Discharge Requirements and San Francisco Regional Water Quality Control Board (SFRWQCB) requirements. Any rinse water from the engine building would be collected in a sump. The contents of the sump will be transported off-site for disposal, as necessary.

The LFGE plant site would generate stormwater runoff. Construction, grading, and trenching would result in bare, disturbed soil that could be eroded by wind and rainfall, potentially leading to turbid runoff and sedimentation of adjacent water bodies, potentially degrading water quality, reducing hydraulic capacity, and affecting habitat quality. Because the area of disturbance would exceed one acre, the proposed LFGE project would be required to comply with California stormwater regulations (General Permit for Storm Water Discharges Associate with Construction and Land Disturbance Activities, Order No. 2009-0009-DWG, National Pollutant Discharge Elimination System [NPDES] No. CAS000002). These regulations require preparation and implementation of a SWPPP, including implementation of stormwater best management practices (BMPs). BMPs would be used at the LFGE plant site and along the distribution interconnect line including protection of existing vegetation, stabilization of bare soils, installing straw rolls and silt fences, covering stockpiled soils, water quality sampling, and revegetation. The SWPPP would also contain BMPs to address the potential for oil and fuel leaks from construction equipment and temporary fuel and hazardous materials storage. Pollution prevention BMPs would include measures such as placing drip pans under heavy equipment when stored overnight. The SWPPP would also include BMPs for temporary on-site storage of

fuel such as secondary containment and berms around storage areas. The construction contractor would also prepare a SPCC Plan in accordance with 40 CFR Part 112 with measures to prevent and respond to any accidental releases of hazardous materials.

During operations, runoff from the LFGE plant site would flow to the stormwater retention basin where it would comingle with stormwater from the landfill, including the metal recycling area (Recycling Area No. 2), weigh station, and administration area. This runoff would be regulated under the landfill's operational SWPPP. Any eroded soils from the LFGE plant site would be managed along with sediments from landfill areas in the retention pond and Stormwater Control Basin No. 1. Monitoring and compliance would be addressed through the landfill's existing monitoring plan, which has been in place since 2001 and includes sampling at four locations (Stormwater Control Basin Nos. 1, 2, 3, and downstream). The landfill is currently in compliance with the requirements of NPDES Order No. 91-13-DWG. Responsibility for monitoring and maintenance of BMPs would be described in an amendment to the landfill's operational SWPPP, which would be reviewed by Solano County and SFRWQCB. Control of and response to spills during operations would be outlined in the SPCC Plan.

The 2009 PHLF EIR included two mitigation measures related to increased erosion potential and surface water quality. Although LFGE plant would result in only a small runoff volume and would subject to compliance with stormwater BMPs and the provisions of the SPCC Plan, compliance with the mitigation 2009 PHLF EIR are applicable to the proposed LFGE project would help to reduce the potential water quality impacts from stormwater runoff to a less than significant level.

b) Less Than Significant Impact – The proposed LFGE project would not use groundwater, which is extremely limited in the proposed LFGE project area (EMCON 1999). Groundwater would not be pumped for use as process water, irrigation, or dust control.

The proposed LFGE project would not interfere substantially with groundwater recharge. Ground surfaces would remain pervious throughout construction, allowing for localized percolation of stormwater. The LFGE plant would create a maximum increase of 28,800 square feet of impervious surface between the concrete pad and adjacent areas, contributing only a minor volume of stormwater that would not have a significant effect on groundwater volume or elevation. For example, during an intense, month-long series of winter rainstorms producing 12 inches of rain, the 28,800 square feet of impervious surface would produce an average of only 0.011 cubic feet per second of runoff (4.99 gallons per minute)[7]. Construction of the distribution interconnect line would result in no appreciable increase in stormwater runoff.

Compared with the landfill's runoff, the stormwater runoff from the LFGE plant would be indistinguishable from baseline conditions. Further, the energy facilities would be adjacent to landscaped and grassy areas, which would allow runoff to percolate into the ground. The LFGE plant would not require construction of storm drains or additional retention or control basins. This minor increase in runoff would not result in a deficit in aquifer volume or depressed

[7] 1 foot of rainfall over 28,800 square feet impervious surface would produce 28,800 cubic feet of runoff. Over one month, the runoff rate would average 0.011 cubic feet per second (4.99 gallons per minute).

groundwater elevations because groundwater under the landfill is not recharged by the landfill area. The underlying clay soils are impermeable, precluding significant percolation to the groundwater. Therefore, the introduction of impervious surfaces would not significantly affect groundwater volume or elevations and no mitigation measures would be required.

c) Less Than Significant Impact – The LFGE plant would be constructed in a relatively flat area that would require little grading prior to construction. Any grading would not create steep slopes subject to substantial erosion. The site would continue to drain to the stormwater retention pond adjacent to the recycling area where it would percolate to groundwater or enter Stormwater Control Basin No. 1. Neither the direction nor the volume of runoff would be altered substantially, and no streams, rivers or other water courses would be altered by the proposed LFGE project. The proposed LFGE project would not substantially alter drainage patterns; would not alter any stream or river; and would implement required stormwater BMPs. Therefore, any erosion and siltation impacts caused by minor, localized changes in drainage patterns would be less than significant and no mitigation measures would be required.

d) Less Than Significant Impact – The LFGE plant would be constructed in a relatively flat area that would require little grading prior to construction and therefore no significant changes in drainage patterns would result. No streams, rivers or other water courses would be altered. As described above, the proposed LFGE project would add only 28,800 square feet of impervious surface and a small volume of stormwater runoff that would not result in flooding on- or off-site. The stormwater retention pond and Stormwater Control Basin No. 1 have more than sufficient capacity to accommodate the additional stormwater flows from the proposed LFGE project, even in the most extreme storm event. Downstream areas consist of a stock pond and Suisun Marsh. Construction of the distribution interconnect line to the electrical grid would not contribute to stormwater runoff. Therefore, any minor changes in localized drainage patterns or generation of stormwater runoff from the LFGE plant would result in less than significant impacts from on- or off-site flooding and no mitigation measures would be required.

e) Less Than Significant Impact – As described above, the LFGE plant site would contribute only a minor quantity of stormwater runoff to the existing retention basin near the landfill's recycling area where runoff percolates to groundwater. In large storms, runoff from the LFGE plant area could overflow the retention basin and contribute to existing flows to the adjacent sedimentation basin (Stormwater Control Basin No. 1). Minor increases in stormwater flows from the LFGE plant would not exceed the capacity of the landfill's existing system, which was designed to accommodate runoff from the landfill (including the area to be occupied by the LFGE plant). Therefore, the additional runoff volume would have a less than significant impact on the capacity of existing stormwater and sediment retention systems and no facility expansion or other mitigation measures would be required.

