3.18 Utilities and Service Systems

3.18.1 Introduction

This section provides an overview of the existing utilities and service systems at or in the vicinity of the IRP components. The significance of impacts is analyzed for each of the four Project Alternatives and the No Project Alternative. Where applicable, mitigation measures to reduce the impacts associated with each Alternative are provided. The focus of this analysis is on utilities and service systems within the HSA.

3.18.2 Environmental Setting

This section describes the utilities and service systems known to occur within the HSA, specifically those relevant to each component of the IRP.

3.18.2.1 General Setting

Solid Waste

The City of Los Angeles Bureau of Sanitation (Bureau of Sanitation) and private waste management services provide solid waste management services within the City of Los Angeles. Solid waste management services include solid waste collection and recycling, household hazardous waste handling, and the operation and maintenance of City of Los Angeles landfills (Bureau of Sanitation, 2005). The five major sectors of solid waste generation in the HSA are: single-family residential, multifamily residential, commercial, construction and demolition, and landscaping waste (Bureau of Sanitation, 2002).

Nonhazardous waste generated in the City of Los Angeles generally is disposed of in two privately owned landfills or one landfill operated by the Los Angeles County Sanitation District (LACSD), depending on the source location ("wasteshed"). Details regarding the location and throughput of these landfills are summarized in Table 3.18-1.

Table 3.18-1. Nonhazardous Landfills Used by the City of Los Angeles
Integrated Resources Plan EIR

Name	Address	Owner/ Operator	Wasteshed	Daily Throughput (tons/day)	Remaining Capacity (cubic yards)
Bradley Landfill West and West Extension	9227 Tujunga Avenue, Sun Valley	Waste Management, Inc.	N/A	10,000	4,725,968 (as of 2002)
Calabasas Sanitary Landfill	5300 Lost Hills Road, Agoura	Los Angeles County Sanitation Districts	Excludes the City of Los Angeles except West Valley.	3,500	25,400,000 (as of 2002)
Sunshine Canyon Sanitary Landfill County Extension	14747 San Fernando Road, Sylmar	Browning-Ferris Industries of California, Inc.	N/A	6,600	16,000,000 (as of 2001)

Source: LACSD 2005; CIWMB, 2005b

The LACSD operates other landfills in the County of Los Angeles; however, many of these facilities are restricted from receiving waste from outside a specified wasteshed. For example, the Calabasas Sanitary Landfill has a restricted wasteshed that excludes receipt of waste from the City of Los Angeles, but does accept waste from the westernmost portion of the San Fernando Valley and from approximately the northwestern portion of Los Angeles County. The LACSD also operates Puente Hills and Scholl Canyon landfills. The LACSD Board of Directors passed an ordinance prohibiting Puente Hills from accepting waste generated in the City of Los Angeles or Orange County. The City of Glendale passed an ordinance limiting acceptance of solid waste by Scholl Canyon, located in the City of Glendale, to a specified wasteshed that excludes the City of Los Angeles. Therefore, the Calabasas Landfill is the only landfill in the City of Los Angeles area operated by the LACSD that would be able to accept waste from the Proposed Alternatives (LACSD, 2005). Two privately owned landfills (Bradley West and Sunshine Canyon) accept solid waste from the City of Los Angeles with no area restrictions.

In addition, certain landfills accept wastes considered to be beneficial-use materials, such as soil, green waste, and asphalt. Soils are used as part of regular landfill operations and also are used to cap closed landfills. Several landfills in the greater Los Angeles area accept excavated soil, including those that otherwise are restricted by ordinances from accepting municipal solid waste generated in the City of Los Angeles. Table 3.18-2 presents information on landfills that accept soil.

Table 3.18-2. Landfills That Accept Soil
Integrated Resources Plan EIR

Name	Availability and Restrictions
Bradley Landfill West and West Extension (Waste Management, Inc.)	Accepts clean soil for free or for a $100 charge, depending on the type of truck used to haul the load. No daily limit exists, and drop-hours are restricted. This landfill may be closing, depending City of Los Angeles approval of an extension. In the event of closure, soils would be needed to install a soil cap.
Scholl Canyon Landfill (LACSD)	Accepts clean soil free of charge with no daily limit. This landfill has an estimated closure date of 2019.
Puente Hills Landfill (LACSD)	Accepts clean soil free of charge with a limit on soil that varies daily based on the total incoming waste stream. On average, Puente Hills accepts 500 to 800 loads of soil prior to closing. Drop-off hours are restricted. This landfill has an estimated closure date of 2013.
Calabasas Sanitary Landfill (LACSD)	Accepts clean soil for a tipping fee of $26.35/ton, the same as municipal solid and inert waste. This landfill has an estimated closure date of 2028.
Sunshine Canyon Sanitary Landfill County Extension (BFI, Inc.)	Accepts soil for a tipping fee of $42 per ton, the same as municipal waste. Daily limit based of 6,600 tons per day throughput. Estimated closure date of 2011.
Vulcan Materials Company (Sun Valley) (dba Cal-Mat)	Accepts clean soil for a tipping fee based on the type of truck delivering the load. Daily limit based on 6,000 tons/day throughput, which has never been reached. Estimated closure date of 2025.
Source: California Integrated Waste Management Board Solid Waste Information System http://www.ciwmb.ca.gov/SWIS	

Hazardous materials are hauled to an appropriate Class I landfill. Waste is classified as a hazardous material if it has a hazardous characteristic, such as being ignitable, corrosive, toxic, or reactive, or if the material is defined as hazardous by EPA. Hazardous materials are addressed separately in Section 3.10 – Hazards and Hazardous Materials. The closest Class I landfill for disposal of waste from the IRP components is the Kettleman Hills facility in Kings County. The estimated remaining capacity of the Kettleman Hills Landfill is 3,374,413 cubic yards.

Electricity

LADWP provides electrical service to 3.8 million residents of the City of Los Angeles through 1.4 million service connections. The LADWP maintains an extensive system of transmission and distribution lines to deliver more than 23 million megawatt hours, or 23 billion kilowatt hours (kWh), of electricity per year. The LADWP provides electrical services not only to the City of Los Angeles, but also to portions of the Owens Valley and some areas bordering the City of Los Angeles.

As part of its ongoing efforts to improve air quality and reduce consumption of fossil fuels, the LADWP is developing a Renewable Portfolio Standard (RPS). The objective of the RPS is to increase the amount of energy generated from renewable sources. The LADWP is planning on these sources to provide up to 1,320,000 megawatt hours per year of additional renewable energy by the end of 2010. Alternate power sources include solar, wind, geothermal, biomass, hydro, and other types of energy that are naturally occurring and stable. In addition, LADWP has increased energy efficiency and decreased emissions in the City of Los Angeles by "repowering" 10 of its aging, in-basin, natural gas-powered, generating units (LADWP, 2005).

Natural Gas

The Southern California Gas Company (The Gas Company) provides natural gas service in the HSA. The Gas Company is the largest natural gas distribution utility in the nation, providing nearly 1 trillion cubic feet of natural gas annually, which represents approximately 5 percent of all natural gas delivered in the United States. The Gas Company service area encompasses 23,000 square miles covering most of Central and Southern California, from Visalia to the border of Mexico, and provides natural gas service to approximately 19.5 million people. Natural gas is purchased on the open market and is distributed through 5.5 million gas meters. The California Public Utilities Commission (CPUC) regulates the operations of The Gas Company (The Gas Company, 2005).

3.18.2.2 Components

Project-Level Components

Hyperion

Solid Waste. Solid waste currently generated by employees of Hyperion was calculated using the solid waste generation rate for industrial land uses of 8.93 pounds per employee per day, as set forth in the City of Los Angeles *Draft CEQA Thresholds Guide* (City of Los Angeles, 1998). Based on this information, it is estimated that the 545 employees at Hyperion currently generate approximately 889 tons of solid waste annually.

