

Section 3.15

Utilities

3.15.1 Introduction

This section addresses the proposed project's impacts on utilities (potable water, wastewater, storm drains, solid waste, electricity, natural gas, and telecommunications). The section identifies the methodology, regulatory framework, and thresholds used to determine whether the proposed project would result in a significant impact associated with utilities, provides a description of existing utilities serving the project site, and provides an analysis of the proposed project's impacts associated with utilities and energy conservation.

Comments in response to the NOP related to utilities and energy conservation were received from the following agencies and individuals:

- Department of Toxic Substances Control – commented that a National Pollutant Discharge Elimination System (NPDES) Permit may be required if discharge of wastewater to a storm drain would occur.
- The City of San Diego Planning Department – commented to include stormwater when considering infrastructure improvements and to address any impacts of stormwater infrastructure, including capacity, operations, and maintenance.
- The California Coastal Commission – commented that new development should minimize energy consumption.

Additionally, comments were received from the City of San Diego Planning Department and members of the public during the scoping meeting supporting a consistency analysis with the City of San Diego's Climate Action Plan (CAP).

All written and oral comments received during the NOP process are provided in Appendix R-A. Comments received specific to utilities associated with the proposed project are addressed within this section of the EIR. Impacts related to stormwater runoff are also addressed in Section 3.10, Hydrology and Water Quality. Comments related to energy conservation are addressed herein, and additional analysis relative to reduction of greenhouse gas (GHG) emissions and consistency with policies and plans to reduce GHG emissions, including the City's CAP, is provided in Section 3.3, Greenhouse Gases and Climate Change.

3.15.2 General Approach and Methodology

The utilities analysis addresses construction and operational impacts of improvements to the existing network of utilities serving the project site and whether there would be any associated physical impacts that have not already been addressed as part of the proposed project.

Additionally, the analysis evaluates whether facilities that would provide services to the proposed project would have sufficient resources and/or capacity to accommodate project-related increase

in utility demand. The utilities analysis is based on the anticipated increase in utility demand associated with the proposed project. Electricity and natural gas demand are dependent primarily on building area. As such, the demand is calculated by applying a generation/demand factor for the new square footage to be constructed, and subtracting demand associated with the existing square footage to be demolished and replaced under the proposed project. To account for the various uses that would be demolished/constructed under the proposed project, this analysis uses representative demand factors used are for similar types of uses as identified in the California Emissions Estimator Model (CalEEMod) User's Guide Appendix D Default Data Tables. Specifically, this analysis applied:

- The CalEEMod demand factor for “general office building” to the proposed new Airport administration building square footage, because the uses are similar;
- The CalEEMod demand factor for “enclosed parking structure” for the proposed T1 Parking Structure square footage, because the uses are similar;
- The CalEEMod demand factor for “regional shopping center” (defined as an integrated group of commercial establishments) for the proposed commercial development opportunity square footage because the most energy intensive potential use of this space would likely be restaurants and retail uses;
- The CalEEMod demand factor for “office park” (identified as a mixed development with general offices and support services, such as restaurants and service stations, that should be used if details on individual buildings are not available) for the proposed new terminal building square footage, because a detailed breakdown on square footage of individual spaces within the terminal buildings is not available, but the proposed new terminal buildings would include a mix of uses such as holdrooms, ticketing areas, security and baggage facilities, restrooms, concessions, and offices that would be similar or less energy intensive than uses associated with “office park.”

Based on the demand factors, the net difference between the demand associated with the new square footage and demolished square footage to be replaced by new construction is the projected change in electricity and natural gas demand. The projected change in electricity and natural gas demand is then evaluated against the anticipated capacity of the service providers based on the existing and planned capacities of each utility, as identified by utility providers, to determine if the proposed project demand can be accommodated.

In order to determine if sufficient potable water supply would be available to serve the proposed project, a Water Supply Assessment (WSA) (Appendix R-I) has been performed by the City of San Diego Public Utilities Department (PUD) to determine the extent to which the project would increase water demand and whether sufficient water supplies are available from existing entitlements and resources.

In the case of wastewater and storm drains, the analysis evaluates the capacity of local wastewater infrastructure to accommodate potential increases in wastewater requirements and potential changes in stormwater runoff.

Regarding solid waste, the amount of solid waste anticipated to require disposal is estimated based on the CalEEMod factors described above, as well as an assessment of construction and demolition waste. This projected demand is evaluated in light of the proposed project's anticipated recycling and reuse requirements and future permitted capacity of landfills serving SDIA.

The energy analysis is based on projected demand associated with electricity, natural gas, water, and fuel use, as well as an evaluation of the proposed project's elements relative to energy conservation through the wise and efficient use of energy as identified in Appendix F of the State CEQA Guidelines.

3.15.3 Regulatory Framework

3.15.3.1 Federal

Clean Water Act

At the federal level, the primary regulations relating to water services are associated with water quality. These laws and regulations include the Clean Water Act (CWA), the goal of which is pollution prevention (see Section 3.10, Hydrology and Water Quality), and the Safe Drinking Water Act (SDWA). The latter, enacted by Congress in 1974 and amended in 1986 and 1996, requires protection of drinking water and its source lakes, reservoirs, springs, and groundwater wells. The SDWA divides the responsibility of ensuring safe drinking water among the U.S. Environmental Protection Agency (USEPA), states, and local service providers.

FAA Modernization and Reform Act of 2012

The FAA Modernization and Reform Act of 2012 amended United States Code (U.S.C.) Title 49 - Transportation. The amendments changed the Airport Improvement Program (AIP) to, among other things, expand the definition of airport planning to include plans for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit. Additionally, the Act now requires airports that have or plan to prepare a master plan, and that receive AIP funding for an eligible project, to ensure that the new or updated master plan addresses issues relating to solid waste recycling at the airport. This includes: (1) the feasibility of solid waste recycling at the airport; (2) minimizing the generation of solid waste at the airport; (3) operation and maintenance requirements; (4) review of waste management contracts; and (5) the potential for cost savings or the generation of revenue.

Federal Fuel Efficiency Standards

Federal Corporate Average Fuel Economy (CAFE) standards were adopted for passenger cars, light-duty trucks, and medium-duty passenger vehicles for model years 2012 through 2016 in 2010. The standards surpass the prior CAFE standards and require an average fuel economy standard of 35.5 miles per gallon (mpg) and 250 grams of carbon dioxide (CO₂) per mile by model year 2016, based

on USEPA calculation methods. In August 2012, standards were adopted for model year 2017 through 2025. By 2025, vehicles are required to achieve 54.5 mpg and 163 grams of CO₂ per mile.¹

The USEPA and the National Highway Traffic Safety Administration (NHTSA) established Heavy-Duty National Program fuel efficiency standards for medium- and heavy-duty trucks in 2011. The Phase 1 heavy-duty truck standards apply to combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles for model years 2014 through 2018 and result in a reduction in fuel consumption from 6 to 23 percent over the 2010 baseline, depending on the vehicle type.² The Phase 2 heavy-duty truck standards adopted in 2016 cover model years 2021 through 2027 and require the phase-in of a 5 to 25 percent reduction in fuel consumption over the 2017 baseline, depending on the compliance year and vehicle type.³

3.15.3.2 State

California Water Code Sections 10910-10915

When a city or county is the CEQA lead agency for a project meeting certain criteria (e.g., proposes development of more than 500 dwelling units), California Water Code Sections 10910 through 10915 require that the relevant water service provider – usually a water agency or district – determine whether the water demands of the proposed project were accounted for in the most recent urban water management plan (UWMP). If the project's water demand was *not* accounted for in the UWMP, the water service provider must prepare a Water Supply Assessment (WSA) demonstrating there are sufficient supplies to meet the anticipated needs of the project. If the provider determines that potable water supplies are, or will be, insufficient, the project applicant must submit plans for acquiring additional potable water supplies. Additionally, the city or county serving as Lead Agency must include the WSA and other pertinent information in the EIR or other CEQA document prepared in support of the project (e.g., Mitigated Negative Declaration). With respect to the proposed project, the CEQA lead agency is not a county or city but the SDCRAA. For this reason, Water Code Sections 10190 through 10915 do not apply. Nevertheless, SDCRAA requested that PUD prepare a WSA for the proposed project. The WSA is provided in Appendix R-I and summarized in Section 3.15.6.2.2.

California Plumbing Code

The California Plumbing Code is codified in Title 24, California Code of Regulations, Part 5. The Plumbing Code contains regulations including, but not limited to, plumbing materials, fixtures, water heaters, water supply and distribution, ventilation, and drainage. More specifically, Part 5,

¹ U.S. Environmental Protection Agency. Regulatory Announcement - EPA and NHTSA Set Standards to Reduce Greenhouse Gases and Improve Fuel Economy for Model Years 2017-2025 Cars and Light Trucks. August 2012. Available: <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100EZ7C.PDF?Dockey=P100EZ7C.PDF>.

² U.S. Environmental Protection Agency. Regulatory Announcement - EPA and NHTSA Adopt First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles. August 2011.

³ U.S. Environmental Protection Agency. Federal Register/Vol. 81, No. 206/Tuesday, Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles - Phase 2, October 25, 2016. Available: <https://www.govinfo.gov/content/pkg/FR-2016-10-25/pdf/2016-21203.pdf>.

Chapter 4 contains provisions requiring the installation of low-flow fixtures and toilets (Senate Bill 407 [2009] Civil Code Sections 1101.1 et seq.).

California Solid Waste Reuse and Recycling Access Act

The California Solid Waste Reuse and Recycling Access Act of 1991 (Assembly Bill [AB] 1327 [Public Resources Code Chapter 18 Section 42900]) required each jurisdiction to adopt an ordinance by September 1, 1994, requiring any "development project" for which an application for a building permit is submitted to provide an adequate storage area for collection and removal of recyclable materials. These regulations govern the transfer, receipt, storage, and loading of recyclable materials at the project site.

California Public Resources Code Section 40000

The California Integrated Waste Management Act of 1989 (PRC Section 40000) requires the implementation of solid waste management programs. This includes requiring each city or county to divert solid waste from landfill disposal through source reduction, recycling, and composting, and achieve a 50 percent diversion.

The law also 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 the required solid waste disposal reduction goal. Additionally, each city and county is required to prepare a Household Hazardous Waste Element (HHWE) and Nondisposal Facility Element (NDFE), and each county is required to prepare a Countywide Siting Element and Summary Plan. The SRREs, HHWEs, NDFEs, the Siting Element, and Summary Plan constitute the Countywide Integrated Waste Management Plan (CIWMP).

The California Integrated Waste Management Act was amended in 2012 to require that all businesses and public entities that generate four cubic yards or more of solid waste per week have a recycling program and to set a statewide goal for 75 percent reduction of solid waste disposal by 2020.

California Code of Regulations Title 24, Part 6

The State Building Energy Efficiency Standards (CCR Title 24 Part 6) govern energy consumption associated with new buildings in California. The efficiency standards apply to new construction of residential and non-residential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. The building efficiency standards are enforced through the local building permit process. Local government agencies may adopt and enforce energy standards for new buildings provided these standards meet or exceed those provided in Title 24 guidelines.

California Code of Regulations, Title 24, Part 11

The California Green Building Standards Code (CALGreen) (CCR Title 24 Part 11) is a statewide mandatory green building code adopted in 2010. CALGreen requires new standards in materials reuse, locally sourced materials, water/energy efficiency, and indoor air quality. CALGreen identifies mandatory building measures and voluntary measures that may be incorporated into the design of buildings. Relative to energy usage, CALGreen contains requirements for cool roofs,

exterior lighting, bicycle parking, and electric vehicle charging, as well as reference to the standards of the State Building Energy Efficiency Standards. Mandatory requirements under CALGreen also include diversion of 65 percent of non-hazardous construction waste.

California Energy Commission/California Public Utilities Commission Planning

The existing regulatory requirements and planning requirements set by the California Public Utilities Commission (CPUC) and the California Energy Commission (CEC) are constantly assessing population growth, electricity demand, and reliability. The CEC is tasked with conducting assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety (PRC Section 25301(a)).

California Renewable Portfolio Standard

California implements the Renewable Portfolio Standard (Public Utilities Code Section 399.11 et seq.) which requires a portion of electricity retail sales be served by renewable energy. With the passage of Senate Bill 350 in October 2015, retail sellers and publicly-owned utilities are required to procure 50 percent of their electricity from eligible renewable energy resources by 2030. In 2017, the electricity provider for the proposed project, San Diego Gas and Electric (SDG&E), procured approximately 45 percent of its electricity from renewable energy-related projects, including solar and wind generated electricity.⁴ This 45 percent is greater than the state of California overall, which in 2017 procured 29 percent of energy from renewable sources. In 2017, approximately 21,157.25 million kilowatt hours (kWh) was used in the SDG&E planning area and in 2016, this was slightly less at approximately 21,150.49 million kWh.⁵ The planning area includes SDG&E retail customers and customers served by various energy service providers using the SDG&E distribution system to deliver electricity to end users.

Assembly Bill (AB) 1826

AB 1826 requires businesses (including airports) that generate a specified amount of organic waste⁶ per week to arrange for recycling services for organic waste recycling. The requirements are phased over time based on the amount and type of organics or waste a business produces on a weekly basis. As of January 1, 2017, businesses that generate four cubic yards of organic waste per week were required to arrange for organic waste recycling services. As of January 1, 2019, businesses generating four cubic-yards per week of solid waste must arrange for food waste recycling services. Airports can also require airlines to handle the waste that is removed from the aircraft in California in compliance with the airport's requirements for solid waste handling

⁴ San Diego Gas and Electric. About Our Initiatives webpage. 2018. Available: <https://www.sdge.com/more-information/environment/about-our-initiatives>.

⁵ California Energy Commission. Electricity Consumption by Planning Area, San Diego Gas and Electric. 2018 and 2017. Available: <http://ecdms.energy.ca.gov/elecbyplan.aspx>.

⁶ Organic waste includes: food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed with food waste.

(including organic waste recycling), provided there is no conflict with federal requirements for solid waste handling (e.g., the U.S. Department of Agriculture requires that food waste from international flights be incinerated or sterilized).⁷

3.15.3.3 Local

San Diego Municipal Code – Water Conservation

Section 147.04 of the San Diego Municipal Code requires all buildings, prior to a change in ownership, to be certified as having water-conserving plumbing fixtures in place. All residential, commercial, and industrial water customers who receive water from the City of San Diego Water Department are affected by this ordinance.

SDCRAA Policies⁸

SDCRAA Policy 8.31 – Sustainability⁹

Policy 8.31 establishes SDCRAA's commitment to be a sustainable organization and a recognized leader for best sustainable practices in the San Diego region and the aviation industry. The policy endorses three pillars of sustainability (environmental, social, and economic) to guide and implement the Authority's practices. Further, SDCRAA commits to the following sustainable practices:

- (1) Affirm commitment to regulatory compliance, continuous improvement, accountability and transparency in environmental, social and economic performance through the development of formal sustainability reports on a regular basis;
- (2) Actively participate in local and regional sustainability partnerships and strongly encourage and promote sustainable practices both in the aviation industry and the region;
- (3) Proactively address greenhouse gas emissions and the impacts of climate change through Airport operations, planning and development decisions;
- (4) Review and evaluate all new programs and projects in terms of addressing all three pillars of sustainability, in a balanced, holistic and measurable approach;
- (5) Analyze the life cycle operating costs and impacts of the Authority's facilities, operations and services, using a Total Cost of Ownership approach to determine project feasibility and economic sustainability;

⁷ CalRecycle. Mandatory Commercial Organics Recycling (MORe) Frequently Asked Questions webpage. April 5, 2018. Available: <http://www.calrecycle.ca.gov/recycle/commercial/organics/faq.htm>.

⁸ San Diego County Regional Airport Authority. San Diego County Regional Airport Authority Policies. Section 8.31 – Sustainability. Amended January 3, 2019. Available: https://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=12228&Command=Core_Download&language=en-US&PortalId=0&TabId=499.

⁹ San Diego County Regional Airport Authority. San Diego County Regional Airport Authority Policies. Section 8.31 – Sustainability. Amended January 3, 2019. Available: https://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=12228&Command=Core_Download&language=en-US&PortalId=0&TabId=499.

- (6) Adopt the standards set forth by the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) and/or other green design and construction standards as guiding criteria for achieving sustainable design in the development and remodeling of Airport facilities;
- (7) Apply the three pillars of sustainability, LEED, and other green construction criteria as a significant factor when reviewing tenant development/redevelopment projects and provide incentives to encourage sustainable design features;
- (8) Develop language within all new leases, agreements and contracts that supports the Authority's sustainability initiatives;
- (9) Require the Authority's lessees and contractors to comply with the terms and conditions of their agreements pertaining to sustainability;
- (10) Establish a work environment that maximizes the Authority's employee assets and stimulates an atmosphere of innovation, productivity, pride, and a personal commitment to sustainability; and
- (11) Take a leadership role in sustainability initiatives that strengthen the social well-being and community relationships with visitors, Airport stakeholders and the public the Authority serves.

*SDCRAA Policy 8.91 – Water Conservation*¹⁰

Policy 8.91 encourages the conservation of water use in SDCRAA operations, and among tenants and users of SDCRAA facilities with emphasis on: irrigation practices; drought resistant and/or water-saving landscaping design; installation of low-flow sanitation devices in new or remodeled structures; educational awareness programs for landscaping crews to increase sensitivity to water conservation measures; and other programs suited to airport operations.

Memorandum of Understanding with the California Attorney General

A Memorandum of Understanding (MOU) between the California Attorney General and SCDRAA¹¹ was signed in May 2008 in recognition of a mutual commitment to reduce GHG emissions. The MOU identifies specific measures to be implemented by SDCRAA beginning in 2010 to limit the GHG emissions generated by the operation of the Airport. The actions listed in the MOU address:

- Reduction in Aircraft On-the-Ground Energy Usage
- Reduction of Landside Energy Usage
- Use of Green Materials and Sustainable Design

¹⁰ San Diego County Regional Airport Authority. San Diego County Regional Airport Authority Policies. Section 8.91 – Sustainability. Amended October 4, 2018. Available: https://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=12228&Command=Core_Download&language=en-US&PortalId=0&TabId=499.

¹¹ Memorandum of Understanding Between the Attorney General of the State of California and the San Diego County Regional Airport Authority Regarding the San Diego International Airport Master Plan. 2008.

- Use of Green Construction Methods and Equipment
- Coordination and Encouragement of Tenants to Address GHG Emissions

3.15.4 Environmental Setting

This section presents a summary of utility providers and facilities at the project site and surrounding area, as well as conservation programs and policies currently being implemented.

3.15.4.1 Potable Water

The City of San Diego's PUD provides water and wastewater services to SDIA. Approximately 90 percent of the San Diego region's potable water is imported, while 10 percent is supplied from water produced locally through a system of reservoirs and pipelines. The San Diego County Water Authority (SDCWA or Water Authority) is the main wholesale supplier of water in San Diego County. PUD purchases water from SDCWA and delivers it throughout the City.

SDCWA imports water from the Metropolitan Water District of Southern California (MWD), which serves the greater southern California area. MWD's primary sources of water are the State Water Project (SWP) and the Colorado River. A 242-mile-long aqueduct brings Colorado River water from Lake Havasu to southern California. The City also receives water originating in northern California from the SWP. SWP water is initially captured in reservoirs north of Sacramento and released through natural rivers and streams into the Sacramento-San Joaquin Delta. The water is then delivered to southern California through a 444-mile-long aqueduct. MWD blends Colorado River and SWP water at a facility in Riverside County, and then transfers it to San Diego water treatment plants.

MWD and SDCWA have developed water supply plans to improve reliability and reduce dependence upon existing imported supplies. MWD's Regional Urban Water Management Plan (RUWMP) and Integrated Water Resources Plan, as well as the SDCWA's 2015 Urban Water Management Plan (UWMP) and annual water supply report, include water infrastructure projects that meet long-term supply needs through securing water from the State Water Project, Colorado River, local water supply development, and recycled water.

According to the City of San Diego Urban Water Management Plan, water demand in PUD's service area decreased by six percent between 2010 and 2015 due to conservation efforts, from 188,860 acre feet per year (AFY) to 177,341 AFY.¹² By the year 2035, water demand is projected to increase to 247,287 AFY, followed by a slight decline to 246,801 AFY in 2040. The decline is associated with improved conservation among single-family and multifamily residences.¹³

In an effort to reduce reliance on imported water and improve supply reliability, the PUD developed a Long-Range Water Resources Plan (LRWRP) in 2012. The LRWRP identifies

¹² City of San Diego Public Utilities. 2015 City of San Diego Urban Water Management Plan. June 2016.

¹³ City of San Diego Public Utilities. 2015 City of San Diego Urban Water Management Plan. June 2016.

conservation strategies that include expanding water conservation, potable reuse, development of the groundwater supply, and rainwater harvesting.¹⁴

The PUD operates and maintains a complex water treatment and distribution system that services approximately 1.3 million people over 200 square miles in area. This includes three water treatment plants with a combined total treated capacity of 378 million gallons per day (MGD). The Miramar Water Treatment Plant serves the northern portion of the City of San Diego and has a capacity of 144 MGD. The Alvarado Water Treatment Plant serves the central portion of the City (including the project site and vicinity) and has a capacity of 200 MGD. The Otay Water Treatment Plant serves the southern portion of the City and has a current capacity of 34 MGD.¹⁵

The PUD also maintains and operates over 3,300 miles of pipes, 49 water pump plants, and more than 200 million gallons of potable water storage capacity in 32 standpipes, elevated tanks, and concrete and steel reservoirs. There are approximately 280,000 metered service connections within the service area. The PUD also sells water to a number of other water agencies and maintains emergency connections to these adjacent jurisdictions/districts in the event of water shortages.

PUD also offers recycled water for irrigation, manufacturing, and other non-potable purposes in the northern and southern portions of the service area, but not within the project area. The North City Water Reclamation Plant (NCWRP) has the capability to treat 30 MGD of wastewater and the South Bay Water Reclamation Plant (SBWRP) has the capability to treat 15 MGD of wastewater for non-potable reuse.¹⁶

In November 2014, the San Diego City Council approved the Pure Water San Diego Program, the City's phased, multi-year program that will provide one-third of San Diego's water supply locally by 2035. The Pure Water San Diego Program will use proven water purification technology to clean recycled water to produce safe, high-quality water. Phase 1 of the Program includes construction of the North City Pure Water Facility, which will produce 30 MGD of purified water, new pump stations and pipelines, and upgrades to existing facilities. The new North City Pure Water Facility will be constructed on a city-owned parcel east of Interstate 805 and north of Eastgate Mall – across from the existing North City Water Reclamation Plant. The purified water produced there will be delivered to Miramar Reservoir and blend with the City's imported and local water sources before being treated again at the Miramar Drinking Water Treatment Plant and distributed to customers. These projects will deliver 30 MGD of a safe, reliable, and sustainable water supply to San Diegans starting in 2023.¹⁷

The water distribution lines at SDIA, which branch from water transmission lines along Harbor Drive, typically range in diameter from 6 to 16 inches and provide service to the terminals, aprons, and support facilities along Harbor Drive. Two 16-inch water transmission mains run parallel along North Harbor Drive—one from Laurel Street to Nimitz Boulevard, and the other on the south

¹⁴ City of San Diego Public Utilities. 2015 City of San Diego Urban Water Management Plan. June 2016.

