



Notice of Preparation

Date: March 28, 2011
To: Responsible and Trustee Agencies and Interested Parties
Lead Agency: Irvine Ranch Water District
Project: Biosolids Handling and Energy Recovery Facilities Project
Review Period: March 28, 2011 to April 26, 2011

This Notice of Preparation (NOP) has been prepared to notify agencies and interested parties that the Irvine Ranch Water District (IRWD) as the Lead Agency is beginning preparation of an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) for the proposed Biosolids Handling and Energy Recovery Facilities Project (proposed project). The proposed project would be located onsite at the existing Michelson Water Recycling Plant (MWRP) property, located at 3512 Michelson Drive, Irvine, CA 92612. The proposed project would provide a complete biosolids processing, biogas management, and energy generation system for the MWRP and Los Alisos Water Recycling Plant (LAWRP). The proposed project would construct new solids-handling facilities at the MWRP that would thicken, stabilize, dewater, and dry biosolids. Stabilization would be achieved using anaerobic digestion, which would generate biogas as a byproduct. Biogas would be conveyed to a fuel cell to generate electricity and heat. The electricity would be used as an energy source for other processes at the MWRP. The proposed project would produce two classes of biosolids, as defined by Title 40 of the Code of Federal Regulations Part 503 (40 CFR Part 503), Standards for the Use or Disposal of Sewage Sludge: Class A pellets that could be reclaimed for beneficial use as a fertilizer or biofuel, and Class B cake that could be land applied as a fertilizer, composted, or otherwise disposed in a landfill.

IRWD is soliciting the views of interested persons and agencies as to the scope and content of the environmental information to be evaluated in the EIR. In accordance with CEQA, agencies are requested to review the project description provided in this NOP and provide comments on environmental issues related to the statutory responsibilities of the agency. The EIR will be used by IRWD when considering approval of the proposed project.

In accordance with the time limits mandated by CEQA, comments on the NOP must be received by IRWD no later than 30 days after publication of this notice. We request that comments be received no later than **April 26, 2011 at 5:00 p.m.** Please send your comments to: Paul Weghorst, Principal Water Resources Manager, Irvine Ranch Water District, 15600 Sand Canyon Ave, Irvine, CA 92618, or weghorst@irwd.com. Please include a return address and contact name with your comments.

A public scoping meeting will be held to receive public comments and suggestions on the project. The scoping meeting will be open to the public on:

DATE: April 12, 2011
TIME: 6:30 p.m. doors open / 7:00 p.m. presentation begins
LOCATION: Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618

Introduction

IRWD proposes to implement the Biosolids Handling and Energy Recovery Facilities Project (proposed project) to provide a complete biosolids processing, biogas¹ management, and energy recovery system for the Michelson Water Recycling Plant (MWRP) and Los Alisos Water Recycling Plant (LAWRP). The proposed project would construct new solids-handling facilities at the MWRP that would thicken, stabilize, dewater, and dry biosolids. Stabilization would be achieved using anaerobic digestion, which would generate biogas that could be put to beneficial reuse or be conveyed to a fuel cell, or other technology, to generate electricity and heat. The electricity would be used as an energy source for other processes at the MWRP. The proposed project would produce two classes of biosolids, as defined by Title 40 of the Code of Federal Regulations Part 503 (40 CFR Part 503), Standards for the Use or Disposal of Sewage Sludge: Class A pellets that could be reclaimed for beneficial use as a fertilizer or biofuel, and Class B cake that could be land applied as a fertilizer, composted, or otherwise disposed in a landfill.

Currently, all sludge generated at the MWRP is conveyed through pipes to the Orange County Sanitation District (OCSD) for processing and reuse or disposal. For the sludge generated at the LAWRP, IRWD contracts with Synagro to haul solids offsite and process them for reuse or disposal. Until recently, these arrangements worked well; however, recent negotiations between OCSD and IRWD have shown that OCSD's future charges for the costs associated with residuals management services will increase sharply. In addition, sending sludge to OCSD or Synagro prevents IRWD from making beneficial use of a renewable resource. The proposed project provides IRWD with an alternative residuals management strategy.