As described above, the construction SWPPP would address temporary storage of fuel and the use of construction equipment through pollution prevention BMPs. Preparation of a SPCC Plan would also be required. During operations, runoff from the LFGE plant site would be regulated under the landfill's operational SWPPP. Control of and response to spills during operations would be outlined in the SPCC Plan. Therefore, potential water quality impacts from polluted runoff would be addressed through prevention and any impacts would be less than significant with no mitigation measures required.

f) Less Than Significant Impact – The proposed LFGE project would not have other significant impacts on water quality. A septic and leach field system would be designed and constructed to support restroom facilities for PHEP employees during operation of the LFGE facility and to manage sanitary waste in accordance with Solano County requirements. Condensate from the gas compression process would be returned to the landfill for disposal in accordance with PHLF's Waste Discharge Requirements. The operator would be required to prepare and implement a SWPPP for industrial operations with BMPs for containment of leaks and spills to prevent contact with stormwater runoff and water quality impacts.

As described above, the long-term potential for groundwater contamination at the site is very limited. Therefore, other impacts on water quality would be less than significant and no mitigation measures would be required.

g) No Impact – The proposed LFGE project involves an LFGE facility and does not propose construction of housing, nor would it shift the boundaries of the flood hazard areas, as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map, to include residential areas. Therefore, the proposed LFGE project would result in no impacts from placement of housing within a flood hazard area.

h) No Impact – The proposed LFGE project involves an LFGE facility and does not propose construction of dams, levees, or other hydraulic control structures that would impede or redirect flood flows. Further, the proposed LFGE project site is not within a 100-year flood hazard area. Therefore, the proposed LFGE project would result in no impacts from placement of structures that would impede or redirect flood flows and no mitigation measures are required.

i) No Impact – As described above, the LFGE plant site would contribute only a minor quantity of stormwater runoff resulting in no risk of on- or off-site flooding. Furthermore, there are no levees or dams involved in the proposed LFGE project or present in downstream areas. Therefore, the proposed LFGE project would not expose people or structures to a risk of loss, injury, or death from flooding and construction and operation of the proposed LFGE project would have no impact on levee or dam failure.

j) Less Than Significant Impact – The proposed LFGE project would not expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow. Tsunamis are very large ocean waves that can be generated during earthquakes or other sea floor disturbances (e.g., large submarine landslides), whereas a seiche is a seismically generated standing wave in an enclosed or partially enclosed body of water. Seiches and seiche-related phenomena have been observed on lakes, reservoirs, bays and seas. A mudflow or mudslide is the most rapid (up to 50 miles per hour) and fluid type of downhill mass wasting. The proposed LFGE project site is located over 5 miles upstream of the open waters of the Delta where shoreline areas could be affected by tsunami or seiche. Conditions on the landfill site are not conducive to mudslides because of rolling topography and dense vegetation. Furthermore, the proposed LFGE project does not involve residences or offices and would employ few workers. The only structures would be energy generation facilities associated with the proposed LFGE project. Therefore, the proposed LFGE project would result in less than significant impacts from seiche, tsunami, or mudflow.

MITIGATION MEASURES

The following mitigation measures identified in the 2009 PHLF EIR would reduce the impacts hydrology and water quality impacts to a less-than-significant level and no additional mitigation measures are necessary.

2009 PHLF EIR Mitigation Measure 4.4-1 Increased Erosion. Potential Consistent with the requirements of CCR Title 27, Section 20365, the design of the site's surface water drainage system shall include the diversion and drainage controls necessary to intercept run-on and direct run-off, and to minimize erosion during construction and operation activities over the life of the project. This would include the implementation of Best Management Practices (BMPs) during cell construction to minimize soil erosion. These BMPs may include diversion of storm water runoff using temporary swales or interceptor ditches, retention of existing vegetation wherever possible, stabilization of barren soils with jute netting or geotextile fabric, application of straw or mulch after seeding, installation of silt fencing and berms or hay bales to direct runoff away from construction areas, and the provision of visqueen (plastic) sheets or tarps to cover stockpiled soils.

2009 PHLF EIR Mitigation Measure 4.4-2 Surface Water Quality The project applicant shall prepare a revised Surface Water Monitoring Program and a revised Erosion and Sedimentation Control Plan for the proposed expansion. In addition, the project applicant shall acquire an NPDES permit, to include a revised Storm Water Pollution Prevention Plan; a Waste Discharge Permit; and a revised Use Permit/Marsh Development Permit prior to initiating landfill expansion activities.

CONCLUSION

The proposed LFGE project would result in less than significant impacts to hydrology and water quality with implementation of the mitigation measures included in the 2009 PHLF EIR and listed above. The proposed LFGE project would not use groundwater, which is extremely limited in the proposed LFGE project area (EMCON 1999). Groundwater would not be pumped for use as process water, irrigation, or dust control. The LFGE plant would be constructed in a relatively flat area that would require little grading prior to construction and therefore no significant changes in drainage patterns would result. LFGE plant site would contribute only a minor quantity of stormwater runoff to the existing retention basin near the landfill's recycling area where runoff percolates to groundwater. A septic system would handle sanitary waste. Condensate from the gas compression process would be returned to the landfill for disposal in accordance with PHLF's Waste Discharge Requirements. The proposed LFGE project would not expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow.

REFERENCES

San Francisco Regional Water Quality Control Board (SFRWQCB). 2010. San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan). California Regional Water Quality Control Board, San Francisco Bay Region, Oakland, California.

EMCON Associates (EMCON). 1999. Landfill Design Report, Potrero Hills Landfill, Solano County, California. May.

11. LAND USE AND PLANNING

Issues (and Supporting Information Sources):		*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?	☐	☐	☒	☐

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component would result in land use resource impacts related to local protection plan policies regarding underground power lines. The 2009 PHLF EIR included mitigation measures to reduce these land use impacts to a less-than-significant level. The 2009 PHLF EIR impacts and mitigation measures that are applicable to the LFGE project are identified in the analysis below which has been prepared to provide a more detailed assessment of the LFGE component now that more details about its design are available (see Project Description).

a) No Impact – The proposed LFGE project site is located within the footprint of an existing municipal solid waste landfill. The landfill is located within an AL-160 Zone (agricultural limited – 160-acre minimum) and also within the secondary management area of the Suisun Marsh. There is no established community in this zone.

b) Less than Significant Impact – The proposed LFGE project does not conflict with any applicable land use plan, policy, or regulation of any agency with jurisdiction over the proposed LFGE project. The proposed LFGE project would be consistent with the Solano County component of the Suisun Marsh LPP (Solano County 2010). The LPP is the local (County) component of the Suisun Marsh Protection Plan that together ensures the protection and preservation of the Suisun Marsh. The Suisun Marsh and adjacent lands are divided into Primary and Secondary Management Areas; the proposed LFGE project would occur in both areas.