¹⁵ City of San Diego Public Utilities. 2015 City of San Diego Urban Water Management Plan. June 2016.

¹⁶ City of San Diego. Recycled Water Webpage. 2018. Available: <https://www.sandiego.gov/water/recycled>.

¹⁷ City of San Diego, Public Utilities Department. E-Update, "First Phase of Pure Water San Diego Moves Closer to Construction." November 2018. Available: https://www.sandiego.gov/sites/default/files/eupdate_-_november_2018.pdf.

side portion of Harbor Drive along the entrance of T1 to Nimitz Boulevard. Both water mains merge into a single main before crossing the bridge at the Navy Lagoon.

There are a series of other water transmission mains, such as: a 16-inch main along Nimitz Boulevard from Harbor Drive to Rosecrans Street, a 16-inch main along Rosecrans Street from Nimitz Boulevard to Barnett Avenue, and a 16-inch main along Rosecrans Street from Barnett Avenue to Sports Arena Boulevard. A 12-inch main along Barnett Avenue runs east from its intersection with Rosecrans Street to connect with an 18-inch water main in Midway Drive (parallel to Pacific Highway). This 18-inch main cuts across Pacific Highway to connect to Kurtz Street and then continues southeast to intersect a 24-inch main southeast of Vine Street. The 24-inch main connects to a 12-inch main in Pacific Highway. This 12-inch main runs southeast to Laurel Street, where it intersects with 24-inch and 20-inch water mains at Laurel Street. Both a 12-inch and 20-inch main continue southeasterly in Pacific Highway toward Downtown San Diego. The 24-inch main in Laurel Street runs southwest to join the 16-inch main in Harbor Drive. This completes the closed loop water main system on the Airport property.

Surrounding the fuel storage tank farm at SDIA is a 10-inch fire service water line connected along the north side of the Runway 9-27 to a 16-inch ductile iron fire service. This 16-inch fire service line extends along the access road parallel to Washington Street, where it joins a 12-inch main near the intersection of Washington Street and Pacific Highway.

3.15.4.1.1 Water Supply Assessment

As explained in Section 3.15.3.2, while not required for the proposed project, a WSA was prepared for the proposed project in August 2019 by the PUD (Appendix R-I). The conclusions of the WSA are provided in Section 3.15.6.2.2 below.

3.15.4.1.2 SDIA Water Use and Water Conservation

As shown in Table 3.15-1 below, in 2017, the amount of water drawn from the municipal supply for use at SDIA and the average amount of water withdrawal per passenger decreased in 2017 as compared to 2016. This reverses the trend of annual water use increases as shown in Table 3.15-1. The reduction in water use can be associated with various factors, including increased use of captured storm water and condensate water at SDIA for non-potable uses; relatively mild summer weather conditions along the California coastal areas¹⁸ that reduced the need for landscape irrigation and use of water for the Central Utility Plant (CUP) cooling towers as compared to hotter on average summers; and reduced landscape installation compared to 2016 which involved the completion of the Rental Car Center with over 5 acres of landscaped bioswales that required irrigation for landscape installation and establishment.) Water drawn from the municipal supply for use at SDIA from 2011 to 2017 is shown in Table 3.15-1 below.

¹⁸ Swain, Daniel. The California Weather Blog brought to You by Weather West: After mid-August reprieve, yet another prolonged California Heatwave. August 25, 2017. Available: <https://weatherwest.com/archives/5826>.

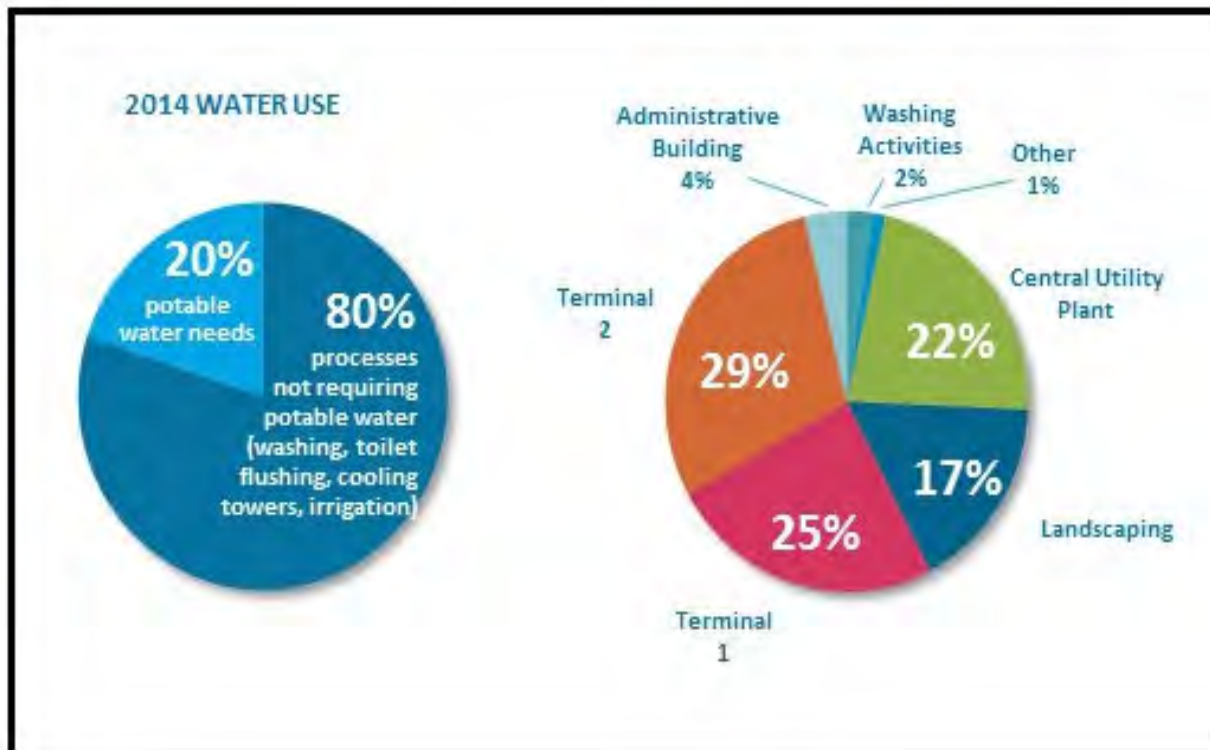
Table 3.15-1: Water Drawn From the Municipal Supply

	CY 2011	CY 2012	CY 2013	CY 2014	CY 2015	CY 2016	CY 2017
Total Water Withdrawal in gallons (acre feet)	60,385,292 (185)	64,867,308 (199)	70,433,924 (216)	78,052,304 (240)	80,616,448 (247)	89,864,720 (276)	82,351,808 (253)
Passengers	16,891,690	17,250,265	17,710,241	18,758,751	20,081,258	20,725,801	22,156,493
Water Withdrawal per Passenger	3.57	3.76	3.98	4.16	4.01	4.34	3.72

Source: San Diego County Regional Airport Authority. Sustainability Report 2016. Performance Tables and Charts. 2017; San Diego County Regional Airport Authority. Sustainability Report 2017. Performance Tables and Charts. 2018. Available: <http://sustain.san.org/tables/>.

Note: Values based on calendar year (CY) – January 1 – December 31.

As shown in Figure 3.15-1, water use is higher for processes requiring use of non-potable water (i.e., the cooling towers at the CUP, washing, toilet flushing, and irrigation) than the use of water for potable uses. In 2014, approximately 80 percent of the water used at SDIA was for non-potable uses. In 2014, the source of this water was potable water from the municipal supply and a small amount of condensate water collected at SDIA. Since 2014, the Airport has gradually increased its use of non-potable water for non-potable purposes due to Airport programs and infrastructure adjustments that allow the Airport to capture and use stormwater and condensate for such purposes. This reduces the Airport's overall use of potable water.



Source: San Diego County Regional Airport Authority. Water Stewardship Plan-San Diego International Airport-Protecting Our Water Resources. Prepared by Haley & Aldrich, Inc. May 2016.

Figure 3.15-1 2014 Water Use at SDIA

As part of its overall commitment to sustainable practices and as a component of its overarching Sustainability Management Program, SDIA prepared a Water Stewardship Plan¹⁹ in May 2016 to address water conservation, water quality, and flood resilience. The aim of the Water Stewardship Plan is to rethink management of water resources while accommodating passenger growth, new airport developments, and climate change. Strategies identified in the plan are designed to help SDIA achieve greater independence from imported water supplies, and include water efficiency and stormwater capture and reuse.

SDCRAA is committed to exploring ways to reduce water consumption, including utilizing non-potable water to reduce use of potable water, where feasible. For example, condensate water generated from pre-conditioned air units at jet bridges is collected and reused for a variety of non-potable uses such as dust control during construction. In 2016, this program collected and used an estimated 103,000 gallons of condensate water (a 46 percent increase from 2015).²⁰ Additionally, the T2 Parking Plaza that opened in May 2018 includes a below-ground rainwater storage system with a capacity of approximately 100,000 gallons, which is part of the SAN Stormwater Capture and Reuse System (discussed further in Section 3.15.6.1 below and Section 3.10, Hydrology and Water Quality). The water captured in this system is used by the CUP and has a corresponding reduction in the use of potable water at SDIA. During the first 8 months of the T2 Parking Plaza system's operations, over 1.6 million gallons of storm water was collected and reused.

3.15.4.2 Wastewater

Wastewater in the project area is managed by the PUD Wastewater Branch, which operates the two components of the City's wastewater system: the Metropolitan Sewerage System and the Municipal Wastewater Collection System. The Metropolitan Sewerage System treats wastewater for the City of San Diego and 15 other cities and districts with a total population of over 2.2 million. It serves an area of 450 square miles and treats an average of 180 million gallons of wastewater each day.²¹ Wastewater projections are updated on a regular basis to reflect the latest available information and trends in population growth, per capita wastewater flows, and population-independent flows.²² Per capita wastewater flows have been declining since the early 1990s, which is primarily a reflection of water conservation programs and the increase in the cost of potable water.²³

The Municipal Wastewater Collection System collects and conveys wastewater from residences and businesses in the City of San Diego. It serves an area of 330 square miles with a population of 1.3 million people. The Municipal Wastewater Collection System consists of over 3,000 miles of sewer lines with over 250,000 connections, and nine major pump stations and 75 smaller pump stations.²⁴ Treated effluent is either discharged to the Pacific Ocean through the Point Loma Ocean

¹⁹ San Diego County Regional Airport Authority. Water Stewardship Plan-San Diego International Airport-Protecting Our Water Resources. Prepared by Haley & Aldrich, Inc. May 2016. Available: http://san.org/Portals/0/Documents/Environmental/2016_0509_Water%20Stewardship%20Plan%20Document_F2.pdf.

²⁰ San Diego County Regional Airport Authority. Sustainability Report 2016. GRI Index 2017. No date.

²¹ Metro Wastewater Joint Powers Authority. San Diego Regional Wastewater Treatment System - System Map. 2019. Available: <https://www.metrojpa.org/facilities/system-map>.

²² City of San Diego Public Utilities Department. Metropolitan Wastewater Plan. August 2012.

²³ City of San Diego Public Utilities Department. Metropolitan Wastewater Plan. August 2012.

²⁴ City of San Diego. Fiscal Year 2016 Adopted Budget – Public Utilities. No Date. Available: <https://www.sandiego.gov/sites/default/files/legacy/fm/annual/pdf/fy16/vol3/v3publicutilities.pdf>.

Outfall or the South Bay Ocean Outfall, or put through further treatment and used for reclaimed water applications.

One of the largest pump stations, Pump Station No. 2 on North Harbor Drive, is located east of McCain Road, immediately south of SDIA. The average daily flow into Pump Station No. 2, which includes flow from SDIA, is approximately 175 MGD. This flow is pumped to the Point Loma Wastewater Treatment Plant through two 87-inch force mains. The Point Loma Wastewater Treatment Plant treats approximately 175 MGD of wastewater, which is below its treatment capacity of 240 MGD.²⁵ Virtually all of the inflow to the Point Loma Wastewater Treatment Plant is conveyed by Pump Station No. 2.²⁶ The treated effluent is discharged to the ocean through the Point Loma Ocean Outfall. Organic solids are pumped to the Metro Biosolids Center, a biosolids treatment facility, located adjacent to the Miramar Landfill, operated by PUD that turns waste into biosolids that are used as soil amendments, landfill, and landfill cover.

The City conducts comprehensive and systematic inspections and assessments of all components of the wastewater system to identify problems requiring repair and prioritize improvement projects for inclusion in the City's capital improvement program (CIP).²⁷ This includes a flow monitoring program, trunk sewer and small main sewer capacity assessment program, and assessment reports for large and small pump stations to identify facility upgrade/replacement requirements and ensure sufficient capacity in the sewer system.²⁸ Further, in response to the need to upgrade and replace aging water and wastewater infrastructure, the City instituted a service rate increase beginning in 2007 to pay for needed water and wastewater system improvements, such as replacement of water mains, water treatment plant upgrades, and water pump station improvements. Planned improvements would increase capacity to treat nearly 340 million gallons per day estimated to be generated by 2050.²⁹

The existing sewer system at SDIA consists of a network of pipes ranging from 6 to 21 inches in diameter that connect to the public sewer system lines serving the area. Trunk sewer lines run along North Harbor Drive, Laurel Street, and Pacific Highway. A set of secondary sewer mains, underneath the Rental Car Center and Long Term Parking Lot, feed these trunk lines by collecting wastewater from SDIA. The trunk line along Pacific Highway ranges from 18 to 39 inches and runs from Washington Street to Laurel Street, continuing southeast to Grape Street where it bends west and connects to a 108-inch sewer interceptor located in Harbor Drive. There is also an 8-inch secondary line along Pacific Highway from Sassafras Street to Palm Street.

Interceptor sewer lines run along Harbor Drive, Barnett Avenue, and south across the west side of the Airport. The sewer interceptor along North Harbor Drive is a 108-inch concrete pipe that transverses the entire length of the Airport frontage and connects to Pump Station No. 2. It is fed

²⁵ City of San Diego Public Utilities Department. Point Loma Wastewater Treatment Plant website. Available: <https://www.sandiego.gov/mwwd/facilities/ptloma>.

²⁶ City of San Diego Public Utilities Water and Wastewater. Application for Renewal of NPDES CA0107409 and 301(h) Modified Secondary Treatment Requirements Point Loma Ocean Outfall. Executive Summary. January 2015.

²⁷ City of San Diego Metropolitan Wastewater Department. Sewer System Management Plan. February 2009.

²⁸ City of San Diego Metropolitan Wastewater Department. Sewer System Management Plan. February 2009.

²⁹ Metro Wastewater Joint Powers Authority. San Diego Regional Wastewater Treatment System - System Map. 2019. Available: <https://www.metrojpa.org/facilities/system-map>.

by numerous secondary sewer mains located underneath the parking lots of T1, T2, and airport administration building (the former Commuter Terminal) that range from 8 to 15 inches. The North Metro Interceptor Sewer No. 1 from Barnett Avenue under Marine Corps Recruit Depot (MCRD) consists of two sewer interceptors—a 96- and 11-inch diameter pipeline. The 114-inch primary line is protected in a utility tunnel as it traverses SDIA and MCRD. Both main lines traverse under the west end of the Airport runway and continue south under the east side of SDIA. These interceptor sewer lines converge on the north side of Harbor Drive west of the Airport at Pump Station No. 2. Two 87-inch interceptor lines exit Pump Station No. 2, one of which runs west along Harbor Drive and the other crosses Harbor Drive and follows San Diego Bay to the Point Loma Wastewater Treatment Plant. Currently, most of the potable water used at SDIA is discharged to the sewer after consumption for potable and non-potable uses.³⁰

As described above, SDIA used 82,351,808 gallons per year of municipally supplied potable water in fiscal year (FY) 2017. This equates to an average of 225,621 gallons per day. Assuming 90 percent of this water use would be discharged to the sewer (accounting for a 10 percent reduction for evaporation and infiltration), an average of approximately 203,059 gallons per day of wastewater was disposed of in the sewer in FY 2017.

Water conservation efforts at SDIA, described in Section 3.15.4.1.2 above, that lower potable water use also contribute to a reduction in generation of wastewater.

3.15.4.3 Solid Waste

Solid waste generated in San Diego County is disposed in three large solid waste landfills: Miramar, Sycamore, and Otay. Two of the three landfills, Miramar Landfill and Sycamore Landfill, are located within the City of San Diego, and Otay Landfill is in Chula Vista. The City of San Diego operates the Miramar Landfill, while the Otay and Sycamore Landfills are operated by Republic Services. Current estimates are that Miramar Landfill and Otay Landfill would remain open until 2030, and at that time, Sycamore Landfill is anticipated to receive additional solid waste. Otay Landfill is permitted to accept materials such as agricultural waste, construction/demolition debris, contaminated soil, industrial, inert, mixed municipal wastes, and sludge. Miramar Landfill is permitted to accept materials such as construction/demolition debris, non-friable asbestos wastes, mixed municipal wastes, and tires. Sycamore Landfill is permitted to accept materials that include agricultural waste, asbestos, contaminated soil, mixed municipal wastes, and sludge.³¹

Additionally, in the City of San Diego, there are several transfer stations, three mixed construction and demolition process facilities, several materials recovery facilities, composting and mulching facilities, and recycling facilities for materials such as concrete, asphalt, rock, dirt, metal, cardboard, paper, and other materials.³² Solid waste generated in the project area is generally collected by private contractors and transported to solid waste disposal and processing facilities within the City and county. SDIA contracts with waste haulers for collection and disposal of operations-related

³⁰ San Diego County Regional Airport Authority. Water Stewardship Plan-San Diego International Airport-Protecting Our Water Resources. Prepared by Haley & Aldrich, Inc. May 2016. Available: http://san.org/Portals/0/Documents/Environmental/2016_0509_Water%20Stewardship%20Plan%20Document_F2.pdf.

³¹ CalRecycle. SWIS Facility/Site Search. April 2019. Available: <https://www2.calrecycle.ca.gov/SWFacilities/Directory/>.

³² City of San Diego Environmental Service Department. City of San Diego Zero Waste Plan. June 2015. Available: <https://www.sandiego.gov/sites/default/files/legacy/mayor/pdf/2015/ZeroWastePlan.pdf>.

solid waste. The waste haulers select which facility(ies) to use for solid waste disposal/recycling. Similarly, while SDIA construction contracts typically identify solid waste recycling requirements, the facilities used for solid waste disposal/recycling are selected by the contractors.

Counties in California are required to plan for maintaining 15 years of countywide landfill disposal capacity. Based on projected generation rates, the County of San Diego has sufficient permitted landfill capacity to accommodate disposal for the next 15 years and beyond (current permitted capacity is estimated to extend through 2052).³³ The maximum allowable permitted capacities for all San Diego County landfills in 2017 was 6,933,400 tons per year. This annual capacity decreases to approximately 3,415,000 tons beginning in 2030 when the Otay Mesa and Miramar Landfills are estimated to close. The 15-year disposal average in the County (from 2017 to 2033 [i.e., the horizon year of the required 15-year planning period]), is estimated at approximately 3,333,042 tons per year, which is approximately half of the permitted capacity available through 2030.³⁴ When factoring in a 75 percent reduction of organics disposal to meet the state goals by 2025, the projected average solid waste disposal in the County by 2032 is 2,358,127 tons annually. This is approximately 1,056,873 tons below the annual capacity of 3,415,000 tons estimated to be available after 2030 (i.e., 31 percent of the permitted disposal capacity would still be available in the planning horizon year).³⁵ In addition to being well below the annual permitted capacity, landfills in San Diego County are also not reaching their permitted daily capacity.³⁶

Countywide and City solid waste disposal rates are varying. Countywide solid waste disposal decreased by 13 percent between 2000 and 2010 and rose by 10 percent between 2010 and 2015. The overall change between 2000 to 2015 was a decrease of four percent. In the City of San Diego, solid waste disposal decreased by 25 percent between 2000 and 2010 and increased by 22 percent between 2010 and 2015. The overall change between 2000 to 2015 was a decrease of 8 percent.³⁷ The decrease has been associated with the Great Recession between 2007 and 2009 and increased conservation and recycling activities, including an increase in xeriscape landscaping, expanded compost facilities, implementation of mandatory recycling ordinances, and increased construction and demolition recycling ordinances and facilities.

³³ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

³⁴ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Figure 7. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

³⁵ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

³⁶ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

³⁷ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

The solid waste generated at SDIA has fluctuated over the past several years as shown in Table 3.15-2 below. Most of the fluctuation is attributed to construction activities occurring at SDIA and wide variations in the amount of construction and demolition debris recycling that occurred each year. In general, the amount of solid waste disposed in landfills has been decreasing, while recycling has increased. For example, as shown in Table 3.15-2, the amount of non-construction and demolition debris material recycling increased from 687 tons in 2011 to 1,449 tons in 2016, while landfill disposal decreased from 4,902 tons in 2011 to 3,902 tons in 2016. In 2017, the amount of landfill disposal decreased from 2016 amounts and, similarly, the amount of recycling also decreased. The solid waste from SDIA is disposed at the Sycamore Canyon and Otay landfills; compost materials are disposed at the City of San Diego green waste facility at the Miramar Landfill.

Table 3.15-2: SDIA Solid Waste Generation by Type and Disposal Method (Standard Tons)

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Construction and Demolition Debris Recycling	5,150	27,276	1,199	49,754	89,281	35,662	14,605
Recycling	687	677	1,052	934	1,182	1,449	902
Landfill	4,902	4,645	4,086	3,962	3,789	3,902	3,031
Total Non-Hazardous Waste	10,739	32,598	6,337	54,650	94,252	41,013	18,538
Certified Hazardous Waste Disposal	80	173	213	34	9	197	255
Total Waste	10,819	32,771	6,550	54,684	94,261	41,210	18,793

Source: San Diego County Regional Airport Authority. Sustainability Report 2016. GRI Index 2017. No date; San Diego County Regional Airport Authority. Sustainability Report 2017. Performance Tables and Charts. 2018. Available: <http://sustain.san.org/tables/>.

Notes: Data is reported for the Fiscal Year (FY) --- July 1 through June 30

All Hazardous waste is handled by a certified waste contractor and disposed of in accordance with applicable regulations.

Totals do not include waste from international flights, which are disposed of separately per federal regulations.

3.15.4.3.1 Waste Diversion and Recycling Strategies

On December 16, 2013, the San Diego City Council adopted a Zero Waste Objective that established a target of 75 percent diversion of waste from landfills by 2020 and zero waste by 2040. In 2015, the City adopted a Zero Waste Plan to provide a framework of strategies to increase the City's diversion rate over the next 25 years and achieve compliance with current state diversion requirements.³⁸ To reach these goals, the City's efforts include increasing recycling program outreach efforts by promoting the reuse of more materials and diverting more recyclable or reusable waste from the Miramar Landfill.