Project Background

IRWD was established in 1961 as a California Water District pursuant to the California Water District Law (California Water Code, Division 13). IRWD provides potable and recycled water, sewage collection and treatment, and urban runoff treatment to municipal and industrial (M&I), and agricultural customers within an 115,531-acre service area in Orange County, California.

IRWD recycles non-potable water from the wastewater it collects via its sewer collection system. IRWD delivers the wastewater from its collection system to either the MWRP or the LAWRP, where it is reclaimed with a tertiary treatment process. It is then conveyed through the recycled water distribution system and sold to customers. IRWD currently is implementing the Phase 2 Expansion Project at the MWRP, which will increase the MWRP capacity from 18 mgd to 28 mgd to meet recycled water demands in 2025. The MWRP Phase 2 Expansion Project maintains the MWRP as a liquid-only treatment facility. Since 1988, all residuals from the MWRP have been conveyed to OCSD for processing and disposal. However, by 2016, OCSD anticipates that it will reach maximum capacity at its solids handling facilities and will need to make significant capital investments to expand its solids processing facilities. During 2009, IRWD evaluated alternative solids handling strategies for the MWRP and LAWRP. The resulting *Preliminary Evaluation of System of System-Wide Biosolids Management Alternatives Report*

¹ Biogas consists of the mixture of methane and carbon dioxide produced by the proposed biosolids treatment process.

(HDR, 2009) concluded that it would be cost effective for IRWD to implement solids handling at the MWRP rather than continuing to transport sludge to OCSD. In November 2009, IRWD's Board of Directors decided to pursue solids handling facilities at MWRP and notified OCSD that it will cease conveying MWRP residuals to the OCSD system by 2016.

Project Objectives

IRWD's objectives for this project consist of the following:

- Allow IRWD to make efficient and sustainable use of its own renewable resources.
- To make beneficial use of recaptured biogases and allow for beneficial use of the biosolids produced during the treatment process.
- Increase IRWD's autonomy for residuals management.
- Minimize environmental impacts associated with residuals management.
- Construct a biosolids handling and energy recovery facility that adequately provides for IRWD's future biosolids handling needs.

Project Location

The proposed project would be constructed onsite at the existing IRWD property, located at 3512 Michelson Drive, Irvine, CA 92612 (see **Figure 1**). The Biosolids Handling and Energy Recovery Facilities would be constructed within a 4.6-acre rectangular-shaped area that currently is vacant land occupied as construction staging for the MWRP Phase 2 Expansion Project. Approximately 300 acres of the IRWD property constitute the San Joaquin Wildlife Sanctuary. Within a two-mile radius of the MWRP are a mixture of residential land uses, as well as recreational, conservation/open space, commercial and industrial park uses; John Wayne Airport; University of California at Irvine; William R. Mason Regional Park; and Rancho San Joaquin Golf Course (Figure 1).