The LFGE plant is located within the Secondary Management Area and its construction as part of the PHLF Phase II expansion (EDAW 2009) was found to be consistent with the SMPP and Solano County component of the LPP, and a Land Use Permit (U-88-33) and Marsh Development Permit (MD-88-09) were issued. The issuance of the Marsh Development Permit was subsequently appealed to the San Francisco BCDC, resulting in the issuance of BCDC

Permit 3-10(M), which superseded Marsh Development Permit MD-88-09. As a result, MD-88-09 is no longer in effect. Solano County Land Use Permit U-88-33 is still in full force and effect. Although the LFGE plant is located in the Secondary Management Area, portions of the distribution interconnect line are within the Primary Management Area where underground installation of utility lines is required. In compliance with Solano County's LPP, the distribution interconnect line would be trenched underground in areas designated as Primary Management Area. Construction of the distribution line within the landfill property would be in the Secondary Management Area where undergrounding is not required and would be on power poles. Poles would also be used along the northern edge of SR 12, which is outside the Suisun Marsh LPP area. Therefore, the LFGE plant and distribution interconnect line would comply with the applicable policies of the LPP and would not result in policy inconsistency impacts. .

The 2009 PHLF EIR identified Mitigation Measure 4.1-3, which requires power lines to be installed underground unless the project applicant can show that the underground installation would be so expensive as to preclude service, consistent with the requirements of Policy 1(c) of the Utilities, Facilities and Transportation section of the LPP. Additional project details are now available and demonstrate that the project will underground utilities consistent with policies of the LLP and no mitigation is required.

The boundary of PHLF is located within 2 miles of Travis Air Force Base, and the proposed LFGE project is located within Zone C of the Travis Air Force Base Land Use Compatibility Plan. Review and approval by the Solano County Airport Land Use Commission (ALUC) of any structure above 100 feet is required for structures located within Zone C. Since the maximum height of the proposed LFGE project would not exceed 30 feet, no ALUC review would be required for the proposed LFGE project.

In addition, the proposed LFGE project would require grading and building permits from the Solano County Department of Resource Management, Building and Safety Services. An encroachment permit would be required for the distribution line alignment along Potrero Hills Lane if that alignment is chosen. A septic system would be installed, which would require a Sewage Disposal System Permit from Solano County Department of Environmental Health.

c) Less than Significant Impact – No habitat conservation plans or natural community conservation plans are currently applicable to this site. However, BCDC Permit 3-10(M) contains extensive habitat and species conservation and protection measures including the establishment of conservation areas and a conservation easement, on and off-site mitigation and habitat restoration measures, habitat mitigation and monitoring plan, and a grassland management plan. All of the mitigation measures are designed to protect, preserve, and minimize impacts to native and special status species of plants and animals, including the CTS, burrowing owls, vernal pool shrimp and Contra Costa goldfields.

CONCLUSION

The proposed LFGE project would result in less than significant impacts to land use and planning because the proposed LFGE project would not conflict with any applicable land use plan, policy, or regulation of any agency with jurisdiction over the proposed LFGE project and it

does not conflict with any adopted habitat conservation plan or natural community conservation plan.

REFERENCES

EDAW. 2009. Final EIR for Potrero Hills Landfill: Phase II Expansion.

San Francisco Bay Conservation and Development Commission (BCDC). 2010. Permit 3-10(M).

Solano County. 1988. Land Use Permit U-88-33.

Solano County Airport Land Use Commission. 2002. Travis Air Force Base Land Use Compatibility Plan.

Solano County, Department of Resource Management. Resource Management Website. http://www.solanocounty.com/depts/rm/default.asp. Accessed April 15, 2011.

Solano County, Suisun Marsh Local Protection Program. 2010.

12. MINERAL RESOURCES

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

The 2009 PHLF EIR did not specifically address the topic of mineral resource impacts, but the 2009 PHLF EIR earth resources analysis did include a discussion of mineral resource present in the area of the landfill expansion. The construction and operation of the proposed LFGE plant would be located in an area of the LFGE plant that has been significantly disturbed in the past and excavation is limited to on-site grading, so impacts to mineral resources are not anticipated to result from the LFGE project. The following subsections assess the potential mineral resource impacts of the proposed LFGE project.

a), b) No Impact – Solano County is rich in a number of non-fuel mineral resources. Mineral resources mined or produced within Solano County include mercury, sand and gravel, clay, stone products, calcium, and sulfur. Policies regarding the extraction of natural gas are included in the Energy Resources and Conservation section of the Solano County General Plan, Resources Chapter. Based on Figure RS-4, which maps the mineral resources in Solano County, the proposed LFGE project site is located within an area identified as containing mineral deposits, the significance of which cannot be evaluated from available data (Solano County 2008). Additionally, the California Department of Conservation, Division of Oil, Gas and Geothermal Resources (CDOGGR) identified the Potrero Hills Gas field approximately 0.75 miles east of the proposed LFGE project. The USGS Mineral Resource Data System identified the nearest metallic or nonmetallic mineral resource site as a sand and gravel producer located approximately 2.75 miles east of the proposed site (USGS 2011). All wells in the Potrero Hills Gas field are identified as plugged and abandoned (CDOGGR 2003). In order to meet the California Surface Mining and Reclamation Act of 1975, which limits new development in areas with important mineral resources, RS.1-16 in the Solano County General Plan requires that land uses in mineral areas be appropriately designated to ensure compatibility between mineral extraction and surrounding areas.

While the proposed LFGE project area may contain mineral deposits, the proposed LFGE project would not include excavation beyond grading activities, and would not result in the removal or disturbance of mineral resources. As the proposed LFGE project meets land use designations, would not include significant excavation, is outside of the landfill cells, and is compatible with

the Solano County General Plan, the proposed LFGE project would have no impact to mineral resources.

CONCLUSION

The proposed LFGE project would result in no impacts to mineral resources because the LFGE project would not result in the loss of availability of a known mineral resource of value either locally, regionally or to residents of the state.

REFERENCES

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (CDOGGR). 2003. Map No. 612 - Solano County. ftp://ftp.consrv.ca.gov/pub/oil/maps/dist6/612/Map612.pdf. Accessed April 2011.

Solano County Planning Department. 2008. Solano County General Plan.

U.S. Geological Survey (USGS). 2011. Mineral Resource Data System: Conterminous US. http://mrdata.usgs.gov/mineral-resources/mrds-us.html. Accessed April 2011.