SDCRAA has also implemented waste management programs to help achieve progress towards zero waste (diversion of 90 percent of waste from landfills). For example, since 2013, SDIA has a food waste diversion program to compost food scraps from the restaurants and prep kitchens located at the Airport. This program was expanded in 2016 to include post-consumer food waste. SDIA's existing waste reduction programs also include a green waste reduction and xeriscape program, where grass trimmings are left on the turf as organic fertilizer and other green waste is

³⁸ City of San Diego Environmental Service Department. City of San Diego Zero Waste Plan. June 2015. Available: <https://www.sandiego.gov/sites/default/files/legacy/mayor/pdf/2015/ZeroWastePlan.pdf>.

recycled into mulch or compost. Mulch is used on-site, and other green waste is taken off-site with coffee grounds and pre-consumer kitchen waste to a composting facility. SDIA diverted 20 tons of green waste from disposal in 2011.³⁹ Additionally, wood pallets are transported to a composting facility and converted to wood chips for resale.

A Green Concessions education and recognition program has been established for concession tenants at SDIA to encourage resource efficiency and conservation. Examples of sustainable business practices at Green Concessions-certified concessionaires that reduce solid waste generation include: use of recyclable food packaging, beverage containers, and utensils; offering alternatives to single-use water bottles; and composting and/or food procurement practices aimed at minimizing waste.⁴⁰

Solid waste reduction efforts include increasing diversion of construction and demolition debris from landfills. Approximately 78 percent of the construction and demolition debris associated with construction of T2-West Expansion (“The Green Build”) in 2013 was diverted from landfills.⁴¹ To further improve construction and demolition waste recycling, more robust waste management reporting was been incorporated SDCRAA’s capital project specifications, including updated specifications requiring contractors to submit monthly construction waste and recycling amounts.⁴²

SDCRAA is the recipient of various awards and recognition for the implementation of programs supportive of sustainability, including reducing solid waste generation. For example, in 2017, SDIA was awarded an “Outstanding Achievement Award” by the City of San Diego given to businesses and organizations that demonstrate expansion of recycling programs yearly, have received the City’s “Recycler of the Year” awards for five consecutive years, and have participated in the City’s Business Recycling Program for at least 10 years.⁴³ In 2016, SDIA was recognized with a “Governor’s Environmental and Economic Leadership Award” by the California Environmental Protection Agency in the “Waste Reduction” category for achievements in efforts such as waste prevention, reuse, recycling, composting, and environmentally-preferable purchasing. The award specifically recognized the Airport’s food waste collection program, air conditioning condensate water recovery and recycling initiative, and the Environmentally Preferred Product purchasing program.⁴⁴ Other recognition includes the California Resource Recovery Association’s

³⁹ Federal Aviation Administration, Office of Airports. Recycling, Reuse and Waste Reduction at Airports A Synthesis Document. April 24, 2013. Available: <https://www.faa.gov/airports/resources/publications/reports/environmental/media/RecyclingSynthesis2013.pdf>.

⁴⁰ San Diego County Regional Airport Authority. San Diego International Airport. News - Airport Launches Green Concessions Program. July 24, 2017. Available: <https://www.san.org/News/Article-Detail/ArtMID/952/ArticleID/186/Airport-Launches-Green-Concessions-Program>.

⁴¹ San Diego County Regional Airport Authority. Sustainability Report 2017. 2018. Available: <http://sustain.san.org/operational#oper-energy>.

⁴² San Diego County Regional Airport Authority. Sustainability Report 2017. 2018. Available: <http://sustain.san.org/operational#oper-energy>.

⁴³ City of San Diego. Media Release: Top Business Recyclers Honored at 25th Annual Waste Reduction Awards Ceremony. April 6, 2017. Available: https://www.sandiego.gov/sites/default/files/2017-04-05_top_business_recyclers_honored_at_25th_annual_waste_reduction_awards_ceremony_0.pdf.

⁴⁴ San Diego County Regional Airport Authority. San Diego International Airport. Press Release: Airport Authority Receives Prestigious Environmental Award for Waste Reduction Efforts. January 28, 2016. Available: <https://www.san.org/News/Article-Detail/ArtMID/952/ArticleID/110/Airport-Authority-receives-prestigious-environmental-award-for-waste-reduction-efforts>.

“Outstanding Construction and Demolition Award” in 2017 and recognition by the USEPA for innovative food recovery through food donations and composting.

3.15.4.4 Energy

3.15.4.4.1 Electrical Power and Natural Gas

Off-Airport

Electrical power and natural gas service at SDIA are provided by SDG&E, which supplies 1.4 million meters (business and residential) over a 4,100 square-mile service area that spans San Diego County and southern Orange County.⁴⁵ SDG&E performs modeling for electric power and natural gas demand on a continual basis to manage resource portfolios and infrastructure needs.⁴⁶

Four substations serve SDIA: Old Town C-124; Kettner C-457; Point Loma C-496; and a new substation, the Vine Substation, at Vine Street and Kettner Boulevard, east of SDIA. The Vine Substation project also included relocation of several 12-kilovolt (kV) distribution circuits within the surrounding public streets; loop-in of an existing 69kV power line to the new substation, and an upgrade of an existing telecommunication system. The new Vine Substation offloads the existing substations to address reliability concerns and also serves the area’s long-term needs by serving the projected electric distribution load growth. The Vine Substation initially added a 60 mega volt amp (MVA) increase in capacity to serve downtown San Diego and the surrounding area, including SDIA.⁴⁷ In cases where projects with large power loads are planned, these new power loads are considered together with other existing or anticipated future loads in the project vicinity, and electrical substations are upgraded or new substations are built if the capacities of existing substations are exceeded.⁴⁸

Near SDIA, the Pacific Highway right-of-way contains 12kV circuits fed from the Kettner Substation and new 12kV circuits that connect the new Vine Substation to existing circuits at Laurel Street and Sassafras Street. Two of the circuits currently feed power to the northern portion of the SDIA near the intersection of Sassafras Street and Pacific Highway.

Harbor Drive serves as a corridor for five 12kV circuits, four from the Kettner Substation and one from the Old Town Substation. An additional circuit runs to SDIA from the Point Loma Substation, providing backup for the Airport.

Natural gas utilities near SDIA include a 6-inch main, located in Harbor Drive, with 60 pounds per square inch (PSI) of pressure, a 4-inch main with 60 PSI from Sassafras Street, as well as a 4-inch line with 150 PSI from Pacific Highway terminating at the west end of SDIA.

⁴⁵ San Diego Gas and Electric. More Information webpage. Available: <https://www.sdge.com/more-information/our-company/about-us>.

⁴⁶ San Diego Gas and Electric. 2006 Long Term Procurement Plan. March 2006.

⁴⁷ San Diego Gas and Electric. Proponent’s Environmental Assessment for the Vine 69/12 kV Substation Project, Volume II. May 2014.

⁴⁸ San Diego Gas and Electric. Vine Substation Project Initial Study Checklist. January 2016.

On-Airport

As part of an infrastructure upgrade program, the SDCRAA recently invested in the provision of a 12kV loop throughout the Airport to provide a medium voltage distribution network. The network allows for more local management of power and for connections to multiple SDG&E circuits. This increases the Airport's electricity efficiency, reliability, and resiliency by providing more control and flexibility in both the mix of the energy sources used, as well as the siting of on-site energy generation. The automated systems controlling the medium voltage distribution network allow for shifting loads during power crises, reducing consumption during peak times, and identifying problems in the distribution system.⁴⁹

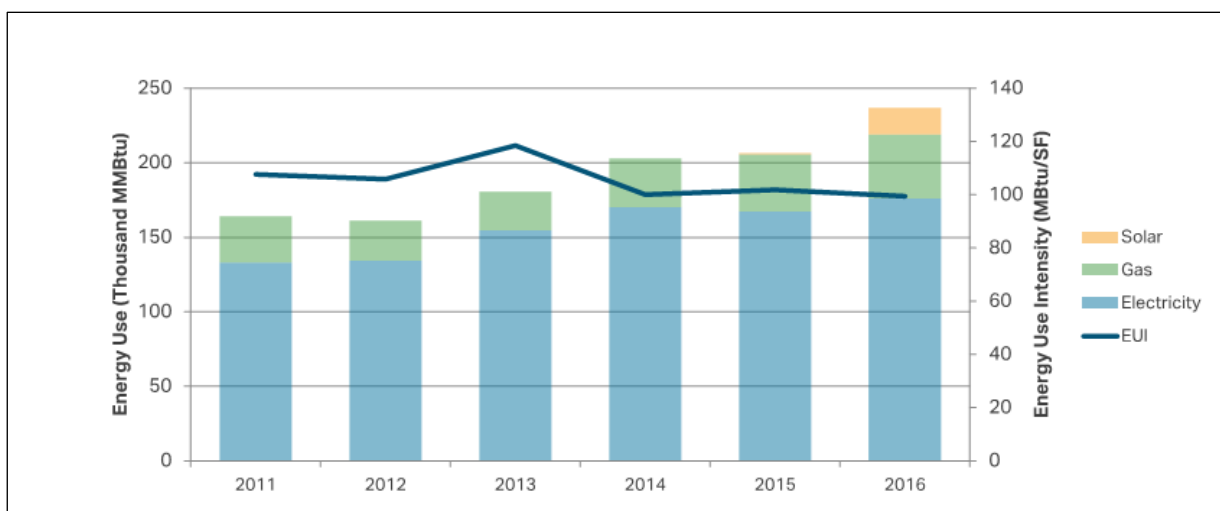
Chilled water and space heating hot water are provided to each of the existing terminals by a CUP that was constructed in 1996 and upgraded as part of the Green Build project. The CUP meets the existing peak cooling demand and has some additional capacity.

On-site renewable energy is generated by over 5.5 megawatts (MW) of solar photovoltaic energy installed on the roof of T2-West and on shade structures in the T2-West Parking Lot and the Employee Parking Lot off of Pacific Highway. These installations offset approximately 20 percent of the Airport's annual electricity consumption. With SDIA's recent enrollment in the SDG&E EcoChoice program, which provides a higher blend of grid-delivered renewable energy for interested customers, SDIA's percentage of renewable electricity usage is over 80 percent.

As shown in Figure 3.15-2 below, the Airport's energy usage has increased from 2011 to 2016 due to the addition of new facilities and greater passenger capacity. Although there has been an increase in 'greener' grid-delivered electricity and on-site renewables (including solar photovoltaic as described above), the overall energy use intensity (EUI) measured on a per square foot basis has decreased slightly.⁵⁰ Thus, although energy usage has increased, the Airport's energy use efficiency has improved since 2011 and this trend is expected to continue into the future. Table 3.15-3 below shows energy consumption for SDIA between 2013 and 2017.

⁴⁹ San Diego International Airport. Strategic Energy Plan – An Integrated Approach to Energy Resiliency. October 2017. Available: http://www.san.org/Portals/0/Documents/Environmental/SAN_STEP_103017.pdf.

⁵⁰ San Diego International Airport. Strategic Energy Plan – An Integrated Approach to Energy Resiliency. Page 10. October 2017. Available: http://www.san.org/Portals/0/Documents/Environmental/SAN_STEP_103017.pdf.



Source: San Diego International Airport. Strategic Energy Plan – An Integrated Approach to Energy Resiliency. October 2017.

Figure 3.15-2 SDIA Historical Energy Use Trend

Table 3.15-3: SDIA Energy Consumption

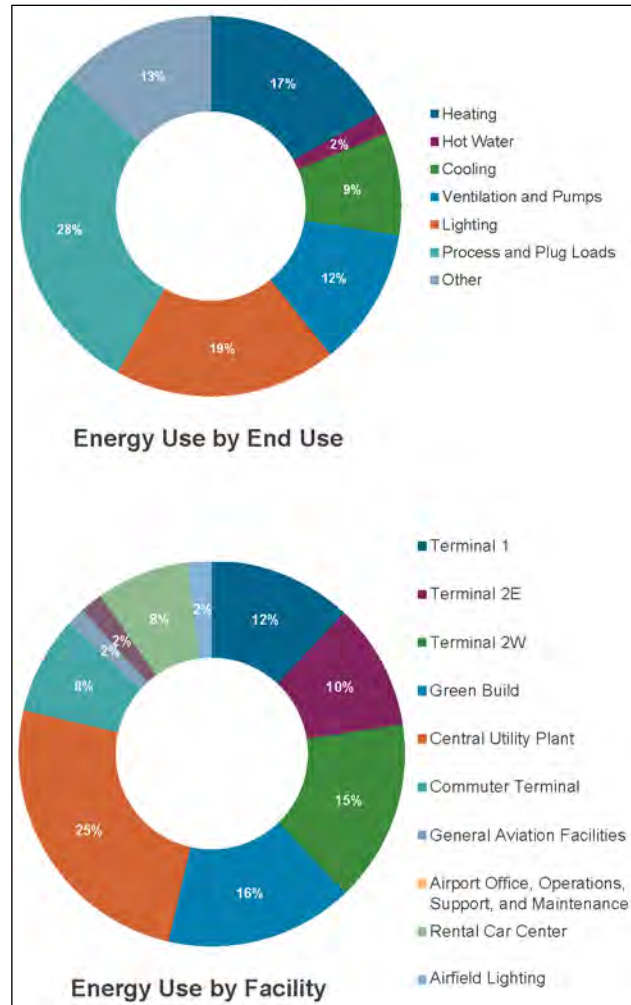
	2013	2014	2015	2016	2017
Energy Consumption within SDIA					
Natural Gas Consumption (MMBtu)	25,857	32,605	38,338	42,879	43,663
Solar Consumption (MMBtu)	0	0	940	18,044	27,099
Electricity Consumption (MMBtu)	154,671	170,200	167,319	176,059	165,734
Total Energy Use (MMBtu)	180,528	202,805	206,597	236,982	236,496
SDIA-Specific Measurements					
Energy Use Intensity (Mbtu/SF)	114	97	94	91	90.59
Passengers	17,710,241	18,758,751	20,081,258	20,725,801	22,156,493
Energy Use Intensity (Mbtu/Passengers)	10.19	10.81	10.29	11.46	10.67
Percent Renewable Electricity (includes grid delivery and on-site)	24%	32%	25%	44%	51%

Source: San Diego County Regional Airport Authority. Sustainability Report 2017. Performance Tables and Charts. 2018. Available: <http://sustain.san.org/tables/>.

Abbreviations: MMBtu - million British Thermal Units

As shown in Figure 3.15-3, terminals account for approximately 70 percent of all energy use at the Airport.⁵¹ The majority of the energy use is derived from process use, such as ground power, jet bridges, baggage handling systems, and plug loads (energy used by products like computers, which are plugged into wall outlets). Other primary categories of energy use include lighting, heating, cooling, auxiliary, and hot water.

⁵¹ San Diego International Airport. Strategic Energy Plan – An Integrated Approach to Energy Resiliency. Page 10. October 2017. Available: http://www.san.org/Portals/0/Documents/Environmental/SAN_STEP_103017.pdf.



Source: San Diego International Airport. Strategic Energy Plan – An Integrated Approach to Energy Resiliency. October 2017.

Figure 3.15-3 SDIA Historical Energy Use Trend – By End Use/Facility

3.15.4.4.2 Energy Conservation

SDG&E has programs that promote energy efficiency and use of renewable energy sources. In 2017, approximately 45 percent of the energy delivered to SDG&E customers came from renewable energy-related projects, including solar and wind generated electricity. Further, since 2015, customers have reduced their electricity use by more than 911 million kilowatt hours and their gas usage by more than 1.8 million therms.⁵²

From 2015 to 2035, SDG&E projects that total annual gas throughput will decrease by an average of 0.6 percent, primarily due to forecasted gas-fired Electric Generation (EG) load decline. Residential gas load is projected to increase at 0.5 percent per year, with customer growth narrowly outpacing gas energy efficiency savings. Commercial and industrial gas demand is

⁵² San Diego Gas and Electric. About Our Initiatives webpage. Available: <https://www.sdge.com/more-information/environment/about-our-initiatives>.

projected to decrease an average of 0.7 percent annually, with energy efficiency outpacing economic growth.⁵³ From 2016 to 2030, gas demand is projected to decline at an annual average rate of 0.86 percent for southern California, and by 1.79 percent state-wide.⁵⁴

The City of San Diego adopted a CAP in 2015 (amended in July 2016)⁵⁵ to set a strategy for meeting GHG emission reduction targets. The strategies and actions identified in the plan include increasing energy efficiency through programs and policies, such as increasing the use of renewable energy and achieving 100 percent renewable energy city-wide by 2035, reducing municipal energy consumption, and providing increased resources to businesses and residences to improve energy efficiency.

The PUD is also implementing energy conservation measures, recently investing an average of \$400,000 per year in energy conservation projects, upgrading almost all of its emergency generators, department-owned administration buildings, and the largest pump stations and wastewater treatment/water reclamation plants. Projects have included energy-efficient lighting and controllers, and upgrades to air conditioning systems.⁵⁶

SDCRAA is committed to building and operating sustainably and was one of the first major airports in the U.S. to institute a sustainability policy.⁵⁷ A central component of SDIA's sustainability program is the provision of cost-effective energy resiliency strategies that are environmentally responsible and aligned with Airport operation and development. A Strategic Energy Plan (STEP) has been developed that addresses energy efficiency and conservation; on-site energy generation and storage; and enhanced monitoring of key energy metrics to ultimately allow SDIA to establish more dependable energy sources, while offsetting GHG emissions. The STEP has set energy use intensity reduction targets of 10 percent in 2022, 20 percent in 2028, and 30 percent in 2035, as compared to energy usage in 2015. Reductions would be achieved in several ways, including: influencing the behavior of those who occupy and use the facilities; improving the controls in building systems; and upgrading equipment with new and more efficient replacements.

New construction at the Airport is intended to meet third-party certification programs for sustainable design and construction (including energy efficiency), such as meeting a minimum certification of Leadership in Energy and Environmental Design (LEED) Silver⁵⁸ for building design and construction and being qualified under the Envision Rating System⁵⁹ for sustainable

⁵³ Sempra Energy Utilities. 2016 California Gas Report SoCalGas and SDG&E Forecast Overview. August 2016.

⁵⁴ Sempra Energy Utilities. 2016 California Gas Report SoCalGas and SDG&E Forecast Overview. August 2016.

⁵⁵ City of San Diego. City of San Diego Climate Action Plan. July 12, 2016. Available: https://www.sandiego.gov/sites/default/files/final_july_2016_cap.pdf.

⁵⁶ City of San Diego Public Utilities. 2015 City of San Diego Urban Water Management Plan. June 2016.

⁵⁷ San Diego County Regional Airport Authority. San Diego County Regional Airport Authority Policies. Section 8.31 Sustainability. As Amended January 3, 2019. Available: https://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=12228&Command=Core_Download&language=en-US&PortalId=0&TabId=499.

⁵⁸ Leadership in Energy and Environmental Design (LEED) is a third-party rating system devised by the United States Green Building Council (USGBC) to evaluate the environmental performance of a building and encourage sustainable design.

⁵⁹ Envision is the Institute for Sustainable Infrastructure's rating system for infrastructure projects based on their contribution to economic, environmental, and social aspects of sustainability. Credits are offered in the area of quality of life, the natural world, leadership, climate and risk, and resource allocation.

infrastructure). To date, all new major construction that has occurred at SDIA since 2003 (when SDCRAA was formed) has achieved LEED-Gold or better certification. Of special note, the T2-West Expansion project remains the first and only commercial airport terminal to receive a LEED Platinum certification. SDIA has also undertaken energy auditing and retro-commissioning efforts to enhance the energy performance of existing buildings and infrastructure. Other programs include the Green Concessions education and recognition program (also discussed in Section 3.15.4.3.1 above) established for concession tenants to encourage resource efficiency and conservation. In addition to reducing solid waste generation discussed previously, examples of sustainable business practices at Green Concessions-certified concessionaires that support energy efficiency include use of energy efficient lighting systems to reduce electricity use.⁶⁰

As described in Section 3.15.4.4.1 above, solar panels have been installed at various locations at the Airport and on-site solar power generation capacity is currently 5.5 MW. It was announced in July 2019 that SDIA has contracted for installation of a battery energy storage system to store solar power for use during periods of peak demand. This system is expected to begin operation in 2020.⁶¹ Other recent energy-efficiency initiatives include optimization of the Central Utility Plant, LED lighting retrofits, and an ongoing calibration of the HVAC system.⁶²

In 2016, SDIA was recognized for its comprehensive energy management efforts with an "Energy Showcase Grand Champion Award" by SDG&E.

3.15.4.4.3 Transportation-Related Fuel

SDIA utilizes a variety of fuel systems, including Jet A fuel for aircraft and gasoline, diesel, and alternative fuels for automobiles, trucks, shuttle buses, support vehicles, and other ground-support equipment. In addition, passenger vehicle trips associated with the Airport require fuel, mainly gasoline and diesel. Fuels used for ground transportation vehicles are delivered, stored, and consumed in a distributed manner, as ground transportation functions are performed by a range of airport and non-airport vehicles, including shuttle buses associated with hotels, car rental operators, and parking facilities; taxis; and private vehicles.

The fueling of aircraft at the Airport occurs through the use of fuel trucks that service aircraft where they are parked, including at terminal gates. The fuel trucks fill up at a fueling station (i.e., "fuel rack") located adjacent to the fuel tank farm in the northern portion of the Airport and at a fuel rack located approximately 400 feet north of the airport administration building (the former Commuter Terminal).

SDCRAA's sustainability goals includes efforts to reduce consumption of transportation-related fuel. Actions implemented in 2017 include efforts to reduce vehicle idling on-site and to continue the SDCRAA fleet's conversion to cleaner vehicles. SDCRAA is also working with its business

⁶⁰ San Diego International Airport. News - Airport Launches Green Concessions Program. July 24, 2017. Available: <https://www.san.org/News/Article-Detail/ArtMID/952/ArticleID/186/Airport-Launches-Green-Concessions-Program>.

⁶¹ San Diego International Airport. San Diego International Airport and ENGIE Storage Contract to Further Airport's Strategic Energy Initiative. Press Release. June 25, 2019. Available: <https://www.san.org/News/Recent-Press-Releases/Article-Detail/ArtMID/1919/ArticleID/231/San-Diego-International-Airport-and-ENGIE-Storage-Contract-to-Further-Airport's-Strategic-Energy-Initiative>.

⁶² San Diego County Regional Airport Authority. Sustainability Report 2017. 2018. Available: <http://sustain.san.org/operational#oper-energy>.

partners to facilitate emissions reductions, especially related to converting airline-owned ground support equipment (GSE) to alternative fuels. SDCRAA is also developing a new Clean Transportation Plan to identify new opportunities to reduce carbon emissions and improve local air quality through energy, transportation, and other investments.⁶³

In 2017, the Airport was presented with an award from the San Diego Regional Clean Cities Coalition that recognizes local leaders in efficient vehicle fleets, alternative fuel deployments, and emissions reductions.⁶⁴

3.15.4.5 Telecommunications

Fiber optics and copper line for telecommunications are located in Pacific Highway and North Harbor Drive. Two central office diverse feed locations are located at the south side of the Airport. The Airport currently has several fiber loops, including an inner, perimeter, and T1 fiber loops. T2-East and T2-West are supported by the inner fiber loop, and T1 by the T1 fiber loop. The loop system provides diversity if a failure occurs between nodes. AT&T is SDIA's current wired telecommunications provider.