Currently, Hyperion processes and handles approximately 650 wtpd of biosolids, all of which currently is reused beneficially through land application at the City-owned Green Acres Farm in Kern County. No biosolids produced at Hyperion are disposed at landfills.

Hyperion is required to comply with the California Solid Waste Reuse and Recycling Access Act of 1991 and the California Integrated Waste Management Act of 1989, as amended, which requires the provision of adequate storage areas for collection and removal of recyclable materials. Solid waste from Hyperion is disposed at either the Bradley West or Sunshine Canyon Landfill. Hazardous waste used at Hyperion is disposed at the Kettleman Hills Landfill. Refer to Section 3.10 – Hazards and Hazardous Materials for more information on storage, use, transport, and disposal of hazardous solid waste.

Electricity. From August 2002 to July 2003, Hyperion used approximately 173 million kWh of electricity. This represents approximately 0.8 percent of the total annual electricity that LADWP provides. In addition, the biogas production from anaerobic digestion of biosolids is exported to the LADWP Scattergood Generating Station for energy recovery. A pipeline exists to deliver steam from Scattergood Generating Station to Hyperion for heating the digesters (City of Los Angeles, 2004). This is a closed loop between the Scattergood Generating Station and Hyperion and does not affect the regional supply of electricity.

Natural Gas. From January to December 2004, Hyperion operations consumed 22,339 therms of natural gas, or an average of 1,862 therms per month. Hyperion employs natural gas for nonprocess uses, such as for heating the administration buildings. Natural gas also is used as part of the wastewater treatment process to heat the digesters in combination with the recovered energy from Scattergood Generating Station. The amount of natural gas needed varies depending on the amount of recovered energy from Scattergood; thus, the total amount of natural gas consumed is related to the amount of wastewater treated daily. In 2004, approximately 7,981 therms of the 22,339 therms (about 35 percent of the total) consumed were used for this process.

Tillman

Solid Waste. Using the solid waste generation rate for industrial land uses of 8.93 pounds per employee per day, the 74 employees at Tillman generate approximately 121 tons of waste annually. As with Hyperion, Tillman is required to comply with the California Solid Waste Reuse and Recycling Access Act of 1991 and the California Integrated Waste Management Act of 1989. Solid waste from Tillman is disposed at any of the three landfills previously described that serve the City of Los Angeles. Hazardous waste is disposed at the Kettleman Hills Landfill. Tillman does not produce or handle biosolids.

Electricity. In 2004, Tillman used approximately 24.7 million kWh of electricity. This represents approximately 0.1 percent of the total annual electricity that LADWP provides.

Natural Gas. From June 2003 to June 2004, Tillman operations consumed 22,368 therms of natural gas, or an average of 1,864 therms per month. Natural gas consumption was highest December through February and lowest in July and August. Tillman consumes natural gas for nonprocess uses only. Therefore, the amount of natural gas consumed is not dependent on the daily treatment capacity.

LAG

Solid Waste. Using the solid waste generation rate for industrial land uses of 8.93 pounds per employee per day, 45 employees at LAG currently generate approximately 73 tons of waste annually. As with Hyperion and Tillman, LAG is required to comply with the California Solid Waste Reuse and Recycling Access Act of 1991 and the California Waste Management Act of 1989. Solid waste from LAG is disposed at the Bradley West or Sunshine Canyon Landfill, but not at the Calabasas Landfill because LAG is outside the approved wasteshed for this landfill. Hazardous waste from LAG is disposed at the Kettleman Hills Landfill. LAG does not produce or handle biosolids.

Electricity. In the year 2004, LAG used approximately 7.8 million kWh of electricity. This represents just over 0.03 percent of the total annual electricity that LADWP provides (Mays, 2005).

Natural Gas. Processes at LAG do not use natural gas (Mays, 2005).

NEIS II

The proposed NEIS II Alignments are located entirely in the City of Los Angeles.

Solid Waste. The existing population in the vicinity of the proposed NEIS II Alignments is served by the same solid waste services as described above under LAG. Disposal would be at either the Bradley West or Sunshine Canyon Landfill.

Electricity. The existing population in the vicinity of the proposed NEIS II Alignments is served by the same electricity supply infrastructure as described under LAG.

Natural Gas. The existing population in the vicinity of the proposed NEIS II Alignments is served by the same natural gas supply infrastructure as described under LAG.

GBIS

The proposed GBIS Alignments would be located in the City of Los Angeles with the exception of the Riverside West shaft site, which is associated with construction of GBIS North Alignment in the City of Burbank.

Solid Waste. Solid waste service for the existing population in the vicinity of the proposed GBIS Alignments is served by the same solid waste services as described in this section under General Setting. Disposal would be at either the Bradley West or Sunshine Canyon Landfill.

Electricity. The existing population in the vicinity of the proposed GBIS Alignments is served by the same electricity supply infrastructure as described in this section under General Setting.

Natural Gas. The existing population in the vicinity of the proposed GBIS Alignments is served by the same natural gas supply infrastructure as described in this section under General Setting.

Program-Level Components

VSLIS

The existing population in the vicinity of the VSLIS Alignment is served by the same solid waste and energy supply infrastructure as described in this section under General Setting.

Recycled Water

The existing population in the vicinity of the recycled water distribution system for irrigation or industrial users and groundwater recharge options is served by the same solid waste and energy supply infrastructure as described in this section under General Setting.

Dry Weather Runoff – Smart Irrigation

The existing population is served by the same solid waste and energy supply infrastructure as described in this section under General Setting.

Dry Weather Runoff – Low-Flow Diversions

The existing population in the vicinity of the low-flow diversions is served by the same solid waste and energy supply infrastructure as described in this section under General Setting.

Dry Weather Runoff – Urban Runoff Plants or Treatment Wetlands

The existing population in the vicinity of the dry weather runoff URP sites or treatment wetlands is served by the same solid waste and energy supply infrastructure as described in this section under General Setting.

Wet Weather Runoff – Urban Runoff Plants

The existing population in the vicinity of the wet weather runoff URP sites is served by the same solid waste and energy supply infrastructure as described in this section under General Setting.

Wet Weather Runoff – Onsite Management

The existing population in the vicinity of onsite management sites is served by the same solid waste and energy supply infrastructure as described in this section under General Setting.

Wet Weather Runoff – Non-Urban Regional Recharge
The existing population in the vicinity of the non-urban recharge is served by the same solid waste and energy supply infrastructure as described in this section under General Setting.

3.18.3 Environmental Impacts

3.18.3.1 Background

Presented below are brief discussions of the regulatory framework, methodology, and thresholds of significance used to analyze each Alternative.

Regulatory Framework

Federal
No federal agencies or regulations are applicable to utilities and service systems.

State
California Solid Waste Reuse and Recycling Access Act. The California Solid Waste Reuse and Recycling Access Act of 1991 stipulates that each jurisdiction must adopt an ordinance by September 1, 1994, requiring any development project for which a Building Permit application is submitted (after the effective date of this ordinance) to provide an adequate storage area for collection and removal of recyclable materials.

California Integrated Waste Management Act. The California Integrated Waste Management Act of 1989 (AB939) was designed to focus on source reduction, recycling and composting, and environmentally safe landfilling and transformation activities. This act required cities and counties to divert 25 percent of all solid waste from landfills and transformation facilities by 1995, and 50 percent by 2000. This Act, as amended, requires every county and city in the state to prepare a Source Reduction and Recycling Element (SRRE), which identifies programs that the county or city will implement to achieve a solid waste disposal reduction goal of 50 percent by the year 2000, or as soon as possible thereafter. The Act also requires each city and county to prepare a Household Hazardous Waste Element (HHWE) and Nondisposal Facility Element (NDFE), and each county to prepare a Countywide Siting Element and Summary Plan. The aggregate of all the SRREs, HHWEs, NDFEs, the Siting Element, and a Summary Plan constitutes a Countywide Integrated Waste Management Plan (IWMP).