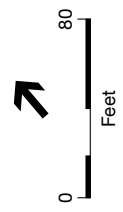
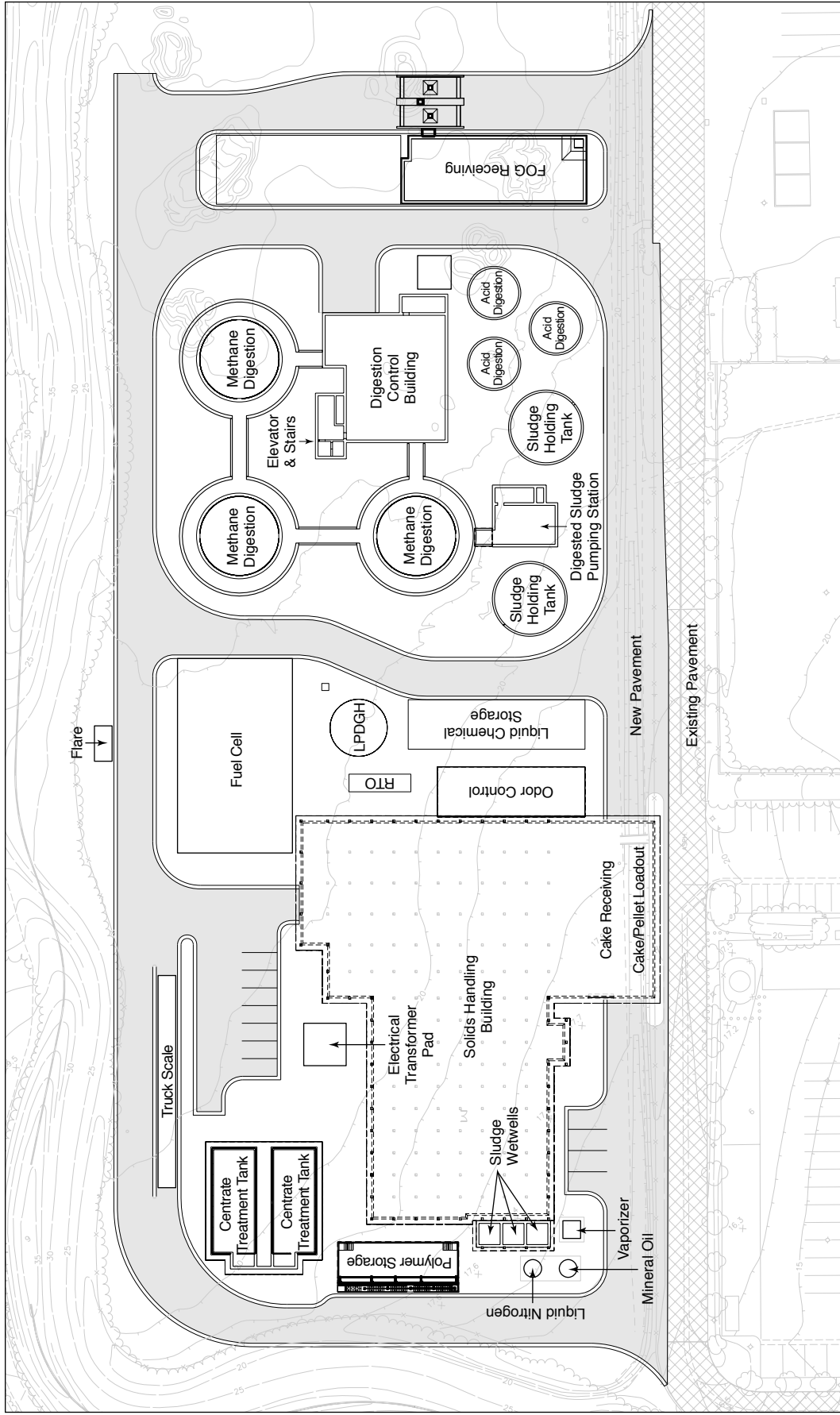
Project Description

The proposed project would construct new biosolids processing, biogas management, and energy generation facilities at the MWRP. The proposed solids-handling facilities would thicken, stabilize, dewater, and dry solids that are generated at the MWRP. The new facilities to be constructed at the proposed MWRP are shown in **Figure 2**. Stabilization of sludge would be achieved using anaerobic digestion, which would generate biogas as a byproduct. The biogas could be conveyed to a fuel cell to generate electricity and heat. The electricity would be used as an energy source for other processes at the MWRP. In addition to sludge, fats, oil and greases (FOG) associated with restaurant waste would be added to the digesters as a feedstock to increase biogas production. Currently, the majority of FOG in Orange County is transported to OCSD



IRWD Biosolids and Energy Recovery Project - 210480
Figure 1
 Project Location

SOURCE: ESA; Globexplorer, 2011.



IRWD Biosolids and Energy Recovery Project - 210480
 SOURCE: Black & Veatch, 2011.
Figure 2
 MWRP Preliminary Site Plan

for processing and disposal. The proposed project would allow diversion of a portion of this FOG to the MWRP.

Digested sludge would be dewatered to produce Class B biosolids or would be dried in a rotary drum dryer to produce pelletized Class A biosolids. Class A biosolids would be put to beneficial use as a fertilizer or used as an e-fuel in an incinerator. Pelletized biosolids would be distributed in bulk using trucks or transferred to an onsite or offsite bagging operation for smaller scale distribution. When the dryer is out of service for an extended period, the Class B biosolids would be hauled offsite for beneficial use or disposal.