3.15.4.6 Storm Drain System

Approximately 90 percent of Airport property is considered impervious area as the surface is covered by buildings and paved surfaces. Surface runoff at SDIA flows primarily towards the south, to San Diego Bay, and the southwest, to the Navy Boat Channel. Figure 3.15-4 delineates the overall existing stormwater management system at SDIA, including the general locations of existing storm drain lines, flow directions, and outfalls, as well as existing structural best management practices (BMPs). The Airport has fifteen outfalls, only two of which discharge stormwater exclusively from the Airport and are owned by the SDCRAA; the remaining 13 outfalls discharge runoff that commingles with runoff from other jurisdictions, who also own those outfalls. Existing programs are in place to reduce stormwater runoff, including over five acres of bioswales at the Rental Car Center and a Stormwater Capture and Reuse System (discussed further in Section 3.10, Hydrology and Water Quality) constructed as part of the new Terminal 2 Parking Plaza that opened in May 2018.

3.15.5 Thresholds of Significance

The following significance criteria for utilities (including energy use) are derived from Appendix G of the State CEQA Guidelines. Under these criteria, the proposed project would result in significant impacts associated with utilities if it would:

Impact 3.15-1 Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or

⁶³ San Diego County Regional Airport Authority. Sustainability Report 2017. 2018. Available: <http://sustain.san.org/operational#oper-energy>.

⁶⁴ San Diego Regional Clean Cities Coalition. Green Fleet Leadership Awards. No date. Available: <http://www.sdcleancities.org/forfleets/green-fleet-leadership-awards/>.

telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Impact 3.15-2 Create water demands for which there are not sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.

Impact 3.15-3 Result in the determination by the wastewater treatment provider, which serves or may serve the project, that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Impact 3.15-4 Generate solid waste in excess of state or local standards, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals or not comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Impact 3.15-5 Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation.

Impact 3.15-6 Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

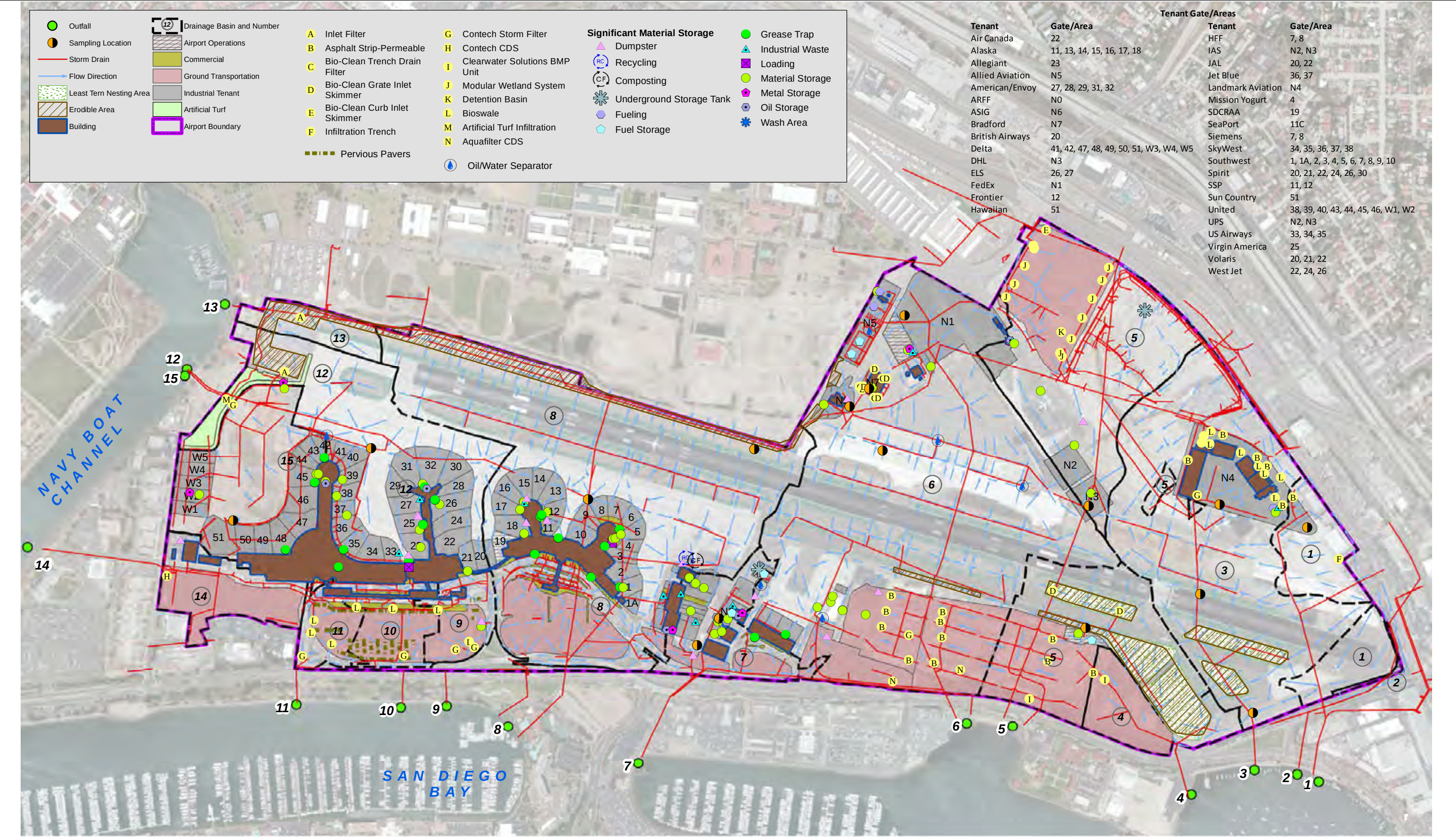
3.15.6 Project Impacts

3.15.6.1 Impact 3.15-1

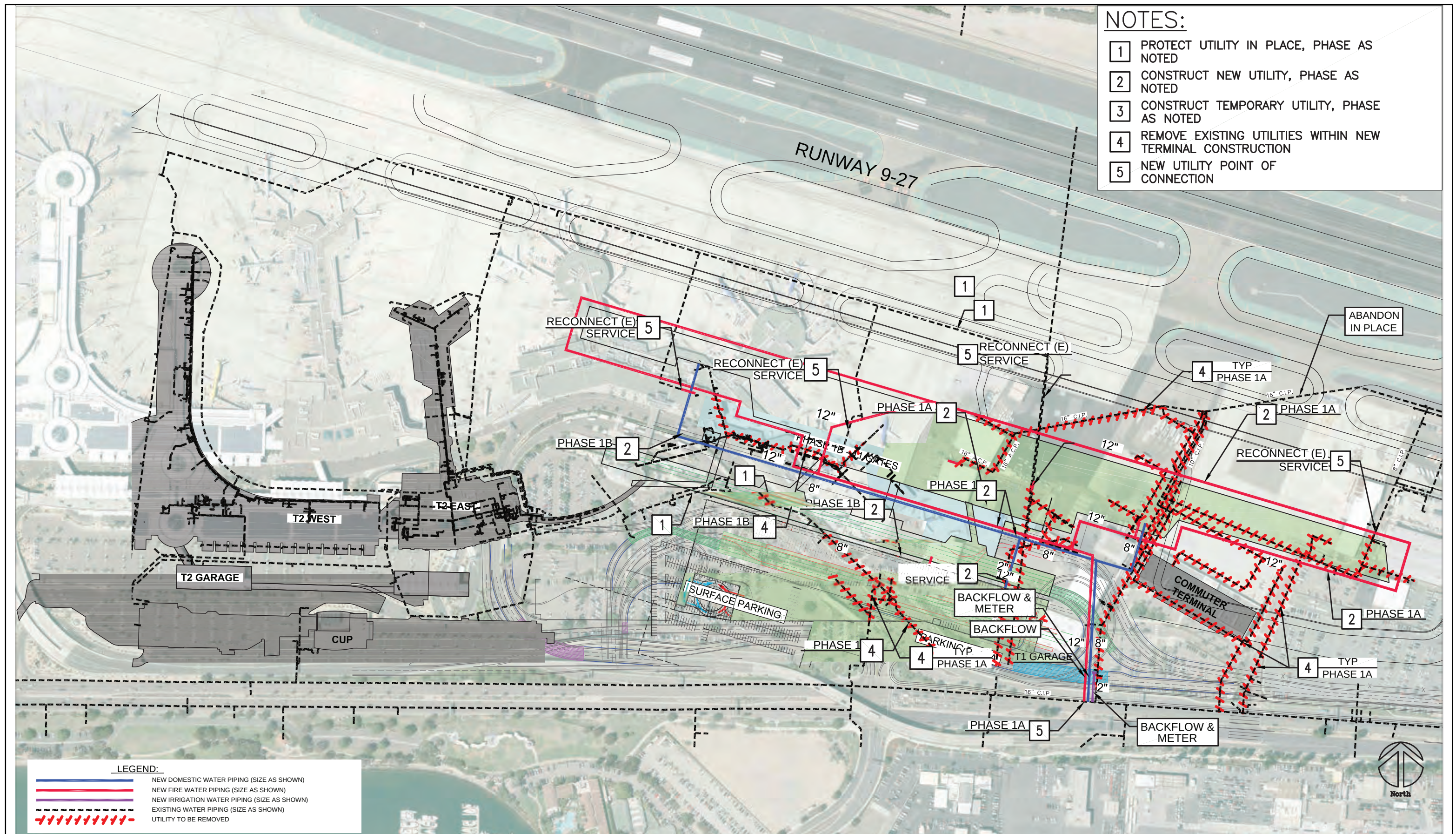
Impact 3.15-1: Implementation of the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. As such, and as further described below, this would be a *less than significant impact* for construction and operation.

Water Facilities

The proposed project would install new domestic water and fire water pipelines that vary in size from 2-inches to 16-inches to connect the newly constructed facilities occurring under Phase 1 and Phase 2 to existing pipelines. This would provide water service to the new facilities. This would include establishing connections to existing lines along North Harbor Drive and Airport Terminal Road to connect to the new construction. Further, existing pipelines located within the footprints of the proposed buildings would require relocation. Figure 3.15-5 shows planned connections for Phase 1. Phase 2 connections would be identified during the Phase 2 planning and design process. The construction, relocation, and operation of the domestic and fire water pipelines, as well as connections to the existing system, that would occur in Phase 1 and Phase 2 have been evaluated as part of the proposed project in context with other physical effects on the environment in applicable sections of this Recirculated Draft EIR (in particular, see Sections 3.2, Air Quality; 3.8, Geology and Soils; 3.9, Hazards and Hazardous Materials; 3.10, Hydrology and Water Quality; and 3.12, Noise).



Source: Amec Foster Wheeler, 2015



Source: San Diego County Regional Airport Authority, 2019

Any rules and regulations and mitigation measures (if applicable), identified in those and other sections of this Recirculated Draft EIR would also apply to the construction of utilities on-site. The proposed project would not result in the construction of new local infrastructure that could cause significant environmental impacts not already addressed as part of the proposed project. The impact would be *less than significant*.

Wastewater Facilities

The proposed project would relocate minor on-airport sewer lines and provide new connections to the existing municipal sewer system to accommodate the new and modified buildings under Phase 1 and Phase 2. Under Phase 1 of the proposed project, existing 8-inch sewer lines east and southeast of the existing T1 and near the Airport Administration Offices (the former Commuter Terminal) would be removed and new 8-inch lines would be installed to connect existing lines within the Airport boundary (Figure 3.15-6). Phase 2 modifications and connections would be identified during the Phase 2 planning and design process. The modified system would be designed to provide adequate capacity to handle the expected wastewater associated with the proposed project (Phase 1 and Phase 2) and maintain the flow conditions as currently exist at the site. Further, the new sewer facilities would be constructed in compliance with the City of San Diego Sewer Design Guide,⁶⁵ which identifies criteria to be used for the design of sewer systems and requires preparation of a sewer planning study for new sewer facilities that demonstrates that there are no negative impacts on the existing sewer system. The implementation of new and modified sewer facilities constructed in compliance with the City's Sewer Design Guide would ensure that there would be adequate local capacity to handle the projected increase in wastewater flow from the proposed project.

The construction and operation of on-site wastewater infrastructure and connections to the existing municipal wastewater system that would occur in Phase 1 and Phase 2 have been evaluated as part of the proposed project in context with other physical effects on the environment in applicable sections of this Recirculated Draft EIR (in particular, see Sections 3.2, Air Quality; 3.8, Geology and Soils; 3.9, Hazards and Hazardous Materials; 3.10, Hydrology and Water Quality; and 3.12, Noise). Any rules and regulations and mitigation measures (if applicable), identified in those sections and other Recirculated Draft EIR sections would also apply to the construction of utilities on-site. The proposed project would not result in the construction of new local infrastructure that could cause significant environmental impacts not already addressed as part of the proposed project. The impact would be *less than significant*.

Stormwater Facilities

Under Phase 1 of the proposed project, existing storm drains east of the existing T1 and north of the Airport Administration Offices (the former Commuter Terminal) would be removed and new stormwater piping and trench drains would be constructed between the runway and the new T1 and along the new T1 and T1 Parking Structure (Figures 3.15-7a through 3.15-7c). Phase 2 connections would be identified during the Phase 2 planning and design process. Additionally, as discussed further in Section 3.10, Hydrology and Water Quality, the proposed project would expand the capture area of the SAN Stormwater Capture and Reuse System, thereby supporting the

⁶⁵ City of San Diego Public Utilities Department. Sewer Design Guide. (revised) May 2015. Available: <https://www.sandiego.gov/sites/default/files/legacy/mwwd/pdf/sewerdesign.pdf>.

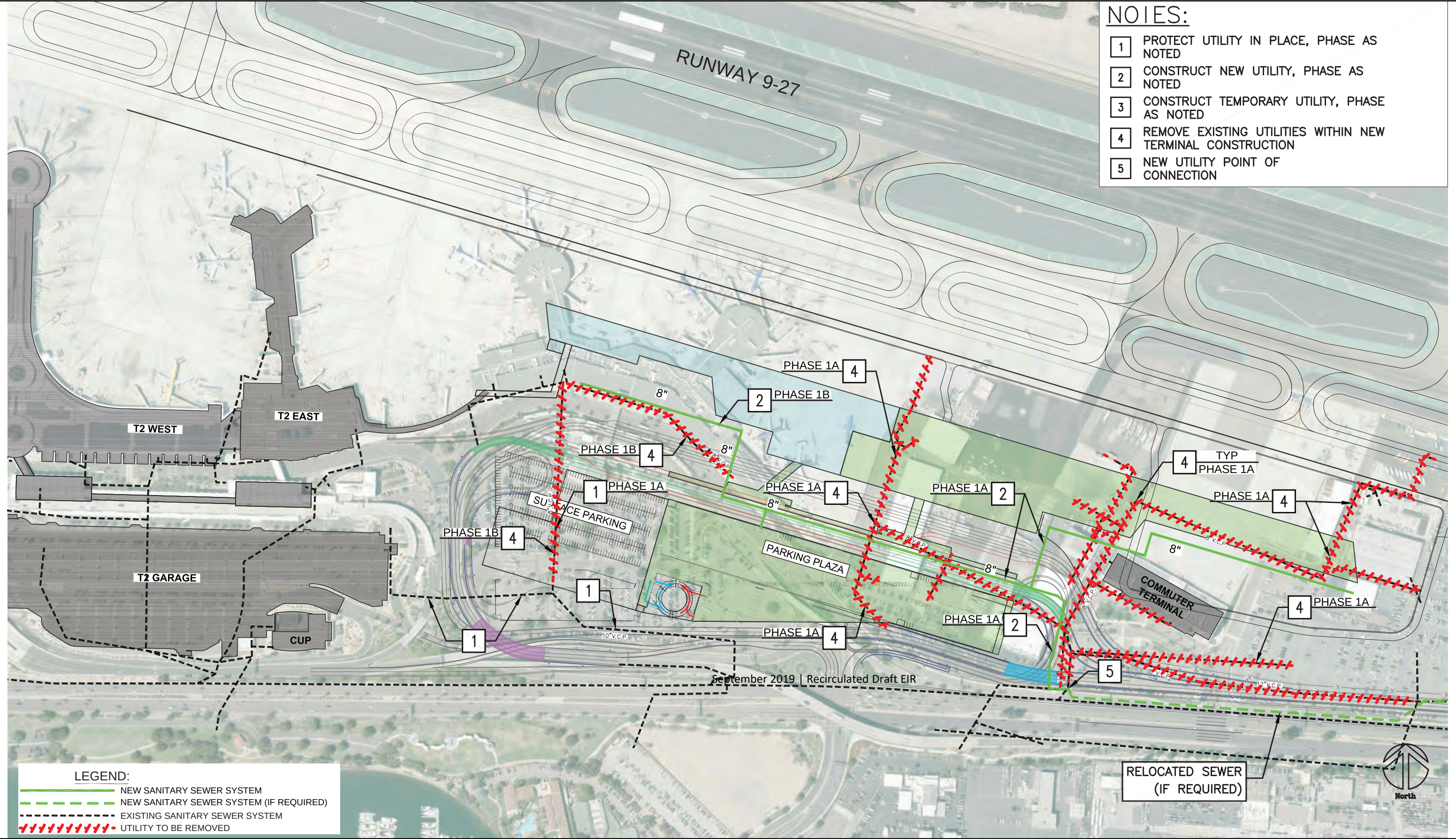
SDIA Water Stewardship Plan⁶⁶ and providing benefits related to stormwater drainage, surface water quality, and wet weather discharges. The SAN Stormwater Capture and Reuse System involves a comprehensive network of underground storm drain pipes and box culverts, both existing and proposed upsized facilities, along with a series of underground storage areas distributed in the eastern portion of the Airport and pumps that would capture and store a portion of stormwater at the project site. The stormwater would be reused for non-potable purposes, such as make-up water for the CUP cooling towers to replace water lost through evaporation. It is estimated that the SAN Stormwater Capture and Reuse System would capture 39 million gallons of stormwater per year for reuse or infiltration into the soil. It is anticipated that a minimum of 70 percent (i.e., approximately 30 million gallons) of the captured stormwater would be reused, which would result in an equivalent offset in the use of potable municipal water for non-potable purposes. The secondary impacts associated with the construction of the on-site drainage facilities, including the expansion of the capture area of the SAN Stormwater Capture and Reuse System, were accounted for as part of the proposed project.

As discussed above, construction activities for the proposed project would include modifications to the existing storm drain system, which would require that affected portions of the system be temporarily taken out of service while the modifications are completed. Also, there may be occasions where stormwater flows would need to be redirected around open construction areas. In either of the above type situations, a temporary stormwater conveyance system(s) would be installed to maintain appropriate stormwater drainage until the nearby construction activities are completed or the permanent system improvements or replacement drain line segments are in place and operational, which would serve to avoid flooding during construction. Construction would not create or contribute runoff water that would exceed the capacity of the stormwater drainage system.

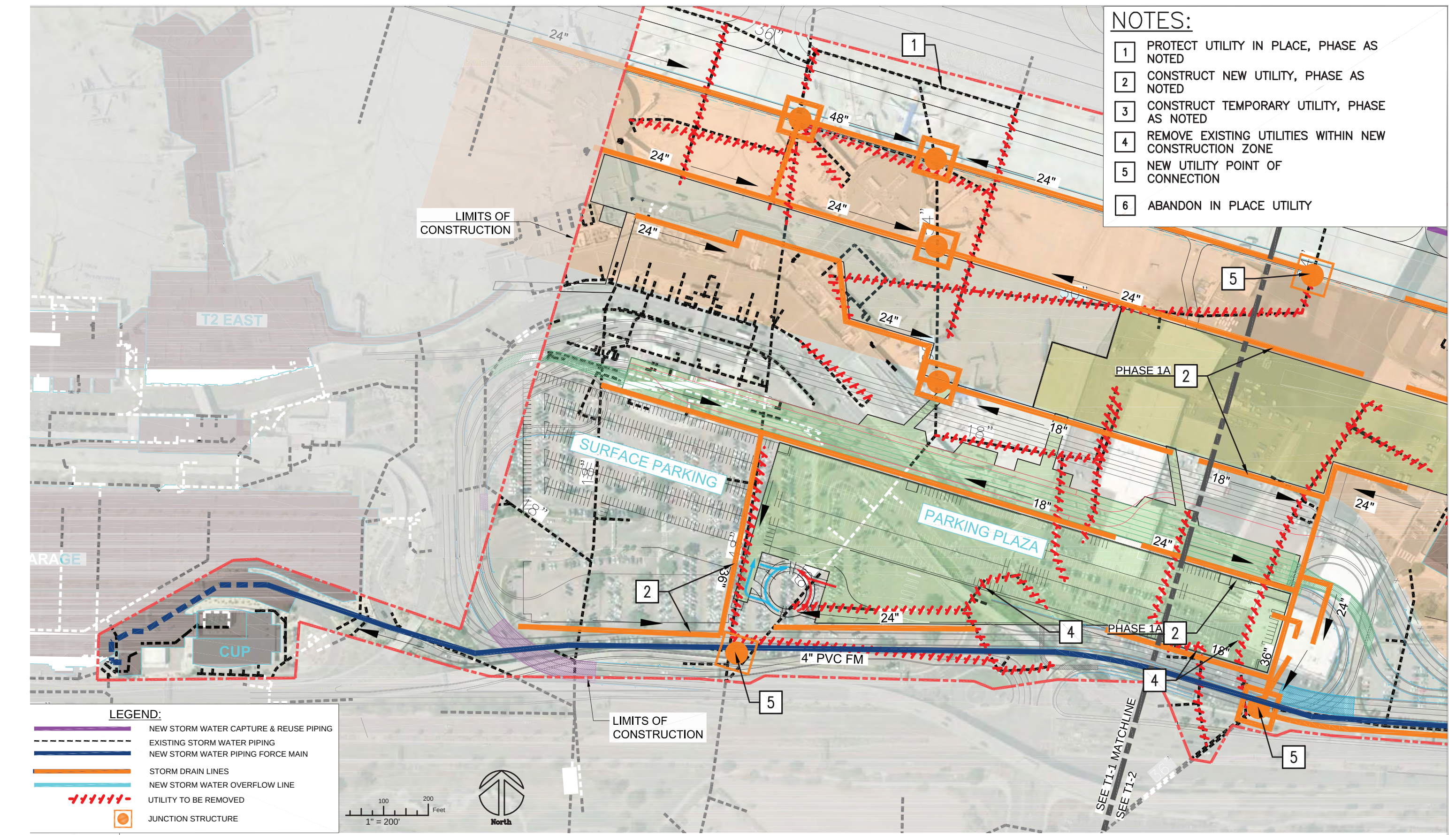
The construction and operation of on-site stormwater drainage infrastructure and connections to the existing municipal stormwater system that would occur in Phase 1 and Phase 2 have been evaluated as part of the proposed project in context with other physical effects on the environment in applicable sections of this Recirculated Draft EIR (in particular, see Sections 3.2, Air Quality; 3.8, Geology and Soils; 3.9, Hazards and Hazardous Materials; 3.10, Hydrology and Water Quality; and 3.12, Noise). Any rules and regulations and mitigation measures (if applicable), identified in those sections and other Recirculated Draft EIR sections would also apply to the construction of utilities on-site.