California Public Utilities Commission. The CPUC regulates privately owned electric, telecommunications, natural gas, water, and transportation companies, in addition to household goods movers and rail safety. CPUC is responsible for assuring that California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud and promoting the health of the California economy. CPUC also enforces CEQA requirements for utility construction.

California Energy Commission. Created by the legislature in 1974, the California Energy Commission regulates the provision of electricity and natural gas in the State of California. As it relates to the Proposed Project, the commission has the responsibility to:

- Forecast future energy needs and keep historical energy data
- Promote energy efficiency and develop energy technologies and supporting renewable energy
- Planning for and directing state response to an energy emergency

With the signing of the Electric Industry Deregulation Law in 1998 (AB1890), the role of the commission includes overseeing funding programs that support public interest energy research; advance energy science and technology through research, development, and demonstration; and provide market support to existing, new, and emerging renewable technologies.

Local

The City of Los Angeles Solid Waste Management Policy Plan (SWMPP) is the long-range solid waste management policy plan for the City. The SWMPP calls for the disposal of the remaining waste in local and possibly remote landfills. Also, the SWMPP provides direction for the solid waste management hierarchy and integrates into all facets of solid waste management planning. It ensures that disposal practices do not conflict with diversion goals. It also serves as an umbrella document for the SRRE for the City of Los Angeles, which is the strategic action policy plan for diverting solid waste from landfills, as well as other citywide solid waste management planning activities. In addition, the goals of the SWMPP reflect the importance of source and materials recovery to the success of the plan and, therefore, the intent of the city to follow the integrated waste management hierarchy that forms the basis of the California Integrated Waste Management Act.

The state requires that all jurisdictions achieve compliance with the California Integrated Waste Management Act by reaching a diversion rate of 50 percent by the year 2000. In response to this legislation, the City of Los Angeles established a self-imposed goal of 70 percent diversion of solid waste by the year 2020 (Bureau of Sanitation, 2005). For the year 2002, the City of Los Angeles achieved a 62 percent diversion rate, surpassing the current state-mandated level. The total amount of solid waste generated by the City of Los Angeles in the year 2002 was approximately 9.35 million tons, and the amount disposed was approximately 3.5 million tons, or 9,589 tons per day (CIWMB, 2005a).

The City of Los Angeles SRRE serves as a guidance document and strategic action plan for diverting solid waste from landfills, including source reduction, recycling, composting, special waste, and public education. The SRRE provides a 10-year program-level plan for solid waste diversion objectives between 1990 and 2000 and is updated annually based on an ongoing evaluation of programs and waste analysis. Guidance for, and implementation of, the solid waste diversion programs identified in the SRRE are administered by the City of Los Angeles Department of Public Works, Bureau of Sanitation.

Furthermore, the Bureau of Sanitation established and currently operates a Curbside Recycling Program, as well as recycling programs for curbside yard trimmings, backyard composting/grass cycling, drop-off yard trimmings, horse manure diversion, biosolids diversion, and bulky item recycling, all of which promote source reduction to achieve the goals established by the Integrated Waste Management Act and associated City of Los Angeles programs (e.g., the SRRE). In addition, the Bureau of Sanitation operates a household hazardous waste program (HHW), the Mobile Household Hazardous Waste Collection Program, which is a collection center that rotates among approximately 24 locations throughout the City of Los Angeles collecting various types of household hazardous waste, including used motor oil. The HHW is the City of Los Angeles program that implements the HHWE, as required by AB939 (Bureau of Sanitation, 2001).

In addition to the state regulations listed above, LADWP and The Gas Company are directed by various internal standards and policies that guide the provision of service to their customers.

Methodology

The assessment of impacts to solid waste and energy supply infrastructure varies depending on the utility, but generally includes the comparison of component-generated demand with existing and anticipated resource supplies and/or conveyance capacity. Solid waste impacts involve the estimation of proposed component-related, land use-based solid waste generation compared with the capacity of the landfill(s) serving the area of the component. Similarly, determination of impacts to electricity and natural gas supplies depends on estimation of demand generated by proposed component uses compared with availability and capacity of existing supplies and the conveyance infrastructure.

Thresholds of Significance

The two thresholds of significance for utilities were developed using guidance from Sections K.1 through K.4 of the *Draft L.A. CEQA Thresholds Guide* (City of Los Angeles, 1998) and Appendix G of the *California Environmental Quality Act (CEQA) Guidelines* (CELSOC, 2005). The Proposed Project would have a significant utility and service system impact if it:

U-1: Reduces available landfill capacity (including hazardous waste landfills) such that new facilities would be required

U-2: Requires construction of new offsite energy supply facilities and/or distribution infrastructure, or capacity enhancing alterations to existing facilities

3.18.3.2 Component Impacts

Project-Level Impacts

Hyperion Expansion to 500 mgd

Construction of this component would generate debris from demolition of the existing conventional digesters and handling facilities and from the parking lot emergency storage area, administration building, and laboratory where the proposed secondary clarifier would be located. Debris from demolition would be reused or recycled, with the remaining unrecyclable material transferred to landfills, and soil from excavation would be exported for secondary use or landfilling. This component would generate an estimated 286,860 cubic yards (yd^3) of inert demolition debris (asphalt and concrete) and 525,417 yd^3 of excavated soil over the course of the construction period.

Construction activities temporarily would use additional amounts of electricity for potable emergency and/or construction generators. This additional amount of electricity needed for construction would be short term and considered nominal. No additional natural gas supply or infrastructure would be anticipated during construction.

The addition of five staff members would generate an additional 8.1 tons of solid waste annually, for a total solid waste generation of approximately 897 tons annually from Hyperion.

By the year 2020, it is estimated that biosolids generation at Hyperion would increase to approximately 916 wtpd, which represents an increase of 266 wtpd over existing production levels. In the year 2020, all biosolids generated at Hyperion would still be beneficially reused at Green Acres Farm in Kern County, Terminal Island, and composting at a regional facility or other technology. No biosolids would be disposed at landfills.

Water treatment at Hyperion uses natural gas and electricity for energy. The electricity recovered at Scattergood Generating Station from biogas produced at Hyperion is directly related to the rate of biosolids generation. The process is a closed loop and does not affect regional energy supplies. Electricity used for other processes at Hyperion is delivered by LADWP from regional supplies. A nominal amount of natural gas would continue to be used as a supplemental energy supply only in the biosolids handling process. This component would increase the current wastewater treatment capacity at Hyperion from 450 mgd to 500 mgd and biosolids handling capacity from 650 wtpd to 916 wtpd. The increase in overall treatment capacity would result in an increase in electricity consumption of approximately 67 million kWh per year.

Hyperion Biosolids Handling Improvements

Construction of this component would generate debris from demolition of the conventional digesters and handling facilities and from the parking lot, emergency storage area, administration building, and laboratory building where the proposed secondary clarifier would be located. Debris from demolition would be reused or recycled, with the remaining unrecyclable material disposed of in landfills, and soil from excavation would be exported for secondary use or landfilling. This component would generate an estimated 286,860 yd^3 of inert demolition debris and 438,750 yd^3 of excavated soil over the course of the construction period.

Similar to the expansion of Hyperion to 500 mgd, construction activities temporarily would use nominal additional amounts of electricity for potable emergency and/or construction generators. No additional natural gas supply or infrastructure would be anticipated during construction.