In addition to the sludge produced at the MWRP liquid-only facilities, sludge from the LAWRP would be conveyed using trucks to the MWRP for processing. IRWD also may contract with other agencies, such as South Orange County Water Authority (SOCWA), to accept additional truckloads of sludge for processing, within the capacity limitations of the facilities. Currently, IRWD estimates that up to 30 truck loads of sludge per week would be brought to MWRP from LAWRP, SOCWA, or other agencies. The following is a summary of the facilities to be constructed at the MWRP as shown in Figure 2:

- **Solids Handling Building:** The Solids Handling Building would house the solids processing facilities which would include thickening, dewatering, and drying processes, as well as a truck load-out bay for trucking treated biosolids offsite. The Solids Handling Building would have two interior levels and a footprint of approximately 32,000 square feet. The building height would vary, with the highest point approximately 70 feet above grade.
- **Anaerobic Digestion System:** The objective of anaerobic digestion is to convert thickened sludge to a more organically stable form of biosolids and to reduce the amount of biosolids produced. The organic mass of sludge fed to digesters is biologically consumed and converted to biogas and biosolids. The digestion system for the proposed project would include a FOG receiving station; acid digesters; methane digesters; a digested sludge holding tank (DSHT); heating system, and gas-handling facilities.
- **Biogas Handling System:** The purpose of the Biogas Handling System is to optimize the reuse of biogas produced in the digesters. Biogas would be used primarily for cogeneration in the fuel cell or in the dryer, other beneficial uses, or transferred to a waste gas burner.
- **Recycle Treatment:** The liquid from the dewatering centrifuges contains high concentrations of ammonia. The Recycled Treatment system would equalize and treat this sidestream to remove ammonia before returning it to the MWRP liquid-only treatment facilities.
- **Odor Control:** All foul air would be collected from all odor point sources and routed to odor control scrubbers.

Potential Environmental Effects

The EIR will assess the physical changes to the environment that would likely result from construction and operation of the proposed project, including direct, indirect and cumulative impacts. Potential impacts of the proposed project are summarized below. The EIR will identify mitigation measures if necessary to minimize potentially significant impacts of the proposed project. The EIR also will include an analysis of project alternatives as required by CEQA.

Aesthetics

The existing aesthetic quality of the project area is dominated by the MWRP treatment facilities and IRWD Operations Center, the San Joaquin Wildlife Sanctuary, San Diego Creek, open space and surrounding land uses. The EIR will evaluate the proposed project for impacts related to aesthetic resources, including scenic vistas and visual character.

Air Quality and Greenhouse Gas (GHG) Emissions

The proposed project would affect air quality during both project construction and operation. Construction emissions would be due to equipment exhaust, earth movement, construction workers' commute, and material hauling. The EIR will estimate construction-related emissions and long-term operational emissions, including total CO₂-equivalent emissions for evaluating the effects of GHGs. The project would utilize biogas, an environmentally-friendly fuel (efuel), to offset the project's electricity demand and dependence on non-renewable fuel. The EIR will compare project emissions with the South Coast Air Quality Management District (SCAQMD) thresholds of significance and also will evaluate the project's consistency with the regional air quality attainment plans. The EIR will examine the project's effects on global climate change and evaluate consistency of the project with the State's GHG emissions reduction goals.

Biological Resources

The proposed project would be constructed primarily within the boundaries of a previously disturbed site. The site is located adjacent to the San Joaquin Wildlife Sanctuary, although it is separated from the Sanctuary by a vegetated earthen berm and proposed floodwall. The EIR will evaluate the potential for construction of the proposed project to have indirect effects to biological resources, such as sensitive species, habitats, and natural communities, and will evaluate the project's consistency with the Orange County Natural Community Conservation Plan/ Habitat Conservation Plan (NCCP/HCP), local ordinances, and state and federal regulations governing biological resources.

Cultural Resources

There are known cultural resources in the vicinity of the project area. Although the project site is located in a previously-disturbed area, excavation below the top soil could uncover previously unknown archaeological or paleontological resources. The EIR will assess the potential effects of the proposed project on cultural resources. Mitigation measures will be developed if necessary to reduce the level of impact where possible.