The project site is already developed and essentially fully-paved and the proposed project would not result in an increase in the overall volume of stormwater runoff at SDIA. (See Section 3.10, Hydrology and Water Quality, Subsection 3.10.6.3.2.) Further, in addition to the rerouting and resizing of existing storm drain lines, the proposed project includes the expansion of the capture area of the SAN Stormwater Capture and Reuse System which would route a portion of the

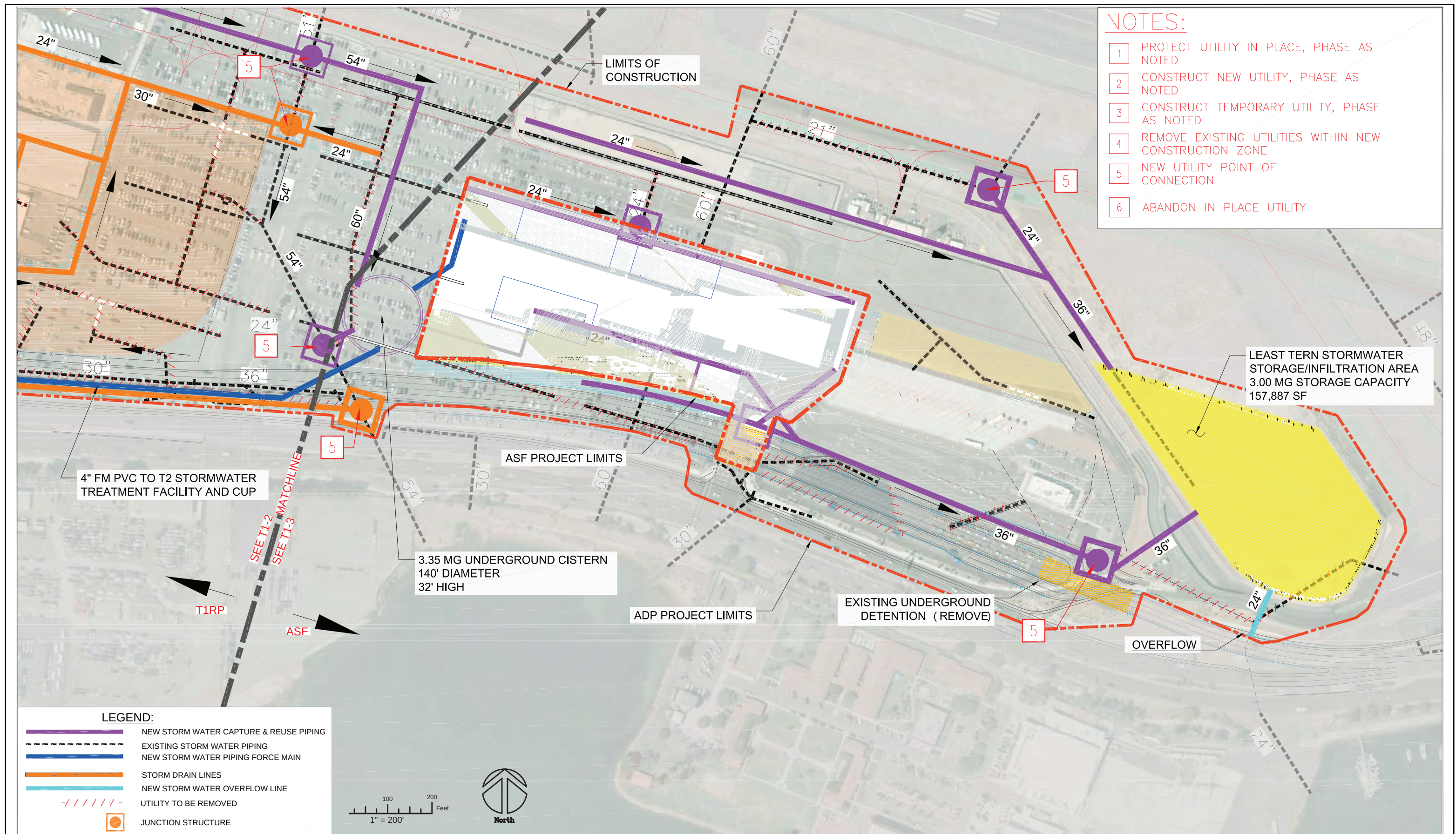
⁶⁶ San Diego County Regional Airport Authority. Water Stewardship Plan-San Diego International Airport-Protecting Our Water Resources. Prepared by Haley & Aldrich, Inc. May 2016. Available: http://san.org/Portals/0/Documents/Environmental/2016_0509_Water%20Stewardship%20Plan%20Document_F2.pdf.



Source: San Diego County Regional Airport Authority, 2019



Source: San Diego County Regional Airport Authority, 2019



Source: San Diego County Regional Airport Authority, 2019

stormwater drainage into an underground storage system for reuse at SDIA. Thus, there would be a net reduction in the overall volume of stormwater discharged from SDIA into San Diego Bay, and no expansion of existing off-site facilities would be necessary to accommodate runoff associated with operation of the proposed project. With implementation of the new system, the amount of stormwater discharged from SDIA would be reduced, and the proposed project would not exceed capacity of the existing off-site stormwater drainage facilities and, thus, no off-site expansion or upgrades of stormwater drainage facilities would be required. Therefore, although the proposed project would include the construction of new on-site stormwater drainage facilities and expansion involves a comprehensive network of underground storm drain pipes and box culverts, both existing and proposed upsized facilities, along with a series of underground storage areas distributed in the eastern portion of the Airport and pumps that would capture and store a portion of stormwater at the project site. The stormwater would be reused for non-potable purposes, such as make-up water for the CUP cooling towers to replace water lost through evaporation. It is estimated that the SAN Stormwater Capture and Reuse System would capture 39 million gallons of stormwater per year for reuse or infiltration in the soil. It is anticipated that a minimum of 70 percent (i.e., approximately 30 million gallons) of the captured stormwater would be reused, which would result in an equivalent offset in the use of potable municipal water for non-potable purposes. The secondary impacts associated with the construction of the on-site drainage facilities, including the expansion of the capture area of the SAN Stormwater Capture and Reuse System, were accounted for as part of the proposed project.

As discussed above, construction activities for the proposed project would include modifications to the existing storm drain system, which would require that affected portions of the system be temporarily taken out of service while the modifications are completed. Also, there may be occasions where stormwater flows would need to be redirected around open construction areas. In either of the above type situations, a temporary stormwater conveyance system(s) would be installed to maintain appropriate stormwater drainage until the nearby construction activities are completed or the permanent system improvements or replacement drain line segments are in place and operational, which would serve to avoid flooding during construction. Construction would not create or contribute runoff water that would exceed the capacity of the stormwater drainage system.

The construction and operation of on-site stormwater drainage infrastructure and connections to the existing municipal stormwater system that would occur in Phase 1 and Phase 2 have been evaluated as part of the proposed project in context with other physical effects on the environment in applicable sections of this Recirculated Draft EIR (in particular, see Sections 3.2, Air Quality; 3.8, Geology and Soils; 3.9, Hazards and Hazardous Materials; 3.10, Hydrology and Water Quality; and 3.12, Noise). Any rules and regulations and mitigation measures (if applicable), identified in those sections and other Recirculated Draft EIR sections would also apply to the construction of utilities on-site.

The project site is already developed and essentially fully-paved and the proposed project would not result in an increase in the overall volume of stormwater runoff at SDIA. (See Section 3.10, Hydrology and Water Quality, Subsection 3.10.6.3.2.) Further, in addition to the rerouting and resizing of existing storm drain lines, the proposed project includes the expansion of the capture area of the SAN Stormwater Capture and Reuse System which would route a portion of the

stormwater drainage into an underground storage system for reuse at SDIA. Thus, there would be a net reduction in the overall volume of stormwater discharged from SDIA into San Diego Bay, and no expansion of existing off-site facilities would be necessary to accommodate runoff associated with operation of the proposed project. With implementation of the new system, the amount of stormwater discharged from SDIA would be reduced, and the proposed project would not exceed capacity of the existing off-site stormwater drainage facilities and, thus, no off-site expansion or upgrades of stormwater drainage facilities would be required. Therefore, although the proposed project would include the construction of new on-site stormwater drainage facilities and expansion of existing facilities, the construction would not cause significant environmental effects beyond those already addressed as part of the proposed project. As such, project construction and operation would result in a ***less than significant impact***.

Electric Power, Natural Gas, and Telecommunications Facilities

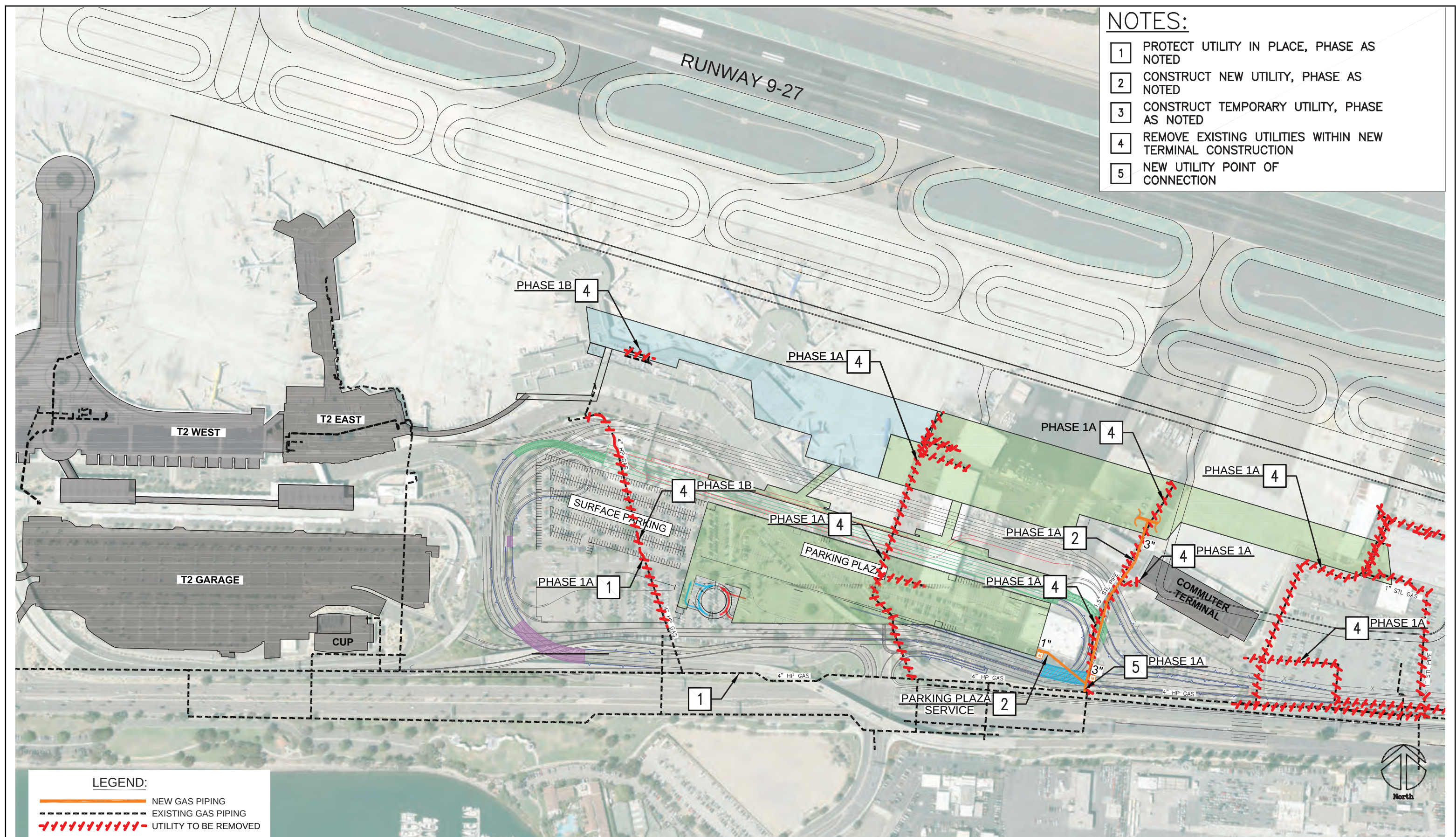
Construction would include the relocation and installation of electric lines, gas pipelines, and telecommunications facilities in the project area to accommodate the site layout (i.e., buildings and roadways) and to serve the new facilities constructed under Phase 1 and Phase 2.

As shown on Figure 3.15-8, during Phase 1, relocation of electric lines would include re-routing and removal of portions of an existing 12KV underground feeder. A new primary duct bank would be installed that is generally parallel to the new on-airport access roadway. It would connect to a secondary duct bank that extends along the Airport Terminal Road between the new T1 and T1 Parking Structure. Phase 2 connections would be identified during the Phase 2 design process. The new lines would be designed in accordance with SDG&E guidelines and applicable City of San Diego codes.

As shown on Figure 3.15-9, existing 1-inch gas pipelines east of the existing T1 and east of the Airport Administration Offices (the former Commuter Terminal) would be removed and new 1-inch and 3-inch pipelines would be installed to connect the new T1 and T1 Parking Structure with existing pipelines along North Harbor Drive. Phase 2 connections would be identified during the Phase 2 design process. The relocation of the gas pipelines would be coordinated with SDG&E.

As shown on Figure 3.15-10, existing underground fiber would be rerouted to avoid conflict with the T1 Parking Structure and other improvements and to connect to the new T1. Improvements would include installation of new 4 foot by 4 foot communications vaults and installation of conduit duct banks, including approximately six duct banks for third party service carriers. A new duct bank would be installed along North Harbor Drive outside of the lanes of traffic.

The construction of the electrical, natural gas, and telecommunications infrastructure has been evaluated as part of the proposed project in context with other physical effects on the environment in applicable sections of this Recirculated Draft EIR (in particular, see Sections 3.2, Air Quality; 3.8, Geology and Soils; 3.9, Hazards and Hazardous Materials; 3.10, Hydrology and Water Quality; and 3.12, Noise). Any rules and regulations and mitigation measures (if applicable), identified in those and other sections would also apply to the construction of utilities on-site. The proposed project would not result in the construction of new local infrastructure that could cause significant environmental impacts not already addressed as part of the proposed project. As such, project construction would result in a ***less than significant impact***.



Source: San Diego County Regional Airport Authority, 2019

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3.15.6.1.1 Mitigation Measures

No mitigation is required for construction and operations.

3.15.6.1.2 Significance of Impact After Mitigation

As indicated above, no mitigation is required relative to this impact. The project would result in a *less than significant impact* for construction and operations.

3.15.6.2 Impact 3.15-2

Summary Conclusion for Impact 3.15-2: The proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. As such, and as further described below, this would be a *less than significant impact* for construction and operation.

3.15.6.2.1 Construction

During construction, water would be used for dust suppression of exposed soils during excavation and grading and cement mixing. Water used for dust suppression would likely be from on-site sources, such as water hydrants, but may also be provided by water trucks that are filled off-site and typically use recycled water. Also, some cement mixing is expected to occur off-site using an off-site water source selected by the contractor. The water use during construction would be temporary and intermittent (i.e., the amount of water used would vary depending on the amount of exposed soil requiring dust suppression and the weather conditions when soil is exposed – for example increased frequency of wetting exposed soils would be required during hot and dry conditions as opposed to a lower frequency during cool and moist conditions). Therefore, the amount of water used during construction would be highly variable and cannot be quantified; however, overall the water use would be less than the potable water demand associated with operation of the proposed project which, as addressed in Section 3.15.6.2.2 below, would not exceed existing potable water supplies.

No significant impact is anticipated to occur due to project construction activities, because the water demands associated with such activities are intermittent and temporary and would not exceed available supplies.

Therefore, construction impacts would be *less than significant*.

3.15.6.2.2 Operations

While not required for the proposed project (see Section 3.15.3.2 above), the water provider (i.e., PUD) has prepared a WSA for the proposed project to determine if adequate potable water supply is available to serve the proposed project. The WSA (provided in Appendix R-I) prepared for the proposed project by PUD assesses the adequacy of the water supply to meet the estimated demands of the proposed project through 2035 and those of PUD's customers and projected new users under normal, single-dry year, and multiple-dry year conditions. The WSA assessed the water demand projections for the proposed project using the City of San Diego's 2015 Urban Water Management Plan (City 2015 UWMP) and SDCWA's 2015 Urban Water Management Plan (SDCWA 2015 UWMP), which are based on SANDAG Series 13: 2050 Regional Growth Forecast.

As shown in Table 3.15-4 below, with implementation of the proposed project, the Airport's overall potable water use is anticipated to increase by 221 AFY in 2040 as compared to the City's 2015

UWMP forecasted water demand. The increase is associated with an increase in employees, passenger growth, implementation of the commercial development opportunity area, and the CUP expansion.

As identified in Appendix R-1, the UWMP forecasted water demands compared with projected supplies demonstrate that with existing supplies, imported water purchases and demand “buffers” (e.g. an approximate 11,185 acre-feet per year (afy) Accelerated Forecasted Growth regional buffer described in SDCWA’s and City’s respective UWMPs), as well as implementation of the projects discussed in the SDCWA’s, the City’s, and MWD’s planning documents, there are adequate anticipated water supplies to serve all anticipated growth (existing and future planned uses) and development.

Furthermore, PUD data and interim supply and demand forecast tracking in 2018 supports a reduction in 2015 UWMP projected demands as a possible result of less water consumption than was originally projected (overestimation of demands or effective conservation efforts and increased water efficiencies). Additionally, the Pure Water Phase 1, described in Section 3.15.4.1, has since been approved as a verifiable water supply source.

The WSA findings substantiate that there is sufficient planned water supply to serve the proposed project’s future water demands within the PUD’s water service area in normal, single-dry year, and multiple-dry water year forecasts, and concludes that the projected level of water demand for this proposed project is within the regional water resource planning documents of the City, SDCWA, and MWD. Current and future water supplies, as well as the actions necessary to develop these supplies, have been identified in the water resources planning documents of the PUD, SDCWA, and MWD to serve the projected demands of the proposed project, in addition to existing and planned future water demands of the PUD.

Table 3.15-4: Projected Water Demand for the Proposed Project

	2015	2040	Net Increase	Demand Factor	Demand (gpd)	Demand (afy)	Notes
Factors Affecting Future Demand							1
Airport Employees	6,054	11,847	5,793	8.7 gpcd	50,399	56	2, 4
Commercial Development Area Employees	NA	800	800	8.7 gpcd	6,960	8	3, 4
Annual Number of Passengers	20,322,000	39,760,000	19,438,000	2 gpcd	106,510	119	5, 4
Central Utility Plant Expansion (sf)	14,500	26,500	12,000	2.8 gal/sf/day	33,600	38	6
Total Net Increase in Water Demand - Proposed Project					197,469	221	
% of UWMP Forecasted City Demands						0.08%	7

Source: Appendix R-I

Notes:

1. Future water demand assumed to be the net increase in 2040 over existing conditions in 2015 when the 2015 UWMP was prepared.
2. Airport employment estimate for 2015 is based on the combination of aviation, concessions, and government employees at SDIA in 2017 per Table 5-1 of the *San Diego International Airport Economic Impact Study* completed in June 2018 by CDM Smith for the San Diego County Regional Airport Authority, as adjusted to the passenger activity level at SDIA in 2015 (i.e., 2017 employment of 6,667 reduced to 6,054 in 2015, in proportion with annual passenger activity level at SDIA in 2015 being approximately 20,322,000 compared to 22,370,000 in 2017). The Airport employees for 2040 were estimated based on that same ratio of employees to passengers.
3. One (1) employee per 500 feet is the acceptable standard for estimating commercial employment density.
4. Airport employee and passenger gpd demand factors are based SDIA Domestic Water use for the 5-year average water consumption during 2013-2017. Passenger demand is estimated at 2 gpcd and Airport employee demand is estimated at 8.7 gpcd. The factors are considered to be conservative in that they do not account for increased presence of water conservation features in new construction (i.e., low flow toilets, sensor activated faucets, etc.).
5. The number of passengers in 2015 is based on the SDIA Annual Activity Report. Available: https://www.san.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=12777&Command=Core_Download&language=en-US&PortalId=0&TabId=403. The number of passengers projected for 2040 is based on the San Diego County Regional Airport Authority Final Technical Memorandum Aviation Activity Forecast Update – San Diego International Airport prepared by LeighFisher, April 2019.
6. CUP (Central Utility Plant) expansion is based on Applicant data and additional 12,000 sf resulting in an increase of 2.8 gallons/sf in water demand.
7. See Appendix R-I tables in Availability of Sufficient Supplies section.

Abbreviations: NA – not applicable, gpd – gallons per day, afy – acre feet per year, gpcd – gallons per capita daily, sf – square feet

Further, the projected water demand presented in Table 3.15-4 above is conservative in that it does not account for the fact that the proposed project would replace the existing T1 constructed in the late 1960s and the Airport Administration Offices building constructed in 1968 (and repurposed into the Airport's former commuter terminal in 1996) with buildings that would, at a minimum, fully comply with current state and city codes. This includes the California Plumbing Code and the California Green Building Code, which mandate installation of water conserving plumbing fixtures and fittings (e.g., water efficient toilets and dishwashing machines). Therefore, it is expected that the new facilities associated with the proposed project would achieve a reduction in water use rates as compared to the existing water use rates.

Further, the projected water demand presented in Table 3.15-4 above is conservative in that it does not account for water conservation and water demand reduction features implemented by

SDCRAA. As described in Section 3.15.4.1.2, SDCRAA is committed to reducing water consumption and has developed a Water Stewardship Plan that identifies water conservation strategies and is currently implementing programs such as collecting stormwater and condensate water to use for on-site non-potable purposes and increasing the use of drought tolerant landscaping. The volume of stormwater currently being captured at the Terminal 2 Parking Plaza and reused at the Central Utility Plant (CUP), plus the volume of stormwater that would be sent to the CUP from the south side components of the SAN Stormwater Capture and Reuse System constructed as part of the project would in themselves replace approximately 70 percent of the approximately 18 million gallons of potable water used annually in the cooling towers at the CUP. SDCRAA's goal of reducing water consumption at the Airport overall would be furthered by water conservation strategies implemented as part of the proposed project. The San Diego International Airport Terminal 1 Replacement Program – Program Definition Document (PDD)⁶⁷ that addresses the design and construction of the replacement T1 identifies steps to achieve the environmental sustainability objectives of the T1 Replacement Program. Requirements supportive of water conservation and water quality goals identified for implementation as part of the T1 Replacement Program consist of the following:⁶⁸

- Meet all CALGreen requirements pertaining to water, utilizing the latest version of CALGreen
- Meet water-related requirements (or functionally equivalent) on the City of San Diego CAP Consistency Checklist^{69,70}
- Incorporate meters/sub-meters for all facilities, including tenant facilities
- Utilize ultra-low-flow water fixtures
- Use xeriscaping for all landscaped areas
- Incorporate elements that eliminate the use of potable water for non-potable processes
- Incorporate Low Impact Development (LID) strategies that focus on stormwater capture and reuse and infiltration
- Incorporate stormwater BMPs during construction
- Comply with SDCRAA BMP Design Manual requirement to capture and treat the pollutants in the volume of stormwater runoff from a 24-hour 85th percentile storm event
- Incorporate condensate water reuse from gate-supplied pre-conditioned air

⁶⁷ The Program Definition Document addresses Phase I of the proposed project. A similar document with similar requirements would be prepared for Phase 2 of the proposed project during the planning and design phase.