The addition of five staff members would generate an additional 8.1 tons of solid waste annually, for a total solid waste generation of approximately 897 tons annually from Hyperion.

Similar to the expansion of Hyperion to 500 mgd, biosolids generation is estimated to increase to approximately 916 wtpd, which would be beneficially reused and not disposed at landfills. Electricity recovered at Scattergood Generating Station from biogas produced at Hyperion still would occur and would not affect regional energy supplies. No additional electricity would be needed for the increase in biosolids processing. A nominal amount of natural gas would continue to be used as a supplemental energy supply in the biosolids handling process. The increase in overall treatment capacity would result in an increase in electricity consumption of approximately 52 million kWh per year.

Tillman Expansion to 100 mgd

Construction of this component would generate debris from demolition that would be reused or recycled, with the remaining unrecyclable material disposed of in landfills and soil from excavation would be exported for secondary use or landfilling. This component would generate an estimated 1,000 yd^3 of inert demolition debris and an estimated 86,859 yd^3 of excavated soil over the course of the construction period.

Construction activities temporarily would use additional amounts of electricity for potable emergency and/or construction generators. This additional amount of electricity needed for construction would be short term and considered nominal. No additional natural gas supply or infrastructure would be anticipated during construction.

The addition of six staff members would generate an additional 9.8 tons of solid waste annually, for a total solid waste generation of approximately 131 tons annually from Tillman.

Wastewater treatment at Tillman uses electricity for energy. Natural gas is used at Tillman for nontreatment processes only. This component would introduce new advanced treatment processes (MF, RO, and UV), which consume additional electricity. Increased treatment capacity from 64 to 100 mgd and the use of the new advanced treatment processes at Tillman would increase the electricity demand by approximately 175 million kWh per year. Because natural gas use at Tillman is not related to plant processes, an expansion of capacity would not increase natural gas consumption.

Tillman Expansion to 80 mgd
Construction of this component would be similar to the expansion of Tillman to 100 mgd. However, an estimated 1,000 yd^3 of inert demolition debris and 16,467 yd^3 of excavated soil over the course of the construction period would be generated.

Similar to the expansion of Tillman to 100 mgd, construction activities temporarily would use nominal additional amounts of electricity for potable emergency and/or construction generators. No additional natural gas supply or infrastructure would be anticipated during construction.

The addition of five staff members would generate an additional 8.1 tons of solid waste annually, for a total solid waste generation of approximately 129 tons annually from Tillman.

Similar to the expansion of Tillman to 100 mgd, wastewater treatment at Tillman uses electricity for energy. With increased treatment capacity from 64 to 80 mgd, and the use of the new advanced treatment processes, the electricity demand for Tillman would increase by approximately 130 million kWh per year. No increase in natural gas consumption would be anticipated.

Tillman Process Upgrades
Construction of this component would be similar to Tillman expansion to 100 mgd, but with an estimated 1,000 yd^3 of inert demolition debris. Construction of this component would not involve soil excavation.

Similar to the expansion of Tillman to 100 mgd, construction activities temporarily would use nominal additional amounts of electricity for potable emergency and/or construction generators. No additional natural gas supply or infrastructure would be anticipated during construction.

The addition of four staff members would generate an additional 6.5 tons of solid waste annually, for a total solid waste generation of approximately 128 tons annually from Tillman.

Wastewater treatment at Tillman uses electricity for energy. With an increase in advanced treatment processes, the electricity demand at Tillman would increase by approximately 94 million kWh per year. No increase in natural gas consumption would be anticipated.

Tillman Wastewater Storage
Construction of this component would generate soil that would be exported for secondary use or landfilling. This component would generate an estimated 530,833 yd^3 of excavated soil over the course of the construction period. This component would not require any demolition.

Construction activities temporarily would use additional amounts of electricity for potable emergency and/or construction generators. This additional amount of electricity needed for construction would be short term and considered nominal. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of this component would not change the number of employees at Tillman. No additional solid waste would be generated.

The addition of the wastewater storage tank would not result in increased treatment capacity at Tillman. However, the apparatus used to transfer water to and from the storage tank would require an increase in electricity demand by approximately 0.6 million kWh per year. No additional natural gas would be consumed.

LAG Expansion to 30 mgd

Construction of this component would generate soil that would be exported for secondary use or landfilling. This component would generate an estimated 92,671 yd^3 of excavated soil over the course of the construction period. LAG expansion would not involve demolition.

Construction activities temporarily would use additional amounts of electricity for potable emergency and/or construction generators. This additional amount of electricity needed for construction would be short term and considered nominal. No additional natural gas supply or infrastructure would be anticipated during construction.

The addition of three staff members would generate an additional 4.9 tons of solid waste annually, for a total solid waste generation of approximately 78 tons annually from LAG.

Increased treatment capacity from 15 to 30 mgd, and the use of the new advanced treatment processes at LAG would increase the electricity demand by approximately 64 million kWh per year. At LAG, only electrical demand would be increased because this facility does not use natural gas.

LAG Operational Storage

Construction of this component would generate soil that would be exported for secondary use or landfilling. This component would generate an estimated 41,923 yd^3 of excavated soil over the course of the construction period. No demolition would occur.

As with LAG Expansion to 30 mgd, construction activities temporarily would use nominal additional amounts of electricity for potable emergency and/or construction generators. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of this component would not result in a change in staffing at LAG.

The addition of the operational storage tank would not result in increased treatment capacity at LAG. However, the apparatus used to transfer water to and from the storage tank would require an increase in electricity demand by approximately 0.6 million kWh per year. LAG does not use natural gas.

NEIS II West Alignment

Construction of this component would generate soil that would be exported for secondary use or landfilling. This component would generate an estimated 700,568 yd^3 of excavated soil over the course of the construction period. This would include excavation to construct the shaft sites, primary tunnel support system, maintenance holes, and diversion structure pits.

Construction activities temporarily would use additional amounts of electricity for potable emergency and/or construction generators. This additional amount of electricity needed for construction would be short term and considered nominal. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of sewer infrastructure would not require the presence of regular staff, and as such would not directly generate additional solid waste.

Operation of this component would require the use of electricity at ATFs to power the fan/blower system that draws air out of the sewer. NEIS II West Alignment would require the ongoing operation of three ATFs; therefore, operation of NEIS II West Alignment would require a nominal increase in electricity demand. No natural gas consumption would be anticipated.

NEIS II East Alignment

Similar to NEIS II West Alignment, the NEIS II East Alignment includes excavation to construct the shaft sites, primary tunnel support system, maintenance holes, and diversion structure pits, which would generate soil that would be exported for secondary use or landfilling. This component would generate an estimated 651,024 yd^3 of excavated soil over the course of the construction period.

As with NEIS II West Alignment, construction activities temporarily would use nominal additional amounts of electricity for potable emergency and/or construction generators. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of this component would be similar to NEIS II West Alignment. NEIS II East Alignment would require the ongoing operation of four ATFs; therefore, implementation would require a nominal increase in electricity demand. No natural gas consumption would occur.

Similar to NEIS II West Alignment, the construction of GBIS South Alignment would include excavation to construct the shaft sites, primary tunnel-support system, maintenance holes, and diversion structure pits. Construction activities would generate an estimated 949,161 yd^3 of excavated soil over the course of the construction period.

As with NEIS II West Alignment, construction activities temporarily would use nominal additional amounts of electricity for potable emergency and/or construction generators. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of this component would be similar to NEIS II West Alignment. GBIS South Alignment would require the ongoing operation of two ATFs; therefore, implementation would require a nominal increase in electricity demand. No natural gas consumption would be anticipated.

GBIS North Alignment
Similar to NEIS II West Alignment, the construction of GBIS North Alignment would include excavation to construct the shaft sites, primary tunnel support system, maintenance holes, and diversion structure pits. Construction activities would generate an estimated 967,021 yd^3 of excavated soil over the course of the construction period.