13. NOISE

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne 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?	☐	☐	☒	☐

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would not result in significant noise impacts and no mitigation measures were required. This same finding is true for the LFGE project as currently proposed. A brief analysis is provided below.

a) Less than Significant Impact – There are two residences located northeast of the proposed LFGE project site. The first residence is located approximately 0.85 miles from the proposed LFGE project site and the second residence is located 0.5 miles from the proposed LFGE project site. There is also a residential community located to the north at approximately 1.4 miles from the proposed LFGE project site. The County of Solano's 2008 General Plan limits noise impact levels to residential land use to 55 dBA equivalent sound level (Leq) during the daytime period and 50 dBA Leq during the nighttime period (Solano County 2008).

The proposed LFGE project construction would incorporate the use of heavy construction equipment. The nearest residential receptor, located approximately 0.5 miles from the proposed LFGE project site, may experience a maximum noise level of approximately 53.2 dBA Leq

during daytime construction of the proposed LFGE project. No nighttime construction operations are planned at this time. This noise level is considered acceptable for outside noise exposure levels for residential land use as defined within the 2008 Solano County General Plan. It is expected that the construction would be inaudible due to the noise levels produced by the existing landfill operations located adjacent to the proposed LFGE project site. This noise exposure level is consistent with the noise threshold limits within the 2008 General Plan. Therefore, the noise generated by temporary construction operations is considered to be a less than significant impact.

The proposed LFGE project would include the installation and operation of a total of six Caterpillar 3520C engines. Under 100% load utilization, each Caterpillar engine would produce a noise level of 91.6 dBA at a distance of 22.9 feet. The proposed LFGE project also plans to contain six radiators each producing 65 dBA at 25 feet. The proposed LFGE project would also contain an enclosed flare system, which is equipped with an air blower unit mounted on a skid, noted to produce noise levels of 85 dBA at 50 feet. All of the power-generating equipment (Caterpillar engines) would be contained within a building. Noise propagating out from a fixed mechanical noise source, such as the Caterpillar engines, shall decrease at a rate of 6 dBA for every doubling of the distance (not accounting for intervening topography, ground absorption, or vegetation, which would further decrease the noise level). The calculations within this analysis were conducted using the Cadna A computer noise modeling program. The computer model takes into account the intervening topography and ground absorption. Calculations show that due to the distance to the nearest residence the combined mechanical equipment noise levels would be 47.2 dBA at the nearest residential receptor located approximately 0.5 miles from the proposed LFGE project site. The noise exposure from the proposed energy producing mechanical equipment is consistent with the noise threshold limits in the 2008 General Plan. Therefore, noise generated by proposed project operation is considered to be a less than significant impact.

b) Less Than Significant Impact – The proposed LFGE project would involve temporary sources of ground-borne noise that could be perceptible in the immediate vicinity during construction due to the operation of heavy equipment. It is expected that the ground-borne construction noise would be inaudible in the vicinity of the nearest residential receptor due to the heavy equipment operations of the existing landfill. Furthermore, ground-borne vibration impacts associated with the construction of the proposed LFGE project would be attenuated due to distance and would not be perceivable at the nearest residential receptor located 0.5 miles from the proposed LFGE project site. Therefore, the construction of the proposed LFGE project would not generate an excessive exposure of ground-borne noise or vibration and these impacts are considered to be less than significant.

The proposed LFGE project would contain noise producing mechanical equipment that would result in a noise impact of 47.2 dBA at the nearest residential receptor located 0.5 miles from the proposed LFGE project site. The noise exposure from the proposed energy producing mechanical equipment is below with the noise threshold limits in the 2008 General Plan. The proposed LFGE project mechanical equipment shall produce ground-borne vibrations. However, these vibration impacts would be attenuated due to distance and would not be perceivable at the nearest residential receptor located 0.5 miles from the proposed LFGE project site. Therefore, the

operations of the proposed LFGE project would not generate an excessive exposure of ground-borne noise or vibration and these impacts are considered to be less than significant.

c) Less Than Significant Impact – In August of 2002, an ambient noise study was conducted to examine the expansion operations of the existing landfill (EDAW 2003). This study documented that the noise level north of the existing landfill, closest to the nearest residential receptor, was 69.6 dBA during the daytime period and 55.1 dBA during the nighttime period. The proposed LFGE project would contain noise producing mechanical equipment that would result in a noise impact of 47.2 dBA at the nearest residential receptor located 0.5 miles from the proposed LFGE project site. The project-related increase to noise impact levels would result in an increase to the existing ambient conditions of 0.7 dB. The proposed LFGE project operations would not result in a 3 dB or more permanent increase to the existing ambient noise level and are therefore considered to be less than significant.

d) Less Than Significant Impact – During construction, the proposed LFGE project would involve temporary, localized sources of noise from the operation of heavy equipment within the proposed LFGE project area that could be perceptible within the immediate vicinity of the construction area. In the vicinity of the proposed LFGE project area, the nearest residential receptor is located approximately 0.5 miles from the proposed LFGE project site and may experience a maximum noise level of approximately 53.2 dBA during construction of the proposed LFGE project. The project-related increase to noise impact levels would result in an increase to the existing ambient conditions of 2.2 dB. The proposed LFGE project construction would not result in a 3 dB or more temporary increase to the existing ambient noise level and is therefore considered to be less than significant.

The proposed LFGE project would generate approximately 200 round-trip truck deliveries during the construction period. A maximum of 24 round trip trucks would occur for a total of 2 days during the paving phase of construction. During all other construction phases no more than 4 round-trip trucks would occur per day. The increase to the daily vehicle traffic during the paving phase may increase the existing noise environment by more than 3 dB. However, due to the infrequent nature of these events, and the short duration of the noise impacts from the paving traffic phase, the impacts are considered to be less than significant. The increase to the daily traffic volume due to all other construction phases would result in a less than 3 dB increase to the existing noise environment and is considered less than significant.

The proposed LFGE project would include construction of the distribution interconnect line to the existing PG&E power lines. No heavy construction equipment is proposed to be used during the interconnection construction phase. PG&E is proposing to use a single crew truck and a single flatbed truck. The noise impacts associated with interconnection construction is expected to be minimal and would not result in a 3 dB or more increase to the existing ambient noise level. Therefore, these impacts are considered to be less than significant.

e) No Impact – There is no public airport located within 2 miles of the proposed LFGE project site.

f) Less Than Significant Impact – Travis Air Force Base is located approximately 2 miles northeast of the proposed LFGE project site. A review of the aircraft over flight noise contour map shows the proposed LFGE project site to be within the 70 to 75 dBA community noise

equivalent level (CNEL) noise contour zones. The normally acceptable noise level for industrial land use compatibility is defined as 75 dBA CNEL, according to the Solano County Land Use Guidelines table. Aircraft over flight associated with Travis Air Force Base will not expose workers related with the proposed LFGE project to noise levels above the normally acceptable threshold as defined within the Solano County Land Use Guidelines table. Therefore, noise impacts associated with aircraft over flight are considered to be less than significant.