⁶⁸ San Diego County Regional Airport Authority. San Diego International Airport Terminal 1 Replacement Program - Program Definition Document. Chapter E, Environmental Sustainability & Compliance (draft). January 31, 2019.

⁶⁹ The CAP Consistency Checklist contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Water-related measures pertain to use of low-flow plumbing fixtures and fittings to achieve greater reductions in indoor water consumption compared to baseline conditions.

⁷⁰ City of San Diego. Climate Action Plan Consistency Checklist. Revised June 2017. Available: <https://www.sandiego.gov/sustainability/climate-action-plan>.

Although development plans for Phase 2 of the proposed project (i.e., the proposed “Stinger” and T2-East modifications) have not yet progressed to the point of having PDDs, it is anticipated that those future PDDs will include a similar Environmental Sustainability and Compliance chapter with similar water conservation features to those identified above for Phase 1 of the proposed project, consistent with SDIA’s Water Stewardship Plan and other sustainability policies and commitments.

As also described in Section 3.10.4.5.1, the proposed project would expand the capture area of the SAN Stormwater Capture and Reuse System, which would offset the amount of potable water being used for non-potable purposes at the Airport, as well as accommodate the post-construction stormwater treatment control requirements of the Municipal Permit for new developments/redevelopments applicable to the proposed project. The SAN Stormwater Capture and Reuse System would allow for the capture of approximately 39 million gallons of stormwater per year for reuse or infiltration, assuming normal precipitation patterns. It is anticipated that a minimum of 70 percent (i.e., approximately 30 million gallons) of the captured stormwater would be reused, which would result in an equivalent offset in the use of potable municipal water for non-potable purposes. The proposed project would also provide a stormwater treatment control process to address copper and zinc to meet Industrial General Permit requirements and the Airport Authority’s goals listed in the San Diego Bay Water Quality Improvement Plan (WQIP).

The ADP-related elements of the SAN Stormwater Capture and Reuse System include the construction of an underground storage tank with approximately 3.4 million gallons of storage and underground infiltration areas that will temporarily store approximately 3 million gallons of stormwater, while simultaneously allow the stormwater to infiltrate into the ground. Instead of discharging into San Diego Bay, stormwater captured in the tank would be conveyed (piped) to the stormwater treatment facility that was constructed as part of the Terminal 2 Parking Plaza Project (completed in May 2018) and reused in the cooling towers located at the CUP that are part of the heating, ventilating, and air conditioning (HVAC) system or potentially for irrigation on the south side of the Airport. At final build-out, the total storage capacity of the SAN Stormwater Capture and Reuse System would be approximately 9.4 million gallons and allow for the capture and reuse or infiltration of approximately 39 million gallons of stormwater per year. There is currently no municipal supply of recycled water that is available for use by SDIA for non-potable purposes.

As described above, the proposed project would have sufficient water supplies available to serve it and reasonably foreseeable future development during normal, dry, and multiple dry years. Further, water conservation strategies would be implemented to reduce reliance on potable water supplies. The estimated increase in water demand of 221 AFY in 2040 is conservative in that it does not account for the use of non-potable water to off-set the use of potable water for some uses (i.e., the use of stormwater and condensate capture water for the CUP), nor does it factor in the implementation/expansion of water efficiency programs and measures that surpass CALGreen requirements. Therefore, impacts would be *less than significant*.

3.15.6.2.3 Mitigation Measures

No mitigation is required for construction or operations.

3.15.6.2.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required relative to this impact. The project would result in a *less than significant impact* for construction and operations.

3.15.6.3 Impact 3.15-3

Summary Conclusion for Impact 3.15-3: The proposed project would not result in the determination by the wastewater treatment provider, which serves or may serve the project, that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. As such, and as further described below, this would be a *less than significant impact* for construction and operation.

As previously described, most of the potable water used at SDIA is currently discharged into the sewer after consumption. The proposed project would result in an increase in potable water use and additional wastewater-generating facilities (e.g., sinks, toilets) associated with the new square footage to be constructed. As part of the new construction, the older outdated plumbing fixtures and fittings in the existing structures to be demolished would be replaced with new efficient plumbing that would comply with water conservation requirements, such as CALGreen and the California Plumbing Code, which mandate installation of water conserving plumbing fixtures and fittings (e.g., low-flow water fixtures and high-efficiency toilets and urinals). However, given that square footage would be greater than under existing conditions, and the number of passengers is projected to increase (see Section 2.5.1.1 in Chapter 2, Project Description), overall wastewater generation at SDIA is expected to increase. As described above in Table 3.15-4 under Impact 3.15-2, SDIA is projected to have a water demand of 197,496 gallons per day in 2040. Assuming 90 percent of this water use would be discharged to the sewer (accounting for a 10 percent reduction for evaporation and infiltration), an increase of approximately 177,746 gallons per day of wastewater would be disposed of in the sewer in 2040. As described under Impact 3.15-2, this water demand projection does not account for water conservation and water reuse (i.e., use of captured stormwater and condensate water for non-potable purposes) and, therefore, the actual amount of wastewater entering the sewer system is expected to be less.

As described in Section 3.15.4.2, the Point Loma Wastewater Treatment Plant current receives 175 million gallons of wastewater daily, virtually all from Pump Station No. 2, which is below its treatment capacity of 240 MGD. Therefore, the Point Loma Wastewater Treatment Plant currently has 65 million gallons of excess daily capacity, which is sufficient to accommodate the projected increase of 177,746 gallons per day of wastewater associated with the proposed project. Thus, the proposed project would not result in the construction of new wastewater treatment facilities. Further, as described in Section 3.15.4.2, the City's wastewater system is assessed and maintained on an ongoing basis under the Capital Improvement Program (CIP) to ensure adequate capacity. The City's planned improvements would increase the capacity to treat nearly 340 million gallons per day estimated to be generated within the service area by 2050.

The quality of wastewater generated by the proposed project is expected to be the same as currently generated at the site and would be required to conform to all applicable wastewater standards set forth by the San Diego Regional Water Quality Control Board (RWQCB) (for additional evaluation of water quality, see Section 3.10, Hydrology and Water Quality).

Further, as described under Impact 3.15-2 above, SDIA is committed to reducing water consumption, which would be furthered by water conservation strategies implemented as part of the proposed project, including the SAN Stormwater Capture and Reuse System. A reduction in water consumption, such as through the use of ultra-low flow water fixtures, would reduce the amount of wastewater entering the sewer system.

Therefore, as described above, implementation of the proposed project would not exceed wastewater treatment requirements of the San Diego RWQCB or result in the construction of new treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. As such, this would be a ***less than significant impact*** for construction and operation.

3.15.6.3.1 Mitigation Measures

No mitigation is required for construction or operations.

3.15.6.3.2 Significance of Impact After Mitigation

As indicated above, no mitigation is required relative to this impact. The project would result in a ***less than significant impact*** for construction and operations.

3.15.6.4 Impact 3.15-4

Summary Conclusion for Impact 3.15-4: The proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals or not comply with federal, state, and local management and reduction statutes and regulations related to solid waste. As such, and as further described below, this would be a *less than significant impact* for construction and operation.

3.15.6.4.1 Construction

The proposed project would result in a temporary increase in the generation of construction and demolition debris during construction activities, which would include bulky, heavy materials, such as concrete, wood, metals, glass, and salvaged building components. The greatest amount of solid waste associated with project construction would be generated during the demolition process. As shown in Table 3.15-5 below, over all phases of the proposed project, approximately 985,500 square feet of existing structures and 6,733,000 square feet of surface elements (asphalt/hardscape) would be demolished. As shown in Table 3.15-5, the greatest amount of demolition (approximately 56 percent of the total amount) would occur during Phase 1a. Green waste and excavated soil would also be generated. While it is anticipated that some soil would be reused on-site, the remaining materials would be hauled off-site for recycling/reuse or disposal in a landfill. Green waste would be separated and diverted from landfills through recycling, reuse, and composting.

The USEPA's report Characterization of Building-Related Construction and Demolition Debris in the United States,⁷¹ found an average rate of 155 pounds (0.078 tons) of demolition debris

⁷¹ U.S. Environmental Protection Agency, Municipal and Industrial Solid Waste Division, Office of Solid Waste. Characterization of Building-Related Construction and Demolition Debris in the United States. Report No. EPA530-R-98-010. Prepared by

generated per square feet of building area based on an average rate associated with demolition and major renovations of 23 non-residential buildings (including industrial buildings, office buildings, institutional building, cold storage, and a warehouse). As shown in Table 3.15-5 below, at a generation rate of 0.078 tons of demolition debris per square foot, demolition of the structures alone would generate a total of 76,869 tons of debris throughout the construction period from 2021 to 2035.

Based on the waste management reporting of previous demolition activities at SDIA, solid waste generation associated with demolition of surface elements is estimated to be 92 pounds (0.048) for landside surface elements (i.e., airport circulation roads and parking lots) and 184 pounds (0.096 tons) for airside surface elements (i.e., taxiway and aircraft apron) because airside asphalt is much thicker than conventional pavement. As shown in Table 3.15-5 below, at a generation rate of 0.048 tons and 0.096 tons of demolition debris per square foot for landside and airside surface elements respectively, demolition of the surface elements alone would generate a total of 486,624 tons of solid waste over the construction period from 2021 to 2035.

Table 3.15-5: Estimated Solid Waste Generation During Demolition by Phase

Facility		Approximate Area (square feet)	Estimate Weight of Solid Waste Generated (tons)
Phase 1a			
Phase 1a - Buildings Total		335,500	26,169
Phase 1a - Surface Elements Total	Landside	2,253,000	108,144
	Airside	1,715,000	164,640
	Total	3,968,000	272,784
Phase 1a – Total		4,303,500	298,953
Phase 1b			
Phase 1b - Buildings Total		300,000	23,400
Phase 1b - Surface Elements Total	Landside	790,000	37,920
	Airside	710,000	68,160
	Total	1,500,000	106,080
Phase 1b – Total		1,800,000	129,480
Phase 2a			
Phase 2a - Buildings Total		0	0
Phase 2a - Surface Elements Total	Landside	285,000	13,680
	Airside	440,000	42,240
	Total	725,000	55,920
Phase 2a – Total		725,000	55,920
Phase 2b			
Phase 2b - Buildings Total		350,000	27,300
Phase 2b - Surface Elements Total	Landside	0	0
	Airside	0	51,840

Franklin Associates Prairie Village, KS under subcontract to TechLaw, Inc. June 1998. Available: https://www.epa.gov/sites/production/files/2016-03/documents/charact_bulding_related_cd.pdf.

Table 3.15-5: Estimated Solid Waste Generation During Demolition by Phase

Facility		Approximate Area (square feet)	Estimate Weight of Solid Waste Generated (tons)
	Total	540,000	51,840
Phase 2b – Total		890,000	79,140
PROJECT TOTAL			
<i>Project Total – Buildings</i>		<i>985,500</i>	<i>76,869</i>
<i>Project Total - Surface Elements</i>	<i>Landside</i>	<i>3,328,000</i>	<i>159,744</i>
	<i>Airside</i>	<i>3,405,000</i>	<i>326,880</i>
	<i>Total</i>	<i>6,733,000</i>	<i>486,624</i>
Grand Total		7,718,500	563,493

Source: CDM Smith, 2019.

Note:

See Table 2-3 in Chapter 2, Project Description, for a detailed table listing buildings and surface elements to be demolished in each subphase.

Some waste would be associated with new construction, such as trim scraps and green waste associated with installation of the landscaping; however, the amount of construction debris would be substantially less than would be generated during the demolition phase. Further, construction activities generally produce cleaner materials than demolition. USEPA's report Characterization of Building-Related Construction and Demolition Debris in the United States determined that on a per building basis, demolition waste quantities may be 20 to 30 times as much as construction debris. Minimal to no solid waste is anticipated associated with construction of surface elements. Therefore, assuming that building construction waste would be an average of 20 to 30 times less than demolition debris, solid waste generation associated with building construction is estimated to be 6.2 pounds (0.003 tons) per square foot. As shown in Table 3.15-6 below, construction of the building square footage would generate a total of 15,756 tons of solid waste over the construction period from 2021 to 2035.

Table 3.15-6: Estimated Solid Waste Generation During New Construction by Phase

Facility Type	Approximate Area (square feet)	Estimate Weight of Solid Waste Generated (tons)
Phase 1a		
Phase 1a - Buildings Total	2,472,000	7,416
Phase 1a - Surface Elements Total	2,859,300	-
Phase 1a – Total	5,331,300	7,416
Phase 1b		
Phase 1b - Buildings Total	1,680,000	5,040
Phase 1b - Surface Elements Total	950,000	-
Phase 1b – Total	2,630,000	5,040
Phase 2a		
Phase 2a - Buildings Total	850,000	2,550
Phase 2a - Surface Elements Total	520,000	-
Phase 2a – Total	1,370,000	2,550
Phase 2b		
Phase 2b - Buildings Total	250,000	750
Phase 2b - Surface Elements Total	560,000	-
Phase 2b - Total	810,000	750
TOTAL		
<i>Project Total – Buildings</i>	<i>5,252,000</i>	<i>15,756</i>
<i>Project Total - Surface Elements</i>	<i>4,889,300</i>	<i>-</i>
Grand Total	10,141,300	15,756

Source: CDM Smith, 2019.

Note:

See Table 2-4 in Chapter 2, Project Description, for a detailed table listing buildings and surface elements to be constructed in each subphase.

While the demolition and construction would be required to meet a minimum 50 percent diversion rate required under AB 939, SDIA policies and requirements would mandate a higher diversion rate. The sustainability objectives for the T1 Replacement, as identified in the San Diego International Airport Terminal 1 Replacement Program PDD that addresses the design and construction of the replacement T1, are to achieve diversion of 90 percent of inert material (i.e., material not subject to decomposition such as concrete and asphalt) and to achieve diversion of 75 percent of the remaining construction waste produced by the project.⁷² The construction contractor would be contracted to conform to the diversion rates identified in the PDD and to submit monthly construction waste and recycling amounts.⁷³ Table 3.15-7 below shows the amount of solid waste estimated to be generated during both demolition and construction for each phase of the proposed project. Assuming the required minimum diversion rate of 75 percent for general construction waste for demolition and construction of building square footage and the

⁷² San Diego County Regional Airport Authority. San Diego International Airport Terminal 1 Replacement Program - Program Definition Document. Chapter E, Environmental Sustainability & Compliance (draft). January 31, 2019.

⁷³ San Diego County Regional Airport Authority. San Diego International Airport Terminal 1 Replacement Program - Program Definition Document. Chapter E, Environmental Sustainability & Compliance (draft). January 31, 2019.

minimum 90 percent diversion rate for surface elements (i.e., inert material such as asphalt and concrete), the total amount of solid waste that would be generated over the 15-year construction period would be 71,818 tons, which averages to 5,130 tons per year.

Table 3.15-7: Total Estimated Construction Waste Generation – Construction, Demolition and Recycling

Project Phase	Total Amount Generated (tons)	Mandated Rate of Recycling (percent)	Estimated Amount of Landfill Disposal (tons)
Phase 1a			
Demolition			
Buildings	26,169	75	6,542
Surface Elements	272,784	90	27,278
Construction			
Buildings	7,416	75	1,854
Surface Elements	0	90	0
Total	306,369		35,675
Phase 1b			
Demolition			
Buildings	23,400	75	5,850
Surface Elements	106,080	90	10,608
Construction			
Buildings	5,040	75	1,260
Surface Elements	0	90	0
Total	134,520		17,718
Phase 2a			
Demolition			
Buildings	0	75	0
Surface Elements	55,920	90	5,592
Construction			
Buildings	2,550	75	638
Surface Elements	0	90	0
Total	58,470		6,230
Phase 2b			
Demolition			
Buildings	27,300	75	6,825
Surface Elements	51,840	90	5,184
Construction			
Buildings	750	75	188
Surface Elements	0	90	0
Total	79,890		12,197
TOTAL			
<i>Project Total – Buildings</i>	<i>92,625</i>	<i>75</i>	<i>23,156</i>
<i>Project Total - Surface Elements</i>	<i>486,624</i>	<i>90</i>	<i>48,662</i>
Grand Total	579,249		71,818

Source: CDM Smith, 2019.

This waste generated during demolition and construction would result in an incremental and temporary increase in solid waste disposal at landfills and other waste disposal facilities, occurring throughout the 15-year construction period. Debris that is not reused on-site would be trucked from the site for disposal at any of the area landfills that accept and/or recycle construction/demolition materials including Sycamore, Otay, or Miramar landfills. As described in Section 3.15.4.3, counties in California are required to plan for maintaining 15 years of countywide landfill disposal capacity based on projected generation rates. The landfills in San Diego County have sufficient capacity to accommodate projected solid waste generation over the next 15 years and beyond - through 2052⁷⁴ - and, as described in Section 3.15.4.3, the projected average solid waste disposal in San Diego County is approximately 1,056,873 tons below the annual capacity of 3,415,000 tons estimated to be available after 2030,⁷⁵ which is well above the estimated average of 5,130 per year of construction waste generated by the proposed project over 15 years. Additionally, landfills in San Diego County are also not reaching their permitted daily capacity.⁷⁶ Therefore, given that adequate capacity is available in San Diego County to handle the projected solid waste generation during the project construction period and beyond, temporary solid waste generation associated with construction of the proposed project would not create a need for additional solid waste disposal facilities.

As discussed in Section 3.9, Hazards and Hazardous Materials, the existing buildings to be demolished/modified contain asbestos and may also contain lead-based paint. The San Diego County Air Pollution Control District (SDAPCD) and Department of Toxic Substances Control require the abatement of asbestos-containing materials (SDAPCD Rule 1206) and removal or stabilization of lead-based paint prior to demolition or renovation. Local landfills, such as Otay Landfill and Miramar Landfill, are authorized to accept some hazardous building materials including asbestos-containing materials and lead-based paint. These materials, and all hazardous building materials, would be handled, transported, and disposed of in accordance with applicable laws and regulations by a certified hazardous materials handler. Compliance with the City of San Diego Lead Hazard Control Ordinance is also required.

As also discussed in Section 3.9, Hazards and Hazardous Materials, contaminated soil is known to exist at the project site. It is anticipated that the contaminated soils would be encapsulated on-site; however, should any excavation and removal be required during or prior to site development, this would occur in accordance with applicable regulatory requirements, such as the federal Hazardous Materials Transportation Act, the Occupational Safety and Health Act, and the state Hazardous Waste Control Law. Such wastes would be disposed of at a local landfill permitted to accept such wastes, such as Sycamore, Otay, or Miramar landfills, which are authorized to accept certain types

⁷⁴ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

⁷⁵ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

⁷⁶ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

of contaminated soils (i.e., petroleum hydrocarbon-impacted soils with hydrocarbon concentrations below specified limits).

As described above, there is adequate capacity available in San Diego County to handle projected solid waste generation during the project construction period and beyond and, thus, temporary solid waste generation associated with construction of the proposed project would not create a need for additional solid waste disposal facilities. Further, as described above, the target diversion rate for the proposed project is greater than the minimum required for construction projects; therefore, the construction of the proposed project would not conflict with policies and objectives to reduce the amount of solid waste disposed in landfills.

Construction of the proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals or not comply with federal, state, and local management and reduction statutes and regulations related to solid waste; therefore, this would be a ***less than significant impact*** for construction.

3.15.6.4.2 Operations

Operation of the proposed project would generate the typical range of recyclable and non-recyclable waste that are currently generated on-site associated with airport visitors and employees, airport tenants such as airlines, cargo handlers, caterers, flight service operators, concessionaires, service- and aviation-related support businesses, and green waste (i.e., tree trimmings) associated with landscape maintenance activities. The amounts of waste generated could increase, associated with an increase in employees and concessions, as well as with passenger increase, and the growth in flights and deplaned waste (waste removed from passenger aircraft⁷⁷), which is projected to occur whether or not the proposed project is implemented.

As described in Section 3.15.4.3 (Table 3.15-2), total solid waste generated at SDIA in FY 2017 (July 1, 2016 through June 30, 2017) was 18,538 tons (including construction waste and recycling, landfill disposal, and hazardous waste for all operations at SDIA except for waste from international flights), including approximately 3,031 tons of non-construction waste that is recycled and disposed of at landfills. As shown in Table 3.15-8, approximately 760.74 tons per year (2.08 tons per day) of solid waste is estimated to be generated by the square footage that would be demolished under the proposed project based on CalEEMod default data using solid waste annual waste disposal rates from the California Department of Resources Recycling and Recovery (CalRecycle) data for individual land uses.

⁷⁷ Waste from international flights (except Canada) is processed separately as it could potential introduce plant pests and disease.

Table 3.15-8: Estimated Solid Waste Generation Associated with Building Square Footage to be Demolished

Land Use ^{1,2}	Building Area to be Demolished (sq. ft.)	Generation Rate – Tons /1000 sq.ft./Year	Tons Per Day ^c	Tons Per Year ³
Terminal	686,000	0.93	1.75	637.98
General Office	132,000	0.93	0.34	122.76
Total			2.08	760.74

Demand Factors source: CalEEMod. Appendix D Default Data, Table 10.1, Solid Waste Disposal Rates. October 2017.

Notes:

1. Land use types used to calculate solid waste generation:

Office – General Office Building

Terminal – Office Park (includes general offices and support services such as restaurants and service stations)

2. Approximately 79,000 square feet of cargo uses, 75,000 square feet of maintenance uses, and 10,000 square feet of office uses would be demolished within the new T1 footprint. These uses would be consolidated into new cargo facilities to be developed separate from the proposed project. Although the consolidation of the uses is expected to result in a small reduction in solid waste generation, because these cargo, maintenance, and office uses would be maintained at SDIA, the solid waste generation associated with operation of these uses is assumed to stay the same with implementation of the proposed project. Solid waste generation associated with the cargo, maintenance, and office uses to be demolished is estimated to be 70.5 tons per year (0.19 tons per day), 301.78 tons per year (0.83 tons per day), and 9.3 tons per year (0.03 tons per day), respectively, or a total of 381.58 tons per year (1.05 tons per day).