As with NEIS II West Alignment, construction activities temporarily would use nominal additional amounts of electricity for potable emergency and/or construction generators. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation
Operation of this component would be similar to NEIS II West Alignment. GBIS North Alignment, similar to the GBIS South Alignment, would require the ongoing operation of two ATFs; therefore, implementation would require a nominal increase in electricity demand. No natural gas consumption would be anticipated.

Program-Level Impacts

VSLIS
Similar to the project-level wastewater pipelines (e.g., NEIS II West Alignment), the construction of VSLIS would include excavation to construct the shaft sites, primary tunnel support system, maintenance holes, and diversion structure pits. The specific alignment options for VSLIS have not been identified yet; however, the pipeline length and diameter have been estimated to be approximately 8.5 miles and 7 to 8 feet, respectively. Based on these parameters, a minimum of 83,552 yd^3 of soil would be displaced from installation of the pipeline and would be exported for secondary use or landfilling. Additional soil would be displaced if construction of this component involved trenching. In addition, this estimate does not include soil export related to the shaft sites and other accessory structures that have not yet been delineated.

Similar to NEIS II West Alignment, construction activities temporarily would use nominal additional amounts of electricity for potable emergency and/or construction generators. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of this component would be similar to NEIS II or GBIS Alignments, which would require the ongoing operation of one or more ATFs. Although the exact number and placement of air treatment facilities has not yet been determined, implementation of VSLIS would be expected to require only a nominal increase in electricity demand. No natural gas consumption would be anticipated.

Recycled Water
Construction of this component would generate soil that would be exported for secondary use or landfilling. For distribution of recycled water for irrigation and industrial users, construction would include pipelines, pumping stations, and storage tanks. Construction of the pipelines would require soil excavation. Pumping stations, if constructed belowground, would also require soil excavation. The amount of soil that would be excavated would depend on several factors (e.g., length and depth of pipelines, size of pumping stations and storage tanks, and placement above or belowground) that are not yet defined for this program-level component. This option ordinarily would not involve demolition of existing structures or facilities.

For distribution of recycled water for groundwater recharge, the pipeline from Tillman to the Hansen spreading grounds has been constructed. An additional pipeline from the Hansen spreading ground to the Pacoima Spreading Ground was analyzed and approved under the East Valley Water Reclamation Project Final EIR (LADWP, 1991). No demolition would be required for this option.

Construction activities temporarily would use additional amounts of electricity for potable emergency and/or construction generators. This additional amount of electricity needed for construction would be short term and considered nominal. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of this component would not require the presence of regular staff, and as such would not directly generate solid waste Infrastructure associated with this component, particularly the pumping stations, would require electricity to function. It is estimated that there would be a nominal increase in electricity demand (up to 0.4 million kWh per year). No natural gas consumption is anticipated.

Dry Weather Runoff – Smart Irrigation
Construction of smart irrigation devices would not generate soil or involve demolition that would be exported to a landfill; therefore, this component would not affect landfill capacity. In addition, construction of this component would not require notable amounts of electricity and would need no natural gas.

This component would install small control devices to automate irrigation systems on individual properties. Minimal increases in electricity would be expected. No natural gas consumption would occur.

Dry Weather Runoff – Low-Flow Diversions
Construction of this component would generate soil that would be exported for secondary use or landfilling. At each of the runoff diversions, a pump, diversion structures, and pipelines would be constructed and tied into the existing local wastewater collection system. The amount of soil that would be

excavated is based on several factors (e.g., length and depth of pipelines, and the size of pump stations and diversion structures) that have not been determined for this program-level component. An additional amount of electricity needed for construction would be short term and considered nominal. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of this component would not require additional staff and, as such, would not directly generate solid waste. Infrastructure associated with this component, particularly the pumps, would require electricity to function. Implementation of this component would result in a nominal increase in electricity demand due to operation of the pumps (up to 600,000 kWh per year).

Dry Weather Runoff – Urban Runoff Plants or Treatment Wetlands
Construction of this component would generate soil that would be exported for secondary use or landfilling. Construction of URPs would not involve any subsurface structures and, therefore, would not require soil excavation. However, construction of treatment wetlands would involve limited amounts of soil excavation, depending on the overall depth of each wetland. This component would not require any demolition.

Construction activities temporarily would use additional amounts of electricity; however, this additional amount of electricity would be short term and considered nominal. No natural gas consumption would occur during construction.

Operation of this component would not require additional staff and, as such, would not directly generate solid waste. Infrastructure associated with the URP portion of this component would require electricity to operate. Implementation of this component would consume up to 23 million kWh per year of electricity.

Wet Weather Runoff – Urban Runoff Plants
As with dry weather runoff URPs, wet weather runoff URPs would not involve any subsurface structures and, therefore, would not require soil excavation. This component would not require any demolition.

Construction activities temporarily would affect electrical supply; however, this additional amount of electricity would be short term and considered nominal. No natural gas consumption would occur during construction.

Operation of this component would not require additional staff and, as such, would not directly generate solid waste. Infrastructure associated with the URPs would require electricity to function. Implementation of this component would consume approximately 17 million kWh per year of electricity.

Wet Weather Runoff – Onsite Management
Construction of this component would generate soil that would be exported for secondary use or landfilling. Installation of onsite capture and percolation would require soil excavation to install the groundwater percolation units. Onsite storage also would require soil excavation if cisterns were to be installed belowground.

Construction activities temporarily would affect electrical supply; however, this additional amount of electricity would be short term and considered nominal. No natural gas consumption would occur during construction.

Operation of this component would not require additional staff and, as such, would not directly generate solid waste. The apparatus used to transfer water to and from the cisterns would require the use of approximately 3 million kWh per year of electricity.

Wet Weather Runoff – Non-Urban Regional Recharge
As described under recycled water distribution, this component would require soil excavation to install the new pipeline. This pipeline would be installed using either open trenching or tunneling through shaft sites. Currently, the pipeline length and diameter are assumed to be approximately 10 miles in length and 100 inches in diameter. Based on these parameters, approximately 17,926 yd^3 of soil would be displaced from the installation of the pipeline using a worst-case scenario (open-trench construction).

Construction activities temporarily would use additional amounts of electricity for potable emergency and/or construction generators. This additional amount of electricity needed for construction would be short term and considered nominal. No additional natural gas supply or infrastructure would be anticipated during construction.

Operation of this component would not require additional staff and, as such, would not directly generate solid waste. Recharge at spreading grounds would not require an increase in energy supply demand.

Summary of Component Impacts
Table 3.18-3 presents a summary of the component impacts to utilities and service systems relative to the two significance thresholds.