CONCLUSION

The proposed LFGE project would result in less than significant noise impacts because the LFGE project construction would not result in a 3 dB or more temporary increase to the existing ambient noise level and noise levels during operation would not exceed the thresholds identified in the Solano County General Plan.

REFERENCES

Beranek, Leo L. 1988. Noise and Vibration Control, Revised Edition, INCE.

EDAW. 2003. 2003 Draft EIR for Potrero Hills Landfill Expansion, Section 4.11, Cultural Resources. Prepared for the County of Solano, Department of Resource Management. Fairfield, CA.

Federal Transit Administration. 1995. Vibration Impact Criteria for General Assessment, Table 8.1: Ground Borne Vibration and Ground Borne Noise Impact Criteria for General Assessment.

Federal Transit Administration. 2006. Transit Noise and Vibration Impact Assessment, Table 12-2: Vibration Source Levels for Construction Equipment.

Harris, Cyril M. 1998. Handbook of Acoustical Measurements and Noise Control, 3rd Edition, Acoustical Society of America.

Raichel, Daniel R. 2000. The Science and Applications of Acoustics.

Solano County Planning Department. 2008. Solano County General Plan. November.

U.S. Department of Transportation, Federal Highway Administration. 2009. Section 9.0 Construction Equipment Noise Levels and Ranges.

14. POPULATION AND HOUSING

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:				
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?	☐	☐	☐	☒

The 2009 PHLF EIR for the landfill expansion project, which included a conceptual design for the LFGE component, did not identify impacts related to population and housing.

The 2009 PHLF EIR scoped out the topic of population and housing since the PHLF expansion project was not anticipated to induce substantial population growth, displace housing or displace a substantial number of people requiring the construction of replacement housing elsewhere. This same finding is true for the LFGE project as currently proposed. A brief analysis is provided below.

a) No Impact – The construction and operation of the proposed LFGE project would not induce, either directly or indirectly, substantial population growth in the area. The small number of construction positions (a total of approximately 50 to 60 workers, with 10 to 15 on-site at any given time) would be filled utilizing local labor; this would serve to inhibit any in-migration of labor and attendant increase in population. Similarly, the very low labor requirements of the operational phase (1 to 2 employees) would not trigger an in-migration of labor. While the proposed LFGE project would improve the stability and reliability of the electrical grid in the area, the improvements would be relatively minor in scope and the number of individuals affected would be relatively small; thus, while the proposed LFGE project represents an improvement in the area's infrastructure, the improvement is not of the type that would induce substantial population growth. The proposed LFGE project would not induce substantial population growth, and therefore no impacts would occur.

b) No Impact – The proposed LFGE project would be constructed on a currently uninhabited parcel of agriculturally zoned land (AL-160 Zone [agricultural limited – 160-acre minimum]). The proposed LFGE project would thus not displace any existing housing and therefore, no impacts would occur.

c) No Impact – The proposed LFGE project would be constructed on a currently uninhabited parcel of agriculturally zoned land. Therefore, the proposed LFGE project would not displace any people and no impacts would occur.

CONCLUSION

The proposed LFGE project would have no impact on population and housing in the area.

15. PUBLIC SERVICES

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:				
a) 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:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☒	☐

The 2009 PHLF EIR determined that the landfill expansion project would not result in significant public services impacts and no mitigation measures were required. This same finding is true for the LFGE project as currently proposed. A brief analysis is provided below. a) i. Less Than Significant Impact – The Suisun Fire Protection District is a primarily volunteer fire department that serves approximately 22% of the unincorporated area of Solano County, including the site of the proposed LFGE project. The Suisun Fire Protection District currently operates two fire stations; the fire station nearest the proposed LFGE project is located approximately 5 miles from PHLF at Station 33 located on 445 Jackson Street in Fairfield.

The proposed LFGE project would be constructed in compliance with all applicable federal, state, and local building, electrical, fire, and other applicable codes and will be designed, installed, and operated according to industry standards; this would mitigate the risk of fire at the proposed LFGE project site. Existing fire-fighting capabilities and response times would provide adequate protection for the proposed LFGE project without significantly impacting the ability of the Suisun Fire Protection District to serve the existing population.

There would be no temporary or permanent increase in the demand for fire protection services. Current fire protection response times would not be impacted by the proposed LFGE project, as no road closures are envisioned. Traffic to and from the proposed LFGE project site would be light during the 12-month construction phase and infrequent during operations.

The proposed LFGE project would not directly or indirectly place additional significant demands on the existing fire services in the area, and thus the project would not require that new government facilities (fire stations) are constructed, and would not result in the need for existing fire station facilities to be altered.

a) ii. Less Than Significant Impact – The Solano County Sheriff's Office is headquartered in Fairfield, approximately 5 miles east of the proposed LFGE project site.

The proposed LFGE project would be located within the boundaries of the existing PHLF, which is fenced. Access is controlled and monitored at all times. Because access to the site is limited, it is not anticipated that it will be the target of vandalism, theft, etc., that would require significant use of local law enforcement resources.

There would be no temporary or permanent increase in the demand for law enforcement services. Current law enforcement response times would not be impacted by the proposed LFGE project, as no road closures are envisioned, and traffic to and from the proposed LFGE project site would be light, consisting of approximately two truck deliveries per week.

The proposed LFGE project would not directly or indirectly place additional significant demands on the existing law enforcement resources in the area, and thus the project would not require construction of new government facilities (Sheriff's office substations) nor result in the need for existing substation facilities to be altered.

a) iii. No Impact – The proposed LFGE project

The proposed LFGE project would not result in an increase in the population of the area; as a result, there would be no impact to current school enrollments and no need for new or physically altered school facilities.

a) iv. No Impact – The proposed LFGE project would not result in an increase in the population of the area; as a result, there would be no impact to parks. See the Recreation section for additional detail.

a) v. Less Than Significant Impact – The proposed LFGE project would result in less than significant impacts to additional public services including hospitals and libraries. Hospital resources may be utilized during either the construction or operations phases should an incident or accident occur at the proposed LFGE project site; given the small numbers of workers and the conventional construction methods to be employed, these incidents or accidents should be rare and would not significantly impact the ability of local hospitals to continue to provide care to the existing population. Use of library resources, like the use of parks and recreational facilities, are generally tied to population; because the proposed LFGE project would not directly or indirectly result in a perceptible change in the local population, the impacts to library resources would be less than significant.