3. Totals may reflect rounding.

Abbreviation: sq.ft. – square foot

Table 3.15-8 provides an estimate of solid waste that would be generated associated with the square footage to be constructed based on CalEEMod default data using solid waste annual waste disposal rates from CalRecycle data for individual land uses. As shown in Table 3.15-9, approximately 2,335.80 tons per year (6.4 tons per day) would be generated.

Table 3.15-9: Estimated Solid Waste Generation Associated with New Construction

Land Use ^{1, 2, 3}	New Construction (sq. ft.)	Generation Rate – Tons /1000 sq.ft./Year	Tons Per Day ⁴	Tons Per Year ⁴
Terminal	1,910,000	0.93	4.87	1,776.30
Office	150,000	0.93	0.38	139.50
Commercial Development Opportunity	400,000	1.05	1.15	420.00
Parking Structure	2,780,000	0.0 ^b	0	0
Total			6.40	2,335.80

Demand Factors source: CalEEMod. Appendix D Default Data, Table 10.1, Solid Waste Disposal Rates. October 2017.

Notes:

1. Land use types used to calculate solid waste generation:

Terminal – Office Park (includes general offices and support services such as restaurants and service stations)

Office – General Office Building

Commercial Development Opportunity – Regional Shopping Center (integrated group of commercial establishments)

Parking Structure – Enclosed Parking Structure with Elevator (includes lighting and ventilation and more than one story)

2. Operation of the 12,000 square-foot expansion of the CUP would not generate solid waste and is not listed in the table above.

3. Solid waste generation factors are associated with use that generates the solid waste and not the location where the wastes are deposited for disposal. Thus, while users of the proposed parking structure may deposit trash in receptacles at the parking structure, the parking structure use itself would not be an independent solid waste generator. Thus, the solid waste generation rate for the parking structure is assumed to be “0.”

4. Totals may reflect rounding

Abbreviation: sq.ft. – square foot

This increase in solid waste generation would be partially offset by the amount of square footage to be demolished as part of the proposed project. As presented in Table 3.15-9 above, the reduction of existing square footage would result in a reduction of 760.74 tons per year (2.08 tons per day) of solid waste generation. Therefore, the proposed project would result in a net increase of approximately 1,575.06 tons per year (4.32 tons per day) of solid waste generation over existing conditions. Based on the current solid waste generation of approximately 3,933 tons of non-construction waste that is recycled and disposed of at landfills, with implementation of the proposed project, Airport-wide solid waste generation would be approximately 5,508.06 tons per year (15.09 tons per day) (including both material to be recycled and to be disposed of in landfills). As described below, with continued and expanded implementation of solid waste landfill diversion programs, including recycling programs and food waste diversion program, the amount of solid waste disposed in landfills is expected to be less than 5,508.06 tons per year (15.09 tons per day). Further as previously discussed, the landfills in San Diego County are far from reaching their annual or daily permitted capacity and, thus, they have sufficient capacity to accommodate projected solid waste generation within San Diego County through 2052.⁷⁸ Average disposal rates through 2030 are approximately 3,600,358 tons below the available annual capacity, and approximately

⁷⁸ County of San Diego, Department of Public Works. San Diego County Five-Year Review Report of the Countywide Integrated Waste Management Plan. January 25, 2018. Available: https://www.sandiegocounty.gov/content/dam/sdc/dpw/SOLID_WASTE_PLANNING_and_RECYCLING/Files/2.%20Five-YearReview-%20Final.pdf.

1,056,873 tons below the available annual capacity after 2030. Therefore, the increase of approximately 5,508.06 tons per year of solid waste associated with operation of the proposed project could be accommodated at County landfills and other solid waste disposal/recycling facilities both before and after 2030 and would not create a need for additional solid waste disposal facilities.

Existing programs at SDIA to increase recycling and divert waste from landfills identified in Section 3.15.4.3.1, such as the food waste diversion program and green waste recycling program, would continue to be implemented under the proposed project. Additionally, in alignment with SDIA's diversion targets, the City of San Diego Zero Waste Plan,⁷⁹ and the environmental sustainability objectives for the T1 Replacement, the proposed project design would include the following as identified in the San Diego International Airport Terminal 1 Replacement Program PDD that addresses the design and construction of the replacement T1:⁸⁰

- Allocation of space and design of facilities for various waste streams, including organics and recyclables
- Accommodation of space for co-located/adjacent receptacles within T1 to ensure a one to one ratio of landfill, recycling, and potentially organics bins for airside and landside waste receptacles, signage, separation, and diversion facilities
- Incorporation of strategies to facilitate waste diversion, such as:
 - Design to reduce pre-consumer organic waste from tenant spaces (e.g., kitchen waste)
 - Design to reduce post-consumer organic waste, including education signage sorting
 - Design to ease measurement and reporting of diversion rates
 - Accommodate space for reusable plates/cutlery and other waste-reducing strategies in tenant spaces
 - Provide hydration/waterfill stations in terminals
 - Accommodate space for liquids disposal at the security line and at the Transportation Security Administration (TSA) Checkpoint (post-security line)
 - Design to reduce restroom paper towel use (i.e., use of sink integrated air dryers, paper towel-only receptacle for paper towel composting)

Incorporation of the programs identified above would ensure that with implementation of the proposed project, SDIA would continue to promote and expand recycling and waste diversion and comply with solid waste policies and objectives aimed at limiting the amount of waste deposited in landfills. Further, as described in Section 3.15.4.3 above, the landfills in San Diego County have sufficient daily and annual capacity to accommodate an increase in solid waste generation, as well

⁷⁹ City of San Diego, Environmental Service Department. City of San Diego Zero Waste Plan. June 2015. Available: <https://www.sandiego.gov/sites/default/files/legacy/mayor/pdf/2015/ZeroWastePlan.pdf>.

⁸⁰ SDCRAA. San Diego International Airport Terminal 1 Replacement Program - Program Definition Document. Chapter E, Environmental Sustainability & Compliance (draft). January 31, 2019.

as accommodate county-wide projected solid waste generation through 2035 and beyond. Therefore, operation of the proposed project would not create a need for additional solid waste disposal facilities.

Operation of the proposed project would not result in a net increase in project-related solid waste generation in excess of state or local standards, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Further, the proposed project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste; therefore, this would be a ***less than significant impact*** for operations.

3.15.6.4.3 Mitigation Measures

No mitigation is required for construction or operations.

3.15.6.4.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required relative to this impact. The project would result in a ***less than significant impact*** for construction and operations.

3.15.6.5 Impact 3.15-5

Summary Conclusion for Impact 3.15-5: The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. As such, and as further described below, this would be a *less than significant impact* for construction and operation.

3.15.6.5.1 Construction

Transportation Related Fuel

Energy (primarily in the form of diesel fuel) would be used during construction of the proposed project by off-road diesel-powered construction equipment, and on-road diesel-powered delivery and haul trucks. Additional fuel (primarily in the form of gasoline) would be used during construction by worker vehicles traveling to and from the project site.

Construction of the proposed project would result in the consumption of approximately 3,439,927 gallons of diesel fuel and 353,115 gallons of gasoline across all construction years. Fuel usage was derived from the GHG emissions calculated for each year of construction activity. GHG emissions for each year and construction source were multiplied by USEPA carbon content factors corresponding to the predominant fuel type of the source to determine corresponding fuel consumption.⁸¹ Construction-related fuel consumption is detailed in Table 3.15-10.

⁸¹ U.S. Environmental Protection Agency (USEPA). Emission Factors for Greenhouse Gas Inventories, March 9, 2018. Available: https://www.epa.gov/sites/production/files/2018-03/documents/emission-factors_mar_2018_0.pdf.

Table 3.15-10: Fuel Consumption During Construction

Year	Gallons of Diesel Fuel	Gallons of Gasoline Fuel
2021	347,369	55,394
2022	342,456	53,932
2023	338,448	52,329
2024	619,467	34,424
2025	237,031	33,475
2026	236,310	32,491
2027	242,906	17,418
2028	242,443	17,045
2029	240,609	16,673
2030	202,765	16,375
2031	78,704	4,833
2032	78,370	4,765
2033	78,036	4,698
2034	77,683	4,653
2035	77,330	4,609
Total	3,439,927	353,115

Demand Factor Source: USEPA Final Mandatory Reporting of Greenhouse Gases Rule Table C-1. October 2009.

The proposed project would comply with federal establishment of efficiency standards for cars, trucks, medium- and heavy-duty engines, and construction equipment, as well as idling limits for construction equipment required by the California Air Resources Board Regulation for In-Use Off-Road Diesel-Fueled Fleets (see Section 3.3, Greenhouse Gases and Climate Change, for more information). Construction Traffic Management Program described in Section 2.7.2 in Chapter 2, Project Description, could potentially reduce the fuel usage for on-road equipment used during construction activities by measures designed to improve traffic flow and minimizing delays, such as minimizing construction worker and truck trips during a.m. and p.m. peak hours, informing motorists about detours, enforcing delivery times and routes, and monitoring traffic conditions.

Electricity and Natural Gas Demand

Electricity and natural gas would also be used during construction, associated primarily with the use of electric power tools and compressed natural gas used in construction equipment. These energy expenditures would be relatively small and temporary in nature, lasting only the duration of construction for each phase of the project.

Construction would not result in substantial waste or inefficient use of energy, because the construction contractor would be contracted to conform to the applicable construction-related environmental and sustainability goals identified for the proposed project in the PDD⁸² and STEP.⁸³ This includes utilizing low- and zero-emitting equipment during construction activities, whenever

⁸² San Diego County Regional Airport Authority. San Diego International Airport Terminal 1 Replacement Program - Program Definition Document. Chapter E, Environmental Sustainability & Compliance (draft). January 31, 2019.

⁸³ San Diego International Airport. Strategic Energy Plan – An Integrated Approach to Energy Resiliency. October 2017. Available: http://www.san.org/Portals/0/Documents/Environmental/SAN_STEP_103017.pdf.

possible, and implementing specific best practices, such as using alternative fuel vehicles, emphasizing clean-burning diesel engines, implementing a construction employee shuttle service or rideshare, and using electrical service drops in place of temporary fuel-burning generators.⁸⁴ Additionally, green construction methods and equipment would be utilized to meet performance thresholds and benchmarks developed under third-party certifications (i.e., LEED and Envision).

Summary

As described above, SDIA sustainability policies and construction contracts include provisions that would contribute to reduced fuel use and energy use during construction. Therefore, the proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction, and the impact would be ***less than significant***.

3.15.6.5.2 Operations

During the operational phase, the proposed project would consume energy in the form of electricity, natural gas, and transportation related fuels.

Transportation Related Fuel

Employees, vendors, and occupants of the proposed project would operate vehicles resulting in the generation of vehicle trips to and from the project site. This would result in the consumption of energy in the form of gasoline and diesel fuels over the life of the proposed project. Vehicle trips associated with operation of the proposed project were estimated in the project traffic study (Appendix R-H of this Recirculated Draft EIR). Similar to construction worker trips and other construction fuel usage, fuel consumption from worker and vendor trips are estimated by converting emissions of CO₂ to gallons of fuel using carbon content conversion factors corresponding to the source's predominant fuel type.

Calculations for annual mobile source and equipment fuel consumption for existing conditions and the proposed project are provided in Table 3.15-11 and Table 3.15-12, respectively. Table 3.15-11 shows the difference in diesel, gasoline, and jet fuel demand based on implementation of the proposed project. As shown in Table 3.15-12, jet fuel and diesel consumption are expected to increase. Gasoline consumption is expected to decrease as vehicular fuel efficiency standards increase, as discussed further in Section 3.3, Greenhouse Gases and Climate Change.

⁸⁴ San Diego County Regional Airport Authority. San Diego International Airport Terminal 1 Replacement Program - Program Definition Document. Chapter E, Environmental Sustainability & Compliance (draft). January 31, 2019.

Table 3.15-11: Existing Mobile Source and Equipment Fuel Consumption

Source	Fuel Type	Fuel Consumption (gallons)
Aircraft	Jet A	25,590,154
APUs	Jet A	228,000
GSE	Diesel	1,184,231
Motor Vehicles	Gasoline	6,313,667

Demand Factor Source: USEPA Final Mandatory Reporting of Greenhouse Gases Rule Table C-1. October 2009.

Abbreviations: APU – Auxiliary Power Unit; GSE – Ground Support Equipment

Table 3.15-12: Proposed Project Mobile Source and Equipment Fuel Consumption

Year	Source	Fuel Type	Fuel Consumption (gallons)	Change Compared to Existing Conditions
2024	Aircraft	Jet A	29,262,872	3,672,718
	APUs	Jet A	256,923	28,923
	GSE	Diesel	1,221,450	37,218
	Motor Vehicles	Gasoline	6,377,107	63,440
2026	Aircraft	Jet A	30,844,513	5,254,359
	APUs	Jet A	264,615	36,615
	GSE	Diesel	1,351,518	167,287
	Motor Vehicles	Gasoline	6,955,695	642,027
2030	Aircraft	Jet A	34,046,154	8,456,000
	APUs	Jet A	269,026	41,026
	GSE	Diesel	1,313,320	129,089
	Motor Vehicles	Gasoline	6,793,850	480,182
2035	Aircraft	Jet A	40,589,026	14,998,872
	APUs	Jet A	321,949	93,949
	GSE	Diesel	1,319,785	135,553
	Motor Vehicles	Gasoline	5,808,884	-504,784
2050	Aircraft	Jet A	42,817,231	17,227,077
	APUs	Jet A	350,462	122,462
	GSE	Diesel	1,176,396	-7,835
	Motor Vehicles	Gasoline	5,087,358	-1,226,310

Demand Factor Source: U.S. Environmental Protection Agency. Final Mandatory Reporting of Greenhouse Gases Rule Table C-1. October 2009.

Abbreviations: APU – Auxiliary Power Unit; GSE – Ground Support Equipment

In the past decade, the vehicle fleet in southern California has evolved to incorporate larger quantities of energy efficient, and electric, equipment. The proposed project would include installation of additional electric vehicle charging stations to support and facilitate growing usage of electric vehicles. Further, the on-access roadway and T1 access road improvements are expected to improve circulation within SDIA, reducing shuttle trip distances from the Rental Car Center to the terminals, and alleviating congestion along Harbor Drive. As described in Section 3.14, Traffic and Transportation, vehicle miles traveled (VMT) are anticipated to be less than under existing conditions. Efforts by SDCRAA to encourage Transportation Network Companies (TNCs), such as

Uber and Lyft, to pick-up new passengers after dropping-off passengers at the terminals would further reduce overall VMT associated with airport traffic. The implementation of a shuttle service from the Old Town Transit Center to the Airport, as identified in Mitigation Measure MM-TDM-1, would also reduce overall VMT per Airport passenger. Reductions in VMT would also result in a reduction in consumption of transportation-related fuels. Additional measures that would reduce fuel use, such as increased use of alternative fuels, are described under *Energy Conservation Actions* below.

Demand for gasoline is ultimately fulfilled by oil refineries in the region. There are a total of 15 operating petroleum refineries in California with a capacity of approximately 2,000,000 barrels per stream day. This rate represents the maximum number of barrels of input that the distillation facilities can process within a 24-hour period, while running at full capacity with no allowance for down time.⁸⁵ Construction of the proposed project would require the use of approximately 353,115 gallons of gasoline and 3,439,927 gallons of diesel fuels throughout the 15-year construction period. Operation of the proposed project at buildout would require the use of approximately 5,808,884 gallons of gasoline and 1,319,785 gallons of diesel fuels per year. The 15 operable refineries in California have gasoline and diesel sources which would be sufficient to serve the construction and operational fuel needs of the proposed project. No additional capacity would be required as a result of the proposed project. Further, use of renewable and other alternative fuels in the United States and California is expected to continue to grow due to federal and state regulations mandating ever-increasing levels of renewable content in gasoline and diesel fuel, carbon reduction rules, and incentives for increasing alternative fuel consumption.⁸⁶

An increase in the number of aircraft arriving or departing SDIA would occur even if the proposed project was not implemented (i.e., due to future growth at SDIA projected to occur with or without the proposed project). Accordingly, the proposed project would not directly cause aircraft en route to or from SDIA to burn more fuel than the No Project Alternative. The proposed project would improve operational efficiency, by optimizing the airport layout. Under the proposed project, the majority of gates would be located immediately adjacent to the parallel taxiways (existing Taxiway B and proposed new Taxiway A), thus minimizing aircraft taxi times between gates and the airfield. Additionally, the apron improvements proposed along the north side of the new T1 concourse, as well as the provision of a new aircraft RON area to the east of the new concourse, would complement the realignment of Taxiway B and construction of a new Taxiway A proposed north and east of the new T1. The new gates and new configuration would result in reduced movement of aircraft at SDIA than under without project conditions. Additionally, because airlines would have reduced taxi times, operators would have less (or no) need to “shuffle” their planes in order to deal with a shortage of available gates. Thus, the new airport configuration and new gates may nominally reduce the amount of aviation fuel burned while taxiing. This would not significantly affect the ability of the existing aviation fuel system to service aircraft at the Airport. Additionally, air travel will likely become more efficient over time as technology improvements are implemented. This increasing efficiency in existing technologies would further reduce the per-unit

⁸⁵ U.S. Energy Information Administration. Number and Capacity of Petroleum Refineries. June 21, 2019.

⁸⁶ California Energy Commission. Final Staff Report Transportation Fuel Supply Outlook, 2017. October 4, 2017.

fuel consumption and GHG emissions of the transportation elements throughout the lifetime of the proposed project.

As described in Section 3.3, Greenhouse Gases and Climate Change, there are better aircraft movement characteristics (i.e., the taxi/idle times of aircraft operations under the proposed project are better [lower] than those under Without Project conditions) and comparatively better motor vehicle movements with development of the on-airport access road that would occur with the proposed project. Similarly to how these improvements would result in reduced amounts of GHG emissions associated with the proposed project as compared to Without Project conditions as identified in Section 3.3, it would also result in reduced fuel use.

Additionally, SDIA has already implemented programs to promote the conversion to and/or use of alternative fuel vehicles, which would be supported by the proposed project through mitigation measures identified in Section 3.3. These measures include installation of chargers for electric vehicles, conversion of additional GSE to alternative fuels, and designating 10 percent of new parking stalls for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles.

As described above, the proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy, or wasteful use of fuel during project operation.

Electricity and Natural Gas

As described in Section 3.15.4.4 (Table 3.15-3), total SDCRAA electricity use in 2017 was 165,734 million British thermal units (MMBtu) and natural gas consumption was 43,663 MMBtu. Use of solar power was 27,099 MMBtu.

During construction, approximately 1,011,500 feet of building square footage would be demolished. Tables 3.15-13 and 3.15-14 below show the approximate reduction in electricity and natural gas demand (respectively) associated with this demolition by applying CalEEMod electricity and natural gas generation factors by land use type to the square footage to be demolished. The CalEEMod demand factors applied are for representative land uses types that include similar types of uses to the square footage to be demolished (for example, as noted in Tables 3.15-15 and 3.15-16, the demand factor associated with general office uses is applied to the administrative office building square footage to be demolished). As shown in Tables 3.15-13 and 3.15-14 respectively, electricity demand would be reduced by 12,599,160 kWh, and natural gas demand would be reduced by 25,278,000 British thermal units (kBtu).

The demand factors reflect 2016 energy standards. However, the square footage to be demolished was constructed prior to 2016 under less stringent building code and energy standards and, therefore, the actual energy demand associated with the square footage to be demolished would be greater than shown in Tables 3.15-13 and 3.15-14.

Table 3.15-13: Electricity Demand Associated with Square Footage to be Demolished

Land Use ^{1,2}	Building Area to be Demolished (sq.ft.)	Demand Factor (kWh per sq.ft.) ³			Estimated Total Demand (kWh/year) ⁴
		Title 24 Sources	Non-Title 24 Sources	Non-Title 24 Lighting Sources	
Terminal	686,000	4,019,960	4,122,860	2,682,260	10,825,080
General Office	132,000	615,120	656,040	502,920	1,774,080
Total					12,599,160

Demand Factors source: CalEEMod. Appendix D Default Data, Table 8.1, Energy Use by Climate Zone and Land Use Type. October 2017.

Notes:

1. Land use types used to calculate electricity demand:

Office – General Office Building

Terminal – Office Park (includes general offices and support services such as restaurants and service stations)

2. Approximately 79,000 square feet of cargo uses, 75,000 square feet of maintenance uses, and 10,000 square feet of office uses would be demolished within the new T1 footprint. These uses would be consolidated into new cargo facilities to be developed separate from the proposed project. Although the consolidation of the uses and replacement of older construction with new more energy efficient construction is expected to result in a reduction in electricity demand and more efficient cargo movement due to the consolidation, because the cargo, maintenance, and office uses would be maintained at SDIA, the electricity demand associated with operation of these uses is assumed to stay the same with implementation of the proposed project. Electricity demand associated with these cargo, maintenance, and office uses to be demolished is estimated to be 381,490 kWh per year.

3. Different demand factors are used for the following:

1. The Title 24 demand factor accounts for energy use from systems covered by California Code of Regulations Title 24, Part 6, including heating, ventilating, and air conditioning (HVAC) system, water heating system, and some types of fixed lighting systems.

2. The Non-Title 24 demand factors account for sources not covered by Title 24, such as office equipment, appliances, and plug-ins.

3. The Lighting demand factors account for lighting not covered under Title 24.

4. Estimated total demand includes demand generated by Title 24, non-Title 24, and non-Title 24 lighting sources.

Abbreviations: sq.ft. – square feet; kWh – kilowatt hour

Table 3.15-14: Natural Gas Demand Associated with Square Footage to be Demolished

Land Use ^{1,2}	Building Area to be Demolished (sq.ft.)	Demand Factor (kBtu per sq.ft.) ^c		Estimated Total Demand (kBtu/year) ^d
		Title 24 Sources	Non-Title 24 Sources	
Terminal	686,000	17,836,000	4,802,000	22,638,000
General Office	132,000	2,112,000	528,000	2,640,000
Total				25,278,000

Demand Factors source: CalEEMod. Appendix D Default Data, Table 8.1, Energy Use by Climate Zone and Land Use Type. October 2017.

Notes:

1. Land use types used to calculate natural gas demand:

Office – General Office Building

Terminal – Office Park (includes general offices and support services such as restaurants and service stations)

2. Approximately 79,000 square feet of cargo uses, 75,000 square feet of maintenance uses, and 10,000 square feet of office uses would be demolished within the new T1 footprint. These uses would be consolidated into new cargo facilities to be developed separate from the proposed project. Although the consolidation of the uses and replacement of older construction with new more energy efficient construction is expected to result in a reduction in natural gas demand and more efficient cargo movement due to the consolidation, because the cargo, maintenance, and office uses would be maintained at SDIA, the natural gas demand associated with operation of these uses is assumed to stay the same with implementation of the proposed project. Natural gas demand associated with these cargo, maintenance, and office uses to be demolished is estimated to be 1,183,000 kBtu per year.