Table 3.18-3. Utilities and Service Systems Component Impact Summary Table *Integrated Resources Plan EIR*		
IRP Component	**Component Impacts**	
	Landfill	**Energy Supply**
Project-Level		
Hyperion Expansion to 500 mgd	Construction would generate 286,860 yd^3 demolition debris that would be recycled and/or transferred to landfills and 525,417 yd^3 of soil that would be exported for secondary use or landfilling Operations – Increased staffing would generate additional 8.1 tons solid waste annually	Operations – Increased treatment capacity would require increased electricity and natural gas supply
Hyperion Process Upgrades	Construction would generate 286,859 yd^3 demolition debris that would be recycled and/or transferred to landfills and 438,750 yd^3 of soil that would be exported for secondary use or landfilling Operations – Increased staffing would generate additional 8.1 tons solid waste annually	Operations – Increased treatment capacity would require increased electricity and natural gas supply
Tillman Expansion to 100 mgd	Construction would generate 86,859 yd^3 of soil and 1,000 yd^3 of inert debris that would be exported for secondary use or landfilling Operations – Increased staffing would generate additional 9.8 tons solid waste annually	Operations – Increased treatment capacity would require increased electricity supply
Tillman Expansion to 80 mgd	Construction would generate 16,467 yd^3 of soil and 1,000 yd^3 of inert debris that would be exported for secondary use or landfilling Operations – Increased staffing would generate additional 8.1 tons solid waste annually	Operations – Increased treatment capacity would require increased electricity supply
Tillman Process Upgrade	Operations – Increased staffing would generate additional 6.5 tons solid waste annually	Operations – Increased treatment capacity would require increased electricity supply
Tillman Wastewater Storage	Construction would generate 530,833 yd^3 of soil that would be exported for secondary use or landfilling	Operations – The apparatus used to transfer water to and from the storage tank would require a nominal amount of additional electricity
LAG Expansion to 30 mgd	Construction would generate 92,671 yd^3 of soil that would be exported for secondary use or landfilling Operations – Increased staffing would generate additional 4.9 tons solid waste annually	Operations – Increased treatment capacity would require increased electricity supply

Table 3.18-3. Utilities and Service Systems Component Impact Summary Table *Integrated Resources Plan EIR*		
	Component Impacts	
IRP Component	**Landfill**	**Energy Supply**
LAG Operational Storage	Construction would generate 41,923 yd^3 of soil that would be exported for secondary use or landfilling	Operations – the apparatus used to transfer water to and from the storage tank would require a nominal amount of additional electricity
NEIS II West Alignment	Construction would generate 700,568 yd^3 of soil that would be exported for secondary use or landfilling	Operations – Some infrastructure components would require energy supply
NEIS II East Alignment	Construction would generate 651,024 yd^3 of soil that would be exported for secondary use or landfilling	Operations – Some infrastructure components would require energy supply
GBIS South Alignment	Construction would generate 949,161 yd^3 of soil that would be exported for secondary use or landfilling	Operations – Some infrastructure components would require energy supply
GBIS North Alignment	Construction would generate 967,021 yd^3 of soil that would be exported for secondary use or landfilling	Operations – Some infrastructure components would require energy supply
Program-Level		
VSLIS	Construction would generate at least 83,552 yd^3 soil from installation of the pipeline plus soil excavated for drop shafts and other accessory structures that would be exported for secondary use or landfilling	Operations – Some infrastructure components would require energy supply
Recycled Water Distribution	Construction would generate soil that would be exported for secondary use or landfilling	Operations – Some infrastructure components would require energy supply
DWR – Smart Irrigation	Construction would not generate soil that would be exported for secondary use or landfilling	Operations -Minimal increases in energy demand
DWR – Low-Flow Diversions	Construction would generate soil that would be exported for secondary use or landfilling	Operations – Some infrastructure components would require energy supply
DWR – URP or Treatment Wetlands	Construction would generate soil that would be exported for secondary use or landfilling	Operations – Some infrastructure components for URPs would require energy supply
WWR – Onsite Management	Construction of belowground structures would generate soil that would be exported for secondary use or landfilling	Operations – the apparatus used to transfer water to and from the cisterns would require the use of approximately 3 million kwh per year of electricity
WWR – URP	Construction would not generate soil that would be exported for secondary use or landfilling	Operations – Some infrastructure components would require energy supply
WWR – Non-Urban Recharge	Construction would generate soil that would be exported for secondary use or landfilling	Construction – Construction would generate at least 17,926 yd^3 of soil that would be exported for secondary use or landfilling.

3.18.3.3 Alternative Impacts

Alternative 1

Alternative 1 components are described in Section 2.3.4.

Impact U-1

Potential primary and secondary impacts resulting from Alternative 1 to available landfill capacity are discussed below.

Primary Impacts. Construction debris would be generated during demolition only. Alternative 1 would generate approximately 286,860 yd^3 of inert demolition debris. The majority of this demolition debris (79.0 percent) would be from the sludge drying building at Hyperion (226,667 cubic yards of concrete). Demolition debris would be recycled at aggregate-base facilities, with residual debris disposed at inert landfills, the Bradley West or Sunshine Canyon Landfills. This amount of construction debris represents approximately 1 percent of the combined remaining volume of both landfills and could be accommodated at either facility. Less-than-significant impacts would be caused by construction debris.

The construction contractor would manage soil disposal. In general, contractors use soil brokers to identify locations where soil can be sold or exported for beneficial reuse to such operations as landscapers, agricultural operations, and projects that require soil fill (such as developments and landfill capping). Soil that cannot be sold or otherwise reused would be taken to landfills or appropriately permitted disposal sites as applicable. Excavated soil of an acceptable quality first would be used for other projects, agricultural operations, and possibly the capping of closed landfills. In addition, existing landfill operations depend on imported soil. The majority of excavated soil would fall into this category.

Because landfills are required to cover disposed solid waste at the end of each operating day, or at more frequent intervals, if necessary, to control vectors, fires, odors, blowing litter, and scavenging, landfills generally accept an unlimited supply of fair quality soil at no charge on a daily basis. Soil delivered to landfills in excess of daily landfill cover capacity generally is accepted and stockpiled for future use. The quantity of soil excavated estimated under Alternative 1 would differ slightly depending on which NEIS II and GBIS Alignment is chosen. This Alternative would generate approximately 2,783,688 yd^3 of soil for the Tillman Wastewater Storage component and at least approximately 2,336,443 yd^3 of soil for VSLIS. For the VSLIS component, additional soil would be excavated for the shafts and other accessory structures, the number, location, and size of which have not been determined. Additional soil excavation would be necessary for belowground program-level components.

A portion of the excavated soils could be contaminated, either from exposure to sewage or through historical land uses along the sewer alignments. Contaminated soil also can be accepted at some nonhazardous landfills dependent on the type and levels of contamination, and pursuant to procedures for acceptance. Refer to Section 3.10 – Hazards and Hazardous Materials for more detailed information on the handling of contaminated soil.

With several avenues for disposal of large volumes of clean and contaminated soil existing in the greater Los Angeles area, significant impacts to landfill capacity would not be anticipated from Alternative 1. In addition, soil excavation and disposal for Alternative 1 would not result in the need to open a new facility.

Alternative 1 would result in a total additional solid waste generation of 14.6 tons per year, or approximately 80 pounds per day (lb/day), related to increased staffing of nine individuals at Hyperion, Tillman, and LAG. This nominal increase in solid waste generation would not shorten the estimated remaining lifespan for either the Bradley West or Sunshine Canyon landfills. No soil excavation impacts would be anticipated from the operation of Alternative 1. Therefore, less-than-significant impacts associated with landfill capacity would be anticipated for the operation of Alternative 1.

Secondary Impacts. None of the components under Alternative 1 would result in impacts to landfill capacity, which in turn could result in secondary effects. Consequently, significant secondary impacts to landfill facilities would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

Impact U-2
Potential primary and secondary impacts resulting from Alternative 1 to energy supply infrastructure are discussed below.

Primary Impacts. Construction of Alternative 1 would use a minimal amount of additional electricity for emergency and/or construction generators. No natural gas consumption would occur. Alternative 1 would not require construction of new energy supply facilities or distribution infrastructure. Therefore, no impacts would be anticipated.

Alternative 1 has an estimated net electricity consumption increase of 188.0 million kWh per year by 2020, which would represent less than 1 percent of the current total annual electricity currently provided by LADWP. Assuming that this electricity increase is implemented evenly over a 14-year time frame, the increase could be approximately 0.06 percent of the current annual electricity consumption in the City of Los Angeles. This increase in demand would not be considered substantial enough that new electricity supply facilities would be necessary.