CONCLUSION

The proposed LFGE project would result in less than significant impacts to existing public services because the proposed LFGE project would be constructed in compliance with all applicable federal, state, and local building, electrical, fire, and other applicable codes and will be designed, installed, and operated according to industry standards; this would mitigate the risk of fire at the proposed LFGE project site. Therefore, existing fire-fighting capabilities and response times would provide adequate protection for the proposed LFGE project without significantly impacting the ability of the Suisun Fire Protection District to serve the existing population. Access to the site is limited, it is not anticipated that it will be the target of vandalism, theft, or other crime that would require significant local law enforcement resources. Use of hospitals would be minor and unlikely given the small number of workers and the conventional construction methods to be employed. Increased use of other public services such as libraries and recreation facilities would also be unlikely.

REFERENCES

Fairfield-Suisun Unified School District. 2011 webpage. Available at: http://www.fairfield-suisun.net/fsschool.htm. Accessed May 15, 2011.

Solano County Sheriff's Department. 2011 webpage. Available at: http://www.co.solano.ca.us/depts/sheriff/. Accessed May 15, 2011.

Suisun Fire Protection District. 2010. Fire Protection District webpage. Available at: http://suisunfiredistrict.com/. Accessed May 15, 2011.

16. RECREATION

Issues (and Supporting Information Sources):		*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?	☐	☐	☐	☒

The 2009 PHLF EIR did not identify impacts related to recreation.

The 2009 PHLF EIR scoped out the topic of recreation since the PHLF expansion project, which conceptually included the proposed LFGE project, would not increase the use of recreational facilities such that substantial deterioration would occur nor would the landfill expansion require construction of new recreational facilities that would have an adverse physical effect on the environment. This same finding is true for the LFGE project as currently proposed. A brief analysis is provided below.

a) No Impact – The proposed LFGE project would not promote or alter existing population growth or densities in the area locally or regionally. Further, the proposed LFGE project would not directly or indirectly affect the use of any neighborhood parks, regional parks or other recreation facilities. Therefore, the proposed LFGE project would not directly result in deterioration of recreational facilities or indirectly affect recreational facilities by diverting recreational uses to other areas.

b) No Impact – The proposed LFGE project would not involve the use of recreational facilities or require the construction of new or expanded recreational facilities that would result in physical effects on the environment. The proposed LFGE project would be located within the boundary of PHLF and was reviewed and authorized by the San Francisco BCDC as part of the PHLF expansion project in Permit 3-10(M). The BCDC permit contains extensive public access mitigation measures for the entire PHLF expansion project, including a new visitor center, four separate habitat enhancement projects, and a public access overlook. BCDC concluded that the public access measures included in Permit 3-10(M) would not have an adverse effect on the environment because they conform to the public access policies of the Suisun Marsh LPP. Section 2 of the LLP states that recreational access to the Suisun Marsh for fishing, boat launching, and nature study should be encouraged along the outer perimeter of the marsh near population centers, but that "Levels of use should be monitored to insure that their intensity is compatible with other recreation activities and with protection of the Marsh environment." The proposed LFGE project is a part of a coordinated plan for improved public access at the PHLF

that has been carefully designed to avoid undue impacts on the Suisun Marsh environment. Further, the construction of the proposed LFGE project would not conflict with any of the proposed public access measures contained in BCDC Permit 3-10(M). Based on these considerations, the proposed LFGE project would have no impacts from construction of recreational facilities and no impacts on the recreational facilities required by BCDC.

CONCLUSION

The proposed LFGE project would have no impact on the physical condition of parks or other recreational facilities in the area, and no impacts on the environment from the construction or expansion of recreational facilities.

REFERENCES

San Francisco Bay Conservation and Development Commission (BCDC). Permit 3-10(M).

Suisun Marsh Local Protection Plan. Section 2.

17. TRANSPORTATION / TRAFFIC

Issues (and Supporting Information Sources):		*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:					
a)	Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☐	☐	☒	☐
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)?	☐	☐	☐	☒

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would have no significant impacts on transportation and traffic and determined that no mitigation would be required.

The 2009 PHLF EIR identified four components of the landfill expansion project would potentially affect traffic circulation: applying tonnage limits only to materials buried in the landfill; operating 24 hours per day; selling landfill-related commodities; and constructing a truck wash facility. The LFGE plant was not viewed as a potential source for increased landfill operational traffic. Once operational, the proposed LFGE would generate two to four daily trips to the plant for routine maintenance. The 2009 PHLF EIR did not specifically address construction-related traffic from the proposed LFGE plant. It is estimated that during the one-year construction period, the proposed LFGE project would generate approximately 25 total trips per day to and from the proposed LFGE project site and construction delivery would consist of approximately 200 truck trips within the one-year period. Beyond these minimal maintenance

and operational and construction period trips, no trips would be generated by the proposed LFGE project. Consistent with the finding of the 2009 PHLF EIR, no significant impacts are anticipated. The following paragraphs address the potential transportation and traffic impacts of the LFGE project.

Less than Significant Impact –The proposed LFGE project involves the development of an electricity generation facility, which would generate minimal additional trips to the PHLF as described above. The increased traffic associated with LGFE project operation was analyzed in the 2009 PHLF EIR and found not to result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections. The anticipated truck deliveries and 25 trips per day for the one-year construction period would not result in a substantial increase in the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion as this minimal amount of temporary traffic would reduce intersection operations near the project site to unacceptable LOS of D or below nor would the construction traffic cause more than 4 seconds of delay at an intersection that is already operating at unacceptable LOS.

b) Less than Significant Impact – The 2009 PHLF EIR included an analysis of the increased traffic to and from the landfill that would result from the proposed landfill expansion project, including the additional trips generated by the proposed LFGE plant, which was considered part of the landfill expansion project for environmental review purposes. The traffic analysis showed that the PHLF project, which included the LFGE component, would increase traffic by 32 trips per day. This increase in daily vehicle traffic from a permitted level of 968 daily trips to a level of 1,000 daily trips would have no unacceptable effects on the level of service at any of the impacted intersections of nearby surface streets and Highway 12 because this increase of 32 trips would not degrade LOS at an unacceptable level of service (D or below) at nearby intersections and delay at the intersections that already operate at unacceptable LOS would not increase by more than 2 seconds. The construction and operation of the LFGE plant would not result in any traffic impacts beyond those described in the traffic analysis conducted in the 2009 PHLF EIR, which were determined to be less than significant and required no mitigation. c) No Impact – The proposed LFGE project would not result in changes to air, rail, or water traffic conditions that were not previously addressed in the 2009 PHLF EIR. The proposed LFGE project is not located near railroad operations or within 2 miles of a commercial or general aviation airport, private airstrip, or water way. The boundary of the PHLF is located within 2 miles of Travis Air Force Base, and the proposed LFGE project is located within Zone C of the Travis Air Force Base Land Use Compatibility Plan. Review and approval by the Solano County ALUC of any structure above 100 feet is required for structures located within Zone C. Since the maximum height of the proposed LFGE project would not exceed 30 feet, no ALUC review would be required for the proposed LFGE project. No other transportation impacts would occur. Therefore, no further analysis of the issue is required.

d), e), f), g) No Impact – The proposed LFGE project would not include any design features, such as the alteration of a roadway, additional parking spaces, etc., that would create any hazardous traffic conditions. The proposed facility would be located within the boundary of an existing solid waste landfill in an area where it would not pose any hazards or barriers for pedestrians, bicyclists, or motorists. Accordingly, no impacts would occur regarding safety hazards. Therefore, no further analysis of the issue is required.