3. Different demand factors are used for the following:

i. The Title 24 demand factor accounts for energy use from systems covered by California Code of Regulations Title 24, Part 6, including heating, ventilating, and air conditioning (HVAC) system, water heating system, and some types of fixed lighting systems.

ii. The Non-Title 24 demand factors account for sources not covered by Title 24, such as office equipment, appliances, and plug-ins.

iii. The Lighting demand factors account for lighting not covered under Title 24.

4. Estimated total demand includes demand generated by Title 24, non-Title 24, and non-Title 24 lighting sources.

Abbreviations: sq.ft. – square feet; kBtu – British thermal unit

With the additional square footage being constructed and projected future growth in aviation activity that would occur with or without the proposed project, an increase in long-term electricity and natural gas demand would result.

Tables 3.15-15 and 3.15-16 apply CalEEMod generation factors to the new building square footage to be constructed to estimate the amount of electricity and natural gas demand (respectively) associated with the proposed project.

As shown in Table 3.15-15, the annual electricity demand associated with the new construction is estimated at 53,470,600 kWh (182,449 MMBtu) based on 2016 Title 24 requirements. As presented in Table 3.15-13 above, the demolition of existing square footage would result in a reduction of 12,599,160 kWh (42,900 MMBtu) of electricity demand. Therefore, the proposed project would result in a net increase of approximately 40,871,440 kWh (139,459 MMBtu) over existing conditions.

Table 3.15-15: Electricity Demand Associated with New Construction

Land Use ¹	New Construction (sq.ft.) ²	Demand Factor (kWh per sq.ft.) ³			Estimated Total Demand (kWh/year) ^{4,5}
		Title 24 Sources	Non-Title 24 Sources	Non-Title 24 Lighting Sources	
Terminal	1,910,000	11,192,600	11,479,100	7,468,100	30,139,800
Office	150,000	699,000	745,500	571,500	2,016,000
Commercial Development Opportunity	400,000	1,272,000	1,264,000	2,488,000	5,024,000
Parking Structure	2,780,000	10,897,600	528,200	4,865,000	16,290,800
Total					53,470,600

Demand Factors source: CalEEMod. Appendix D Default Data, Table 8.1, Energy Use by Climate Zone and Land Use Type. October 2017.

Notes:

- Land use types used to calculate electricity demand
 - Terminal – Office Park (includes general offices and support services such as restaurants and service stations)
 - Office – General Office Building
 - Commercial Development Opportunity – Regional Shopping Center (integrated group of commercial establishments)
 - Parking Structure – Enclosed Parking Structure with Elevator (includes lighting and ventilation and more than one story)
- Square footage associated with the 12,000 square-foot expansion of the CUP is not included in the calculation, as the new CUP square footage would accommodate increased CUP capacity and would not increase energy demand.
- Different demand factors are used for the following:
 - The Title 24 demand factor accounts for energy use from systems covered by California Code of Regulations Title 24, Part 6, including heating, ventilating, and air conditioning (HVAC) system, water heating system, and some types of fixed lighting systems.
 - The Non-Title 24 demand factors account for sources not covered by Title 24, such as office equipment, appliances, and plug-ins.
 - The Lighting demand factors account for lighting not covered under Title 24.
- Estimated total demand includes demand generated by Title 24, non-Title 24, and non-Title 24 lighting sources.
- Estimated electricity demand does not account for additional conservation measures that would be and are currently implemented by SDIA beyond those required by 2016 CALGreen.

Abbreviations: sq.ft. – square feet; kWh – kilowatt hour

However, it should be noted that the demand factors used to determine electricity and natural gas demand for the proposed project (as shown in Table 3.15-15) reflect 2016 energy standards. Therefore, the electricity demand presented above assumes compliance with existing 2016 regulations and does not account for additional energy demand reductions that would occur with implementation of supplemental voluntary energy conservation measures (such as the proposed project's compliance with LEED and Envision), more stringent energy conservation requirements that are likely to be in place when the project is under construction, and potential offset of the electricity demand that would be met by on-site sources such as solar power generation.

Additionally, implementation of the proposed project would result in infrastructure facilitating the replacement of existing fossil fuel powered shuttles with electric powered shuttles. This would result in a reduction in operational dependence of fossil fuels and would result in a small increase in annual electrical demand. This demand, based on annual VMT, is shown in Table 3.15-16.

Table 3.15-16: Electrical Demand Associated With Electric Bus Operation

Calendar Year	Bus VMT	Estimated Electrical Demand (kWh/year) ^a
2024	66,153	187,875
2026	104,152	295,792
2030	165,863	471,051
2035	170,528	484,300
2050	170,796	485,061

Source: CDM Smith, 2019.

As described in Section 3.15.4.4.1, SDG&E recently constructed a new electrical substation, the Vine Substation, that serves existing electricity demand and increases reliability and capability to meet projected electricity demand in the vicinity of SDIA and at SDIA. Also, as noted previously, SDG&E continually assesses projected demand and plans and operates accordingly. In response to a request for service, SDG&E provided a letter stating that that electric services can be made available to the proposed project from its existing system.⁸⁷ Therefore, the proposed project would not exceed the capacity of SDG&E to provide service. This service would be provided in accordance with the rules and regulations of PUD on file with and approved by the CPUC.

Further, the existing regulatory requirements and planning requirements set by the CPUC and the CEC are constantly assessing population growth, electricity demand, and reliability. The CEC is tasked with conducting assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety as required by Public Resources Code Section 25301(a).

Implementation of the proposed project would result in increased natural gas demand at the project site. As shown in Table 3.15-17 below, using CalEEMod generation factors, the annual natural gas demand at the project site is estimated at 66,830,000 kBtu (66,830 MMBtu) based on 2016 Title 24 requirements. As presented in Table 3.15-14 above, the demolition of existing square footage would result in a reduction of 25,278,000 kBtu (25,278 MMBtu) of natural gas demand. Therefore, the proposed project would result in a net increase of approximately 41,552,000 kBtu (41,552 MMBtu).

⁸⁷ Sanchez, Carlos. Customer Project Planner, SDG&E. Letter to SDIA: Airport Development Project (ADP) 3225 N. Harbor Drive San Diego International Airport Will Serve Letter – Gas &Electric Services. March 13, 2018.

Table 3.15-17: Natural Gas Demand Associated With New Construction

Land Use ^{1,2}	New Construction (sq.ft.)	Demand Factor (kBtu per sq.ft.) ³		Estimated Total Demand (kBtu/year) ^{4,5}
		Title 24 Sources	Non-Title 24 Sources	
Terminal	1,910,000	49,660,000	13,370,000	63,030,000
General Office	150,000	2,400,000	600,000	3,000,000
Commercial Development Opportunity	400,000	400,000	400,000	800,000
Parking Structure	2,780,000	0	0	0
Total				66,830,000

Demand Factors source: CalEEMod. Appendix D Default Data, Table 8.1, Energy Use by Climate Zone and Land Use Type. October 2017.

Notes:

- Land use types used to calculate natural gas demand:
 - Terminal – Office Park (includes general offices and support services such as restaurants and service stations)
 - Office – General Office Building
 - Commercial Development Opportunity – Regional Shopping Center (integrated group of commercial establishments)
 - Parking Structure – Enclosed Parking Structure with Elevator (includes lighting and ventilation and more than one story)
- Square footage associated with the expansion of the CUP is not included in the calculation, as the new CUP square footage would accommodate increased CUP capacity and would not increase energy demand.
- Different demand factors are used for the following:
 - The Title 24 demand factor accounts for energy use from systems covered by California Code of Regulations Title 24, Part 6, including heating, ventilating, and air conditioning (HVAC) system, water heating system, and some types of fixed lighting systems.
 - The Non-Title 24 demand factors account for sources not covered by Title 24, such as office equipment, appliances, and plug-ins.
 - The Lighting demand factors account for lighting not covered under Title 24.
- Estimated total demand includes demand generated by Title 24, non-Title 24, and non-Title 24 lighting sources.
- Estimated electricity demand does not account for additional conservation measures that would be and are currently implemented by SDIA beyond those required by 2016 CALGreen.

Abbreviations: sq.ft.– square feet; kBtu – British thermal unit

Implementation of the proposed project would result in additional natural gas demand associated with the operation of the expanded capacity CUP. This would result in an approximate increase of 9,363,600 kBtu in additional natural gas demand annually.

As with the demand factors used to determine electricity, the natural gas demand factors (as shown in Table 3.15-17) reflect 2016 energy standards. Therefore, the natural gas demand presented above assumes compliance with existing 2016 regulations and does not account for additional energy demand reductions that would occur with implementation of supplemental voluntary energy conservation measures (such as the proposed project's compliance with LEED and Envision), more stringent energy conservation requirements that are likely to be in place when the project is under construction, and potential offset of energy needs that would be met by on-site solar generation.

Similar to electricity demand, as described in Section 3.15.4.4.1, SDG&E and the CEC continually assess projected natural gas demand and plan and operate accordingly. Further, SDG&E has indicated that natural gas services can be made available to the proposed project.⁸⁸

Additionally, implementation of the proposed project would replace older, less energy efficient structures and facilities. The modernized T1 and other new construction would be required to comply with current state energy efficiency standards and regulations pursuant to CALGreen that would reduce long-term electricity and natural gas demand. These requirements would reduce wasteful, inefficient, and unnecessary consumption of energy over the long-term. Additional measures that would support energy conservation are described under *Energy Conservation Actions* below. Additionally, mitigation measures identified in Section 3.3, Greenhouse Gases and Climate Change, include requiring buildings within the proposed project be powered by 100 percent renewable electricity by 2024 through on-site generation resources, grid-delivered purchases, and/or renewable energy certificates, installation of ground power and pre-conditioned air units at every new terminal gate to allow aircraft to utilize the Airport's 100 percent renewable electricity supply when parked, and installation of roofing materials with solar reflection and thermal emittance specified in the voluntary measures under 2016 California Green Building Standards Code.

With the incorporation of energy conservation features identified herein and in Section 3.3, along with the inclusion of renewable sources in SDG&E and SDIA's energy mix, operation of the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of electricity.

Water and Wastewater

Electricity is indirectly needed to supply, treat, and convey water to SDIA and to treat wastewater generated at SDIA. The estimated average increase daily water demand for the proposed project, as determined by the WSA prepared for the proposed project, is estimated at 197,469 gallons per day (gpd) or 72 million gallons per year (mgy) in 2040.

The estimated amount of increase in wastewater generation associated with the proposed project is 177,746 gpd or 65 mgy in 2040 as compared to existing conditions. As shown in Table 3.15-18 below, an increase of 124,215 kilowatt hours per year (kWh/yr) in indirect electricity demand is expected to occur from wastewater generation.

Electricity demand for water-related uses is calculated by using the energy intensity provided in the 2006 report prepared for the CEC, *Refining Estimates of Water-Related Energy Use in California*.⁸⁹ As shown in Table 3.15-18, an increase of 799,920 kWh/yr in indirect electricity demand is expected to occur for water supply. Combined, indirect electricity demand for water and wastewater treatment and conveyance would require approximately 924,135 kWh/yr of electricity. The water conservation measures described under Impact 3.15-2, including reuse and capture of stormwater, would reduce indirect energy demand associated with water supply and

⁸⁸ Sanchez, Carlos. Customer Project Planner, SDG&E. Letter to SDIA: Airport Development Project (ADP) 3225 N. Harbor Drive San Diego International Airport Will Serve Letter – Gas & Electric Services. March 13, 2018.

⁸⁹ California Energy Commission. *Refining Estimates of Water-Related Energy Use in California*. Prepared by Navigant Consulting, Inc. December 2006.

wastewater treatment. Additional measures that would support energy conservation are described under *Energy Conservation Actions* below.

Table 3.15-18: Indirect Electricity Demand Associated with the Water Cycle

	Estimated Project Demand/ Generation Increase over Existing Conditions (mg)	Supply (kWh/mg)	Treatment (kWh/mg)	Distribution (kWh/mg)	Total (kWh/yr)
Water	72	9,727	111	1,272	799,920
Wastewater	65	-	1,911	-	124,215
Total					924,135

Demand factor source: California Energy Commission. Refining Estimates of Water-Related Energy Use in California. Prepared by Navigant Consulting, Inc. December, 2006.

Abbreviations: mg/y – million gallons per year; kWh/mg – kilowatt hours per million gallon; kWh/yr – kilowatt hours per year

Total Energy Consumption

Operation of the proposed project would result, both directly and indirectly, in energy consumption in the form of electricity, transportation fuels, and natural gas which would differ from the energy demand under existing conditions. The total operational energy demands of the proposed project at buildout and existing conditions are presented in Table 3.15-19.

Table 3.15-19: Total Project Energy Demand

	Transportation Related Fuel Consumption (gallons)				Electricity Demand (kWh)			Natural Gas Demand (kBtu)
	Jet A	Diesel	Gasoline	Electric Shuttles	Building-Related	Indirect Water Cycle	Total Demand	Building-Related
Existing Conditions ^{1,2}	25,818,154	1,184,231	6,313,667	0	12,599,160	N/A	12,599,160	25,278,000
Proposed Project	40,589,026	1,319,785	5,808,884	484,300	53,470,600	924,135	54,879,035	66,830,000
Difference	14,770,872	135,553	-504,783	484,300	40,871,440	924,135	42,279,875	41,552,000

Demand factor source: California Energy Commission. Refining Estimates of Water-Related Energy Use in California. Prepared by Navigant Consulting, Inc. December, 2006.

Notes:

- Existing conditions for building related electricity and natural demand is associated with building square footage to be demolished as part of the proposed project only.
- Water use is calculated for the increase associated with the proposed project only, and does not account for existing water use.

Abbreviations: mg/y – million gallons per year; kWh/mg – kilowatt hours per million gallon; kWh/yr – kilowatt hours per year

Energy Conservation Actions

While overall, as discussed above, energy use would increase with implementation of the proposed project as a result of increased square footage, SDIA is located in an urban area with existing infrastructure to serve the project and it would replace older, less water and energy efficient development with new construction. The new buildings would comply with the most current CALGreen requirements for water and energy efficiency. Additionally, as previously described,

SDCRAA's sustainability commitments would reduce the energy consumption associated with the proposed project and SDIA beyond the minimum state requirements. These additional measures would include features to support energy and water conservation and increase use of alternative fuels and renewable sources of electricity that are identified in SDCRAA's sustainable management policies and planning documents (such as the Water Stewardship Plan and Strategic Energy Plan).

Specifically, the Terminal 1 Replacement Program PDD identifies the following sustainable energy requirements for the T1 Replacement:⁹⁰

- Meet all Title 24 energy requirements
- Align the new T1 design with requirements defined in the STEP, such as:
 - Provide for energy sub-monitoring and active energy management based upon tenant lease lines and major systems energy consumption
 - Perform commissioning for all new facilities and plan for ongoing commissioning
 - Design energy distribution infrastructure for redundancy to service disruptions
 - Enable CUP expansion for future needs
- Provide Life Cycle Cost (LCC) justification for terminal design components and performance specifications that are unique and add costs above the norm
- Design for cyber security of energy infrastructure
- Incorporate lighting controls
- Ensure the new T1 is photovoltaic-ready in alignment with the STEP and to meet Title 24 requirements
- Develop a project option to install a roof-mounted solar photovoltaic system as part of the new terminal construction
- Meet minimum energy performance goals in building design

Although development plans for Phase 2 of the proposed project (i.e., the proposed "Stinger" and T2-East modifications) have not yet progressed to the point of having PDDs, it is anticipated that those future PDDs will include a similar Environmental Sustainability and Compliance chapter with similar energy-reducing features to those described above for Phase 1 of the proposed project, consistent with SDIA's sustainability policies and commitments.

In addition to the measures specified in the PDD for Phase 1, Mitigation Measures MM-AQ/GHG-1 through MM-AQ/GHG-10 identified in Section 3.2, Air Quality, and Section 3.3, Greenhouse Gases and Climate Change, to reduce air pollutant/GHG emissions for both phases of the proposed project

⁹⁰ San Diego County Regional Airport Authority. San Diego International Airport Terminal 1 Replacement Program - Program Definition Document. Chapter E, Environmental Sustainability & Compliance (draft). January 31, 2019.

would also have an added benefit of reducing energy associated with the proposed project. Specifically, requirements of Mitigation Measures MM-AQ/GHG-1 through MM-AQ/GHG-10 include (but are not limited to): (1) transitioning off-road GSE, which are owned and operated by airlines, to alternative fuels by 2024; (2) powering buildings within the project by 100 percent renewable electricity by 2024; (3) include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in 2016 CALGreen; (4) demonstrating achievement of at least LEED Silver certification (or equivalent green rating certification) for all new major facilities associated with the project; (5) designating 10 percent of new parking stalls for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles; (6) installing electric vehicle charging ports at three percent of new parking stalls and another three percent would be “EVSE-ready”; (7) extending the Airport’s current Commercial Ground Transportation Clean Vehicle Incentive Program past 2020; (8) transiting on-airport shuttles to electric vehicles (all-electric or plug-in hybrid); (9) providing new bicycle facilities (i.e., showers and lockers); and (10) implementing a parking cash-out program for SDCRAA employees. Additionally, see Table 3.2-17 in Section 3.2, Air Quality, for a comprehensive list of existing programs at SDIA, ADP design features, and ADP mitigation measures that would reduce GHG and other air pollutant emissions, as well as reduce reliance on fossil fuels, thereby reducing energy demand associated with the proposed project.

Summary

As described above, while the proposed project would result in increased energy demand, it would be located within an area that has existing energy and water available to serve it. It would comply with federal, state, and local regulations and policies reducing energy demand associated with building energy use, water demand, wastewater generation, vehicle fuels, and construction equipment, including CALGreen requirements and SDCRAA’s policies and requirements pertaining to energy conservation and sustainable design as discussed above. In addition, electricity supplied to the proposed project would be required to comply with California’s aggressive renewable portfolio standard. Therefore, the proposed project’s construction and operation would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy. Therefore, impacts would be ***less than significant***.

3.15.6.5.3 Mitigation Measures

No mitigation is required for construction or operations.

3.15.6.5.4 Significance of Impact After Mitigation

As indicated above, no mitigation is required relative to this impact. The project would result in a ***less than significant impact*** for construction and operations.

3.15.6.6 Impact 3.15-6

Summary Conclusion for Impact 3.15-6: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As such, and as further described below, this would be a *less than significant impact* for construction and operation.

The use of renewable energy and/or energy efficiency is a central component of many GHG reduction programs, including climate adaption plans, and other plans and policies supportive of sustainability goals. As such, and as described in Section 3.15.3, Regulatory Framework, and Section 3.15.4, Environmental Setting, above, there are numerous adopted state, regional, and local plans that include policies, strategies and other measures supportive of renewable energy and energy efficiency. This includes the City of San Diego CAP and SDCRAA's sustainability policies and commitments to implement policies and practices supportive of sustainable development, water conservation, and energy efficiency. In particular, SDCRAA has developed the STEP that addresses energy efficiency and conservation; on-site energy generation and storage; and enhanced monitoring of key energy metrics to ultimately allow SDIA to establish more dependable energy sources, while offsetting GHG emissions.

Additionally, the objectives for the proposed project support SDCRAA's commitments to energy efficiency. Specifically, as identified in Chapter 2, Project Description, a goal of the proposed project is to provide a plan that is fiscally and environmentally sustainable. One of the objectives to achieve this goal is for SDCRAA to continue to implement sustainability measures at the Airport. A second goal is to provide a plan that meets the aviation need of the San Diego region in a socially responsible manner. This includes an objective to implement airport improvements in a sustainable manner and consider the total cost of ownership including financial, environmental, and social costs.

As discussed throughout Section 3.15, the Terminal 1 Replacement Program PDD identifies project goals and requirements that are designed to achieve these project objectives and SDCRAA's overall sustainability.

The proposed project includes implementation of energy efficient features with a target to achieve third-party certification programs for sustainable design and construction (i.e., LEED and Envision), as described in greater detail under Impact 3.15-5. Energy conservation measures implemented as part of the proposed project, such as expanding solar power generation and increasing use of alternative fuels, would reduce energy use associated with the new construction and contribute to the on-going efforts to increase the overall energy efficiency at SDIA, as discussed in detail in Section 3.3, Greenhouse Gases and Climate Change. Further, as described under Impact 3.15-5 above, Mitigation Measure MM-AQ/GHG-2 requires that buildings within the proposed project would be powered by 100 percent renewable electricity by 2024.

This would be supportive of state, regional, and local efforts to increase use of renewable energy and improve energy efficiency. Therefore, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As such, this would be a *less than significant impact* for construction and operation.

3.15.6.6.1 Mitigation Measures

No mitigation is required for construction or operations.

3.15.6.6.2 Significance of Impact After Mitigation

As indicated above, no mitigation is required relative to this impact. The project would result in a *less than significant impact* for construction and operations.

3.15.7 Summary of Impact Determinations

Table 3.15-20 summarizes the impact determinations of the proposed project related to utilities, as described above in the detailed discussion in Section 3.15.6. Identified potential impacts are based on the significance criteria presented in Section 3.15.5, the information and data sources cited throughout Section 3.15, and the professional judgment of the report preparers, as applicable.

Table 3.15-20: Summary Matrix of Potential Impacts and Mitigation Measures Associated with the Proposed Project Related to Utilities

Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
Impact 3.15-1: Implementation of the proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. As such, this would be a <i>less than significant impact</i> for construction and operation.	Construction: Less than Significant Operation: Less than Significant	No mitigation is required	Construction: Less than Significant Operation: Less than Significant
Impact 3.15-2: Although the proposed project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. As such, this would be a <i>less than significant impact</i> for construction and operation.	Construction: Less than Significant Operation: Less than Significant	No mitigation is required	Construction: Less than Significant Operation: Less than Significant
Impact 3.15-3: The proposed project would not result in the determination by the wastewater treatment provider, which serves or may serve the project, that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments. As such, this would be a <i>less than significant impact</i> for construction and operation.	Construction: Less than Significant Operation: Less than Significant	No mitigation is required	Construction: Less than Significant Operation: Less than Significant

Table 3.15-20: Summary Matrix of Potential Impacts and Mitigation Measures Associated with the Proposed Project Related to Utilities

Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
Impact 3.15-4: The proposed project would not generate solid waste in excess of state or local standards, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals or not comply with federal, state, and local management and reduction statutes and regulations related to solid waste. As such, this would be a <i>less than significant impact</i> for construction and operation.	Construction: Less than Significant Operation: Less than Significant	No mitigation is required	Construction: Less than Significant Operation: Less than Significant
Impact 3.15-5: The proposed project would not result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. As such, this would be a <i>less than significant impact</i> for construction and operation.	Construction: Less than Significant Operation: Less than Significant	No mitigation is required	Construction: Less than Significant Operation: Less than Significant
Impact 3.15-6: The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. As such, this would be a <i>less than significant impact</i> for construction and operation.	Construction: Less than Significant Operation: Less than Significant	No mitigation is required	Construction: Less than Significant Operation: Less than Significant

3.15.7.1 Mitigation Measures

No mitigation is required for construction or operations.

3.15.8 Significant Unavoidable Impacts

There would be no significant and unavoidable impacts to utilities associated with construction and operation of the proposed project.