Alternative 1 would result in an increased demand for natural gas related to the estimated 41 percent increase in biosolids handling at Hyperion. A portion of the energy for this process would continue to be generated at Scattergood Generating Station. However, assuming that all the energy required for this increase in biosolids handling would come from natural gas, Alternative 1 would result in an increased demand of 3,272 therms. This slight increase in demand for natural gas as a portion of the energy needed for biosolids handling would not burden The Gas Company such that new natural gas supply facilities would be necessary.

Because Alternative 1 would not require the construction of new energy supply facilities, less-than-significant impacts on energy supply infrastructure would be anticipated.

Secondary Impacts. None of the components under Alternative 1 would result in impacts to energy supply infrastructure that could result in secondary effects. Consequently, significant secondary impacts to energy supply infrastructure would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

Alternative 2

Alternative 2 components are described in Section 2.3.5.

Impact U-1

Potential primary and secondary impacts resulting from Alternative 2 to available landfill capacity are discussed below.

Primary Impacts. Construction debris would be generated during demolition. Alternative 2 would generate approximately 286,859 yd^3 of inert demolition debris. As with Alternative 1, the majority of this demolition debris (79.0 percent) would be from the sludge drying building at Hyperion (226,667 yd^3 cubic yards of concrete). Similar to Alternative 1, demolition debris associate with Alternative 2 would be reused or recycled, with the remaining unrecyclable material disposed at either the Bradley West or Sunshine Canyon Landfills. This amount of construction debris represents approximately 1 percent of the combined remaining volume of both landfills. This amount of construction debris could be accommodated at either facility. Less-than-significant impacts are anticipated with respect to construction debris.

The excavation of soil would be similar to what was described under Alternative 1, except that Alternative 2 would generate soil excavation from construction of treatment wetlands. The management and disposal of soil excavated for this Alternative would be the same as described under Alternative 1.

Similar to Alternative 1, because several avenues for disposal of large volumes of clean and contaminated soil exist in the greater Los Angeles area, significant impacts to landfill capacity would not be anticipated. Soil excavation and disposal for Alternative 2 would not result in the need to open a new facility.

Alternative 2 would result in a total additional solid waste generation of 21.1 tons per year, or approximately 116 lb/day, related to increase staffing of

13 individuals at Hyperion, Tillman, and LAG. As with Alternative 1, this nominal increase in solid waste generation would not shorten the estimated lifespan for either the Bradley West or Sunshine Canyon Landfills. Less-than-significant impacts would be anticipated.

Secondary Impacts. Similar to Alternative 1, none of the components under Alternative 2 would result in impacts to landfill capacity that could result in secondary effects. Consequently, significant secondary impacts to landfill facilities would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

Impact U-2
Potential primary and secondary impacts resulting from Alternative 2 to energy supply infrastructure are discussed below.

Primary Impacts. Similar to Alternative 1, construction of Alternative 2 would use a minimal amount of additional electricity for emergency and/or construction generators. No natural gas consumption is anticipated. Alternative 2 would not require the construction of new energy supply facilities or distribution infrastructure. Therefore, no impacts would be anticipated.

Alternative 2 would have an estimated net electricity consumption increase of 290.3 million kWh per year, which represents just over 1 percent of the total annual electricity currently provided by LADWP. Assuming that this electricity increase is implemented evenly over a 14-year time frame (to 2020), the increase could be approximately 0.09 percent of the current annual electricity consumption in the City of Los Angeles. This increase in demand would not be considered substantial such that new electricity supply facilities would be necessary. Therefore, less-than-significant impacts would be anticipated with respect to electricity.

Alternative 2 would result in an increased demand for natural gas related to the increase in biosolids handling at Hyperion. As with Alternative 1, a portion of the energy for this process would continue to be generated at Scattergood Generating Station. If this increase would come from natural gas sources outside the plant, this Alternative would result in an increased demand of 3,272 therms. This slight increase in demand for natural gas as a portion of the energy needed for biosolids handling would not burden The Gas Company such that new natural gas supply facilities would be necessary.

Because this Alternative would not require the construction of new energy supply facilities, less-than-significant impacts would be anticipated.

Secondary Impacts. Similar to Alternative 1, none of the components under Alternative 2 would result in impacts to energy supply that could result in secondary effects. Consequently, significant secondary impacts to energy supply infrastructure would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

Alternative 3

Alternative 3 components are described in Section 2.3.6.

Impact U-1

Potential primary and secondary impacts resulting from Alternative 3 to available landfill capacity are discussed below.

Primary Impacts. Construction debris would be generated during demolition. Alternative 3 would generate approximately 286,859 yd^3 of inert demolition debris. The majority of this demolition debris (79.0 percent) would be from the sludge drying building at Hyperion (226,667 yd^3 of concrete). Similar to Alternative 1, demolition debris for Alternative 3 would be reused or recycled, with the remaining unrecyclable material disposed at the Bradley West or Sunshine Canyon landfill. This amount of construction debris would represent approximately 1 percent of the combined remaining volume of both landfills and could be accommodated at either facility. Less-than-significant impacts would be anticipated with respect to construction debris.

The excavation of soil would be similar to what was described under Alternative 1, except that Alternative 3 would not generate soil excavation from construction of onsite storage (cisterns) or the pipeline proposed for non-urban regional recharge. The management and disposal of soil excavated for this Alternative would be the same as described under Alternative 1.

Similar to Alternative 1, several avenues for disposal of large volumes of both clean and contaminated soil exist in the greater Los Angeles area; therefore, significant impacts to landfill capacity would not be anticipated. Soil excavation and disposal for Alternative 3 would not result in the need to open a new facility.

Alternative 3 would result in a total additional solid waste generation of 17.9 tons per year, or approximately 98 lb/day, related to increase staffing of 11 individuals at Hyperion, Tillman, and LAG. As with Alternative 1, this nominal increase in solid waste generation would not shorten the estimated lifespan for either the Bradley West or Sunshine Canyon Landfills.

Secondary Impacts. Similar to Alternative 1, none of the components under Alternative 3 would result in impacts to landfill capacity that could result in secondary effects. Consequently, significant secondary impacts to landfill facilities would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

Impact U-2
Potential primary and secondary impacts resulting from Alternative 3 to energy supply infrastructure are discussed below.

Primary Impacts. Similar to Alternative 1, construction of Alternative 3 would use a minimal amount of additional electricity for emergency and/or construction generators. No natural gas consumption would be anticipated. Construction of Alternative 3 would not require the construction of new energy supply facilities or distribution infrastructure. Therefore, no impacts would be anticipated.

Alternative 3 would have an estimated net electricity consumption increase of 250.7 million kWh per year, which represents approximately 1 percent of the total annual electricity now provided by LADWP. Assuming that this increase is implemented evenly over a 14-year time frame (to 2020), the increase would be approximately 0.08 percent of the annual electricity use in the City of Los Angeles. This increase in demand would not be considered substantial such that new electricity supply facilities would be necessary. Therefore, less-than-significant impacts would be anticipated with respect to electricity.

Similar to Alternative 1, Alternative 3 would result in an increased demand for natural gas related to the increase in biosolids handling at Hyperion. A portion of the energy for this process would continue to be generated at Scattergood Generating Station. If the increase would come from natural gas sources outside the plant, this Alternative would result in an increased demand of 3,272 therms. This slight increase in demand for natural gas as a portion of the energy needed for biosolids handling would not burden The Gas Company such that new natural gas supply facilities would be necessary.

Because this Alternative would not require the construction of new energy supply facilities, less-than-significant impacts would be anticipated.

Secondary Impacts. Similar to Alternative 1, none of the components under Alternative 3 would result in impacts to energy supply, which in turn could result in secondary effects. Consequently, significant secondary impacts to energy supply infrastructure would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

Alternative 4
Alternative 4 components are described in Section 2.3.7.