Geology, Soils and Seismicity

The proposed project would be located in a seismically active region. The construction of project components could be subject to potential seismic hazards including ground shaking. In addition, construction activities could expose soils to storm water erosion. The EIR will evaluate geologic hazards in the region and will develop mitigation measures if necessary to reduce potential effects from the proposed project.

Hazards and Hazardous Materials

The proposed project would introduce new process chemicals that would be stored and used onsite. The EIR will summarize known hazardous waste contamination sites in the project area and will list potentially hazardous materials used and stored during construction and operation of the project. The EIR will include mitigation measures for safe handling and disposal of hazardous materials, if necessary. The EIR also will address the potential for soil contamination and groundwater contamination and will develop mitigation measures to prevent contamination, if necessary.

The Class A and Class B biosolids to be produced by the proposed project are not classified as hazardous materials. The EIR will discuss any potential impacts associated with reuse applications and disposal of this material, including overviews of the regulations governing such reuse and disposal that protect public health and the environment.

Hydrology and Water Quality

The proposed project would change the drainage patterns at the project site, which could affect the volume and quality of surface runoff that in turn could affect local surface water resources. Excavation and construction activities would affect storm water quality if sediment or spills run off the project construction site. The EIR will identify storm water quality protection measures required during construction activities such as sediment fencing and spill prevention and containment. The proposed project is not expected to affect groundwater recharge or the water table.

Land Use

The EIR will identify current land uses and sensitive receptors in the project vicinity. Local General Plans, airport land use plans, and habitat conservation plans will be identified and summarized if applicable. The EIR will identify the adopted goals and policies that could be affected by implementing the proposed project at the MWRP. The EIR will evaluate consistency of the proposed project with existing land use and zoning designations and develop mitigation measures to avoid or substantially lessen inconsistencies where feasible. If a conditional use permit (CUP) is required for the project, the City of Irvine as a Responsible Agency could use the EIR to support the approval of the CUP.

Noise

Construction and operation of the proposed project would generate noise that could affect nearby residences and other sensitive receptors in the project vicinity. The proposed project would be designed to adhere to the City of Irvine's Municipal Code, which provides maximum noise thresholds at the property line (Title 6, Division 8, Chapter 2). The outdoor operational noise associated with the proposed project would be combined with the sound levels of the existing MWRP and the Phase 2 Expansion Project. The EIR will evaluate the proximity of sensitive receptors to the project site and recommend mitigation measures if necessary to ensure that the proposed project complies with local policies and ordinances.

Population and Housing / Growth Inducement

The proposed project would relocate the location of solids handling associated with the MWRP and LAWRP. The proposed project would not build new housing or otherwise have a direct impact on population growth in the project area. The EIR will identify the capacity of the new solids handling system and evaluate the potential for the proposed project to indirectly induce growth and result in secondary environmental effects associated with growth.

Recreation

The project site is directly adjacent to hiking trails in the San Joaquin Wildlife Sanctuary. The EIR will discuss potential impacts to recreational activities in the project vicinity. The EIR will identify thresholds of significance for impacts to recreational facilities and will evaluate effects based on these thresholds. The EIR will identify feasible mitigation measures to reduce the effects of the proposed project to the accessibility of recreation facilities in the area.

The Class A pelletized biosolids produced by the proposed project could be used as fertilizer at recreational facilities such as golf courses and parks. The EIR will discuss the effects to the public, if any, related to the substitution of pellets for fertilizer at recreational facilities.

Traffic and Transportation

Construction of the proposed project would temporarily add additional truck trips to the local transportation corridors for purposes of materials delivery and construction worker commutes. Operation of the proposed project would require regular deliveries of regulated materials for use in the biosolids process at the MWRP site and regular haul trips to distribute the product biosolids for reuse or disposal. The EIR will characterize roadway traits, traffic flow, access, and circulation conditions on affected roadways and at major intersections in the project area. The EIR will assess the potential for construction traffic and operational traffic to affect local roadways. The EIR will develop mitigation measures if necessary to minimize any potential effects.

Utilities and Service Systems

The EIR will review the potential effects of the proposed project on utilities and public services resulting from both construction and operation of the project. The EIR will evaluate landfill capacity to accommodate the proposed project's solid waste disposal needs and compliance with federal, state, and local regulations related to solid waste.