Implementation of the proposed LFGE project would not change the planned emergency access in the surrounding area, and access to nearby uses would not be altered from the original landfill design. Accordingly, there are no impacts associated with emergency access. Therefore, no further analysis of the issue is required.

The proposed LFGE project would not affect the parking capacity in the proposed LFGE project area. During construction, construction workers would park around the job site, which is located within an existing solid waste landfill on private property, not on public streets. This would not affect parking capacity in the proposed LFGE project area. Once the proposed facility is operational, the one to two employees required to operate the facility would park adjacent to the facility, which is located within the boundary of the solid waste landfill on private property. Accordingly, no impacts would occur regarding parking. Therefore, no further analysis of the issue is required. The proposed LFGE project would result in only two to four additional traffic trips per day and parking would be located entirely on private property with no impacts to public streets in the proposed LFGE project area. The proposed LFGE project would not conflict with any adopted policies, plans, or programs supporting alternative transportation. The traffic impacts of the proposed LFGE project are too small to have any effect on alternative transportation services in the proposed LFGE project area.

CONCLUSION

The proposed LFGE project would result in a less than significant impact to transportation and/or traffic systems. As discussed in response a) above, the proposed LFGE project would generate two to four trips per day by plant employees plus an occasional trip to and from the proposed LFGE project site for facility maintenance. Beyond these trips, no trips would be generated by the proposed LFGE project. The addition of four trips per day is considered an insignificant impact. Implementation of the proposed LFGE project would not increase traffic levels beyond those analyzed in the 2009 PHLF EIR. Accordingly, there would be no additional traffic congestion impacts related to the proposed LFGE project. Therefore, no further analysis of the issue is required.

REFERENCES

EDAW. 2003. 2003 Draft EIR for Potrero Hills Landfill Expansion, Section 4.11, Cultural Resources. Prepared for the County of Solano, Department of Resource Management. Fairfield, CA.

Solano County Airport Land Use Commission. 2002. Travis Air Force Base Land Use Compatibility Plan.

18. UTILITIES AND SERVICES SYSTEMS

Issues (and Supporting Information Sources):	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporation*	*Less Than Significant Impact*	*No Impact*
Would the project:				
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 storm water 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?	☐	☐	☐	☒

The 2009 PHLF EIR determined that the landfill expansion project, which included a conceptual design for the LFGE component, would not result in utilities and services impacts and no mitigation measures were required. This same finding is true for the LFGE project as currently proposed. A brief analysis is provided below.

a) No Impact – Construction of the proposed LFGE project would not generate wastewater. Sanitary waste generated by the one or two workers who would be stationed on-site to operate the plant would be processed through a septic system permitted by Solano County Environmental Health. According to Solano County, there are no restrictions on the development of septic systems at the proposed LFGE project site, provided that the required engineering and

percolation tests are completed and can demonstrate that the septic leach field would operate as designed.

Operation of the proposed LFGE project would result in the generation of rinse water and condensate. Any condensate water generated by the compressors in the LFG treatment process would be returned to the landfill's leachate collection and disposal system in accordance with SFRWQCB requirements. The capacity of the existing leachate system is sufficient to handle the addition of 2,250 gallons per day, the expected maximum output of the proposed LFGE project. Therefore, no impact would result.

b) No Impact – The proposed LFGE project would not generate any wastewater requiring treatment, and thus the proposed LFGE project would not require the construction of new treatment or collection facilities, or the expansion of existing facilities.

Water would be used on a regular basis during construction to control dust and during operations to clean the engines. Because this water would be dispersed on the proposed LFGE project site and would either evaporate or be absorbed into the ground, no wastewater generation is anticipated. Therefore, no impact would occur.

The proposed LFGE project would not demand water supplies in sufficient volumes to require the construction of new water treatment facilities or the expansion of existing facilities. Tanker trucks would be used to supply the proposed LFGE project during the construction and operations phases; the water needed during these phases would be obtained from existing sources, and would not be of large enough volumes to require new or expanded water treatment facilities.

c) Less Than Significant Impact – The proposed LFGE project would not require or result in the construction of new, or expansion of existing, stormwater drainage facilities. A very small portion of the proposed LFGE project site would be covered by impermeable surfaces (the engines themselves would be built on a concrete pad); the remainder of the surface of the proposed LFGE project site would either remain in its natural state or be covered in permeable gravel. Stormwater generated at the proposed LFGE project site (runoff from roofs of the buildings and concrete pads) would be directed on-site so that it infiltrates into the soil as it does today, thus eliminating the need for any off-site stormwater drainage facilities.

d) Less Than Significant Impact – Water utilized at the proposed LFGE project site would be delivered to the site by tanker truck; this water would be purchased and sourced from existing entitlements and resources, and thus no new or expanded entitlements would be needed. The water consumption during construction would be used for dust suppression and miscellaneous construction purposes. During operation, water consumption would consist of a small amount needed for drinking, which would be supplied using bottled water. The toilets would use non-potable water supplied by the landfill. Wastewater from toilets and sinks would be processed by the septic system. Fire suppression at the proposed LFGE project site during the construction and operations phases (if needed) would be accomplished with chemical fire extinguishers.

Because water during construction would only be needed temporarily, and an appropriate source would be secured, impacts would be less than significant. Impacts during operations would also

be less than significant; water would be purchased from appropriate sources, and any water generated at the site would be directed to the leachate collection system or the septic system.

e) No Impact – There would be no wastewater treatment provider that serves or may serve the proposed LFGE project site. The proposed LFGE project is located within the boundary of an existing solid waste landfill that operates its own leachate collection and treatment system and all wastewater is reused on the site. Because the proposed LFGE project contains no permanent source of wastewater that would require public treatment, there is no need to extend centralized wastewater infrastructure to the proposed LFGE project site. Additionally, the proposed LFGE project would not result in a population increase, and thus would not result in an increase in the demand on domestic wastewater treatment plants in the area.

f) Less Than Significant Impact – The California Integrated Waste Management Act of 1989, as amended, also commonly referred to as Assembly Bill 939, requires every California jurisdiction to divert 50% of its solid waste annually from landfills based upon a jurisdiction's planning documents known as the Countywide Integrated Waste Management Plan. Solano County adopted a Source Reduction and Recycling Element in May of 1992 (Solano County 1992) that encourages recycling and reuse of construction debris to the extent practicable. The proposed LFGE project would generate only small volumes of solid waste including packing materials and miscellaneous construction materials and debris; waste generation would be highest during construction and all waste would be properly disposed of. Material that can be salvaged, such as wood, cardboard, metal, and plastic, would be salvaged. The waste generation would be functionally zero during operations.