Impact U-1
Potential primary and secondary impacts resulting from Alternative 4 to available landfill capacity are discussed below.

Primary Impacts. Construction debris would be generated during demolition. Alternative 4 would generate approximately 286,859 yd^3 of inert demolition debris. Similar to Alternative 1, the majority of this demolition debris

(79.0 percent) would be from the sludge drying building at Hyperion (226,667 yd^3 of concrete). Demolition debris would be reused or recycled, with the remaining unrecyclable material disposed at either the Bradley West or Sunshine Canyon Landfills. This amount of construction debris represents approximately 1 percent of the combined remaining volume of both landfills and could be accommodated at either facility. Less-than-significant impacts are anticipated with respect to construction debris.

The excavation of soil would be similar to what was described under Alternative 1, except that Alternative 4 would, like under Alternative 2, generate soil excavation from construction of treatment wetlands. The management and disposal of soil excavated for this Alternative would be the same as described under Alternative 1.

Because several avenues for disposal of large volumes of both clean and contaminated soil exist in the greater Los Angeles area, significant impacts to landfill capacity would not be anticipated. Soil excavation and disposal for Alternative 4 would not result in the need to open a new facility.

Alternative 4 would result in a total additional solid waste generation of 17.9 tons per year, or approximately 98 lb/day, related to increase staffing of 11 individuals at Hyperion, Tillman, and LAG. As with Alternative 1, this nominal increase in solid waste generation would not shorten the estimated lifespan for either the Bradley West or Sunshine Canyon Landfills. Less-than-significant impacts would be anticipated.

Secondary Impacts. Similar to Alternative 1, none of the components under Alternative 4 would result in impacts to landfill capacity that could result in secondary effects. Consequently, significant secondary impacts to landfill facilities would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

Impact U-2
Potential primary and secondary cumulative impacts resulting from Alternative 4 to energy supply infrastructure are discussed below.

Primary Impacts. Similar to Alternative 1, construction of Alternative 4 would use a minimal amount of additional electricity for emergency and/or construction generators. No natural gas consumption would be anticipated. Construction of Alternative 4 would not require the construction of new energy supply facilities or distribution infrastructure. Therefore, no impacts would be anticipated.

Alternative 4 has an estimated net electricity consumption increase of 271.5 million kWh per year, which represents approximately 1 percent of the total annual electricity currently provided by LADWP. Assuming that this increase is implemented evenly over a 14-year period (to 2020), the annual increase in electricity use would be 0.08 percent of the existing annual electrical usage in the City of Los Angeles. This increase in demand would not be considered substantial such that new electricity supply facilities would be necessary. Therefore, less-than-significant impacts would be anticipated with respect to electricity.

Similar to Alternative 1, Alternative 4 would result in an increased demand for natural gas related to the increase in biosolids handling at Hyperion. Similar to Alternative 1, a portion of the energy for this process would continue to be generated at Scattergood Generating Station. If this increase would come from natural gas sources outside the plant, this Alternative would result in an increased demand of 3,272 therms. This slight increase in demand for natural gas as a portion of the energy needed for biosolids handling would not burden The Gas Company such that new natural gas supply facilities would be necessary.

Because this Alternative would not require the construction of new energy supply facilities, less-than-significant impacts would be anticipated.

Secondary Impacts. Similar to Alternative 1, none of the components under Alternative 4 would result in impacts to energy supply that could result in secondary effects. Consequently, significant secondary impacts to energy supply infrastructure would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

No Project Alternative

The No Project Alternative, for purposes of this EIR, is no action. Under this Alternative, integrated improvements to the wastewater treatment and collection system, recycled water system, or runoff system would not occur. However, individual wastewater, recycled water, or runoff projects likely would continue to be necessary to meet regulatory requirements and future demands, but such individual projects would be designed and constructed as the needs arise rather than being planned in a systemwide integrated manner. In this case, each individual project would be subject to its own environmental clearance in the future.

Impact U-1

Potential primary, secondary, and cumulative impacts resulting from the No Project Alternative to available landfill capacity are discussed below.

Primary Impacts. Under the No Project Alternative, the demand for solid waste would not increase. Biosolids would continue to be generated at Hyperion and sent to the Green Acres Farm in Kern County for land application under the existing contract. The planning, design, and implementation of wastewater, recycled water and runoff improvements would continue to be pursued on an individual project basis by the various City of Los Angeles departments and bureaus as demand requires and resources become available.

In the long term, however, various wastewater, recycled water, and runoff projects would be necessary to protect public health and safety or meet regulatory requirements, as defined in the objectives for the IRP (see Section 1.3). In the absence of an integrated resources planning process for the City of Los Angeles wastewater system, projects still would be implemented individually. The individual projects, however, would be constructed at unknown future dates and would not benefit from incremental consideration of various trigger mechanisms (discussed in Sections 2.4.1, 2.4.2, and 2.4.3) for maximizing efficiencies based on objectives of the IRP.

Secondary Impacts. The No Project Alternative is void of components that would result in physical changes to the environment that could have secondary impacts to landfill capacity. Consequently, significant secondary impacts to landfill capacity and facilities would not occur.

Mitigation. No mitigation is required.

Impacts after Mitigation. No impact is anticipated.

3.18.3.4 Cumulative Impacts

Construction of any of the Proposed Alternatives in combination with the related projects and plans would result in the generation and disposal of construction debris and excavated soil. Many landfills in the area have ample capacity to accommodate the portion of construction debris that is not recycled or otherwise reused. Some of these landfills also accept excess soil for use as landfill cell cover. Soil taken to landfills for use as cover generally is not considered to reduce landfill capacity because it is required for landfill management operations. Although the Alternatives and the related projects would generate an incremental amount of residual construction debris and soil that could be disposed in landfills, the incremental amount for any of the Proposed Alternatives in combination with the related projects is not considered substantial, given that the residual debris and soil would constitute a small percentage of the daily waste stream and that various landfills accept soil for capping purposes. Consequently, the Proposed Alternatives would not result in significant cumulative construction-related impacts to landfills. Construction of the Alternatives would not require additional energy supplies; therefore, no cumulative impacts are anticipated.

Operation of the Alternatives and the related projects and plans would result in the generation and disposal of relatively small amounts of solid waste. The infrastructure-related projects and plans, such as the Sun Valley Watershed Management Plan, the Wastewater Capital Improvement Program, and the recycled water distribution pipelines would generate minimal amounts of solid waste during operation. The City of Los Angeles currently generates approximately 9,600 tons per day of solid waste. Further development under the General Plan would be expected to incrementally increase the amount over time; whereas, the solid waste reduction activities and goals of the City of Los Angeles (see Section 3.18.3.1 above) would tend to reduce the total amount of cumulative solid waste generated in the future. The incremental additional of solid waste from the operation of the Alternatives is not considered cumulatively considerable because the City of Los Angeles is implementing solid waste reduction goals that exceed state requirements and that substantially lessen the cumulative amount of solid waste generated in the City of Los Angeles. Consequently, Alternative 1 would not result in significant cumulative operational impacts to landfills.

In addition, the Los Angeles region is expected to increase in population over the next decade, consistent with the SCAG projections and the General Plan. LADWP and The Gas Company have undertaken projection and planning efforts to accommodate the anticipated energy needs. As an example, LADWP has established the goal of providing 20 percent of its retail electricity supply from renewable power sources by 2017 (LADWP, 2005). Any of the Project Alternatives, in conjunction with the infrastructure-related plans and projects, would result in incremental increases in annual electricity and natural gas usage over the next 14 years, but the annual increment is not expected to be substantial enough to require the construction of new electricity or natural gas facilities. Consequently, implementation of any of the Proposed Alternatives would not result in significant cumulative operational impacts to utilities.