The small volumes of solid waste that would be generated by the proposed LFGE project would be disposed of at PHLF within which the proposed LFGE project site would be located. This landfill offers sufficient permitted capacity to accommodate the proposed LFGE project's solid waste disposal needs without impacting the County's normal and usual solid waste disposal operations; thus, impacts would be less than significant.

g) No Impact – The proposed LFGE project would apply for, receive, and adhere to the stipulations of all necessary permits issued by the appropriate local, state, and federal agencies with jurisdiction over the generation, storage, and disposal of solid waste. As such, the proposed LFGE project would comply with federal, state, and local statutes and regulations related to solid waste.

CONCLUSION

The proposed LFGE project would result in less than significant impacts to water, wastewater, and solid waste facilities. The proposed LFGE project would not discharge any wastewater to any publicly owned treatment system, would not consume large volumes of water, and would not generate large volumes of solid waste. Less than significant impacts would be realized during the construction phase; these would lessen or be eliminated during the operations phase.

REFERENCES

Solano County. 1992. Source Reduction and Recycling Element and Household Hazardous Waste Element, May.

19. MANDATORY FINDINGS OF SIGNIFICANCE

Issues (and Supporting Information Sources):		*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 cumulative considerable? ("Cumulative 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) Less Than Significant Impact with Mitigation Incorporation – The proposed LFGE project potentially has significant impacts on air quality, biological resources, cultural resources, and geology/soils that would be reduced to less than significant with application of proposed mitigations.

The proposed LFGE project would not degrade the quality of the environment. Air quality impacts during construction will be maintained at levels determined to be less-than-significant with mitigation. Mitigation Measure AIR-1 will ensure that initial site work and paving at the project site shall not be performed on any day on which construction of the Distribution Line Interconnection for this project also occurs.

The proposed LFGE project would not substantially reduce the habitat of a fish or wildlife species or cause a fish or wildlife population to drop below self-sustaining levels. The LFGE plant would be constructed within the existing landfill and would implement the mitigation measures outlined in the 2009 PHLF EIR, the BCDC permit, and other regulatory requirements to protect CTS. Specific mitigation measures (BIO-1, BIO-2, and BIO-3) would be implemented to reduce CTS impacts to less than significant. Collisions and other bird interactions with aboveground portions of the distribution interconnect line would be reduced to less than significant through design measures, as well as the 2009 PHLF EIR mitigation measures and

Mitigation Measures BIO-4 (Avian Management Plan) and BIO-5 (Nesting Bird Surveys). The proposed LFGE project would have no impacts on wetlands, riparian habitat, or other protected habitats, and no impacts on consistency with local ordinances or provisions of any HCP or Natural Community Conservation Plan or other natural resources protection or conservation plan.

The proposed LFGE project would not result in the elimination of important examples of the major periods of California history or prehistory. The potential for historical resources to be present and obscured by landfill material is low; the project site is located in a previously filled and graded area; and the project would not result in the excavation or disturbance of any native soils due to the thick layer of fill underlying the proposed LFGE project site. Even with the low probability of the disturbance to examples of California history or prehistory, the project would be subject to the cultural resource mitigation measure identified in the 2009 PHLF EIR, which would result all potential cultural resource impacts to a less-than-significant level.

b) Less Than Significant Impact with Mitigation Incorporation – The proposed LFGE project would have impacts that are individually limited, and any impacts with the potential to be cumulatively considerable would be reduced to less than significant with the application of proposed mitigation. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. The proposed LFGE project would be constructed within the boundaries of the existing PHLF. The only other project in the area is the approved Potrero Hills Landfill Expansion.

The proposed LFGE project would have no impacts on agriculture, mineral resources, population and housing, and recreation, and therefore, no cumulative impacts would occur. Impacts on aesthetics, energy, greenhouse gases, hazards and hazardous materials, hydrology/water quality, land use/planning, noise, public services, transportation/traffic, as well as utilities and service systems would be less than significant. When combined with the impacts of the landfill, these impacts would not result in a significant cumulative impact. Impacts on air quality, biological resources, and cultural resources would be less than significant with mitigation incorporation. When considered with the impacts of the landfill and with the implementation of mitigation measures that are also applicable to PHLF, these effects would be reduced to less than cumulatively considerable.

c) Less than Significant Impact – The proposed LFGE project would not cause substantial adverse effects on human beings, either directly or indirectly. Emissions from the proposed LFGE project would have a less than significant impact on sensitive receptors. In addition, in providing a renewable energy source, the proposed LFGE project would have a beneficial impact on human beings on a cumulative basis.

In summary, the significance conclusions, as determined by the IS/MND analyses are provided for each environmental topic area below.

Table 19

PHEP IS/MND Sections and Significance Conclusions

#	Environmental Topic Area	IS/MND Conclusion (Highest Impact Rating of all Significance Criteria)
1	Aesthetics	Less than significant
2	Agriculture Resources	No impact
3	Air Quality	Less than significant with mitigation incorporation
4	Biological Resources	Less than significant with mitigation incorporation
5	Cultural Resources	Less than significant with mitigation incorporation
6	Energy	Less than significant
7	Geology / Soils	Less than significant with mitigation incorporation
8	Greenhouse Gases	Less than significant
9	Hazards & Hazardous Materials	Less than significant
10	Hydrology / Water Quality	Less than significant
11	Land Use / Planning	Less than significant
12	Mineral Resources	No impact
13	Noise	Less than significant
14	Population & Housing	No impact

#	Environmental Topic Area	IS/MND Conclusion (Highest Impact Rating of all Significance Criteria)
15	Public Services	Less than significant
16	Recreation	No impact
17	Transportation / Traffic	Less than significant
18	Utilities & Service Systems	Less than significant
19	Mandatory Findings of Significance	Less than significant with mitigation incorporation

REFERENCES

EDAW. 2003. 2003 Draft EIR for Potrero Hills Landfill Expansion. Prepared by EDAW for the County of Solano, Department of Resource Management. Fairfield, CA.

Solano County Planning Department. 2008. Solano County General Plan. November.