

5.17 UTILITIES AND SERVICE SYSTEMS

5.17.1 INTRODUCTION

This section describes the existing regulatory and environmental settings, and analyzes the Project's potential to cause significant environmental effects due to: relocation or construction of new or expanded utilities or service systems (i.e., water, wastewater, wastewater treatment, stormwater drainage, electric power, natural gas, and telecommunications facilities), the construction or relocation of which could cause significant environmental effects; have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years; result in a determination by the wastewater treatment provider which would serve the Project that it has adequate wastewater treatment capacity to serve the Project's projected demand in addition to the provider's existing commitments; generate solid waste in excess of State or local standard or in excess of the capacity local infrastructure, or otherwise impair the attainment of solid waste reduction goals; and noncompliance with solid waste management and reduction strategies and regulations. Where significant impacts remain despite compliance with the existing regulatory framework, feasible mitigation measures are recommended to avoid or reduce the Project's potentially significant environmental impacts.

Proposed General Plan

Proposed General Plan-related information in this section is based in part on the following information:

- *City of General Plan Update Proposed Conditions Infrastructure Report for Water, Sewer, Storm Drainage, and Water Quality*; see **Appendix 5.17 GP-1: Infrastructure Report**
- Utility Service Provider Questionnaires; see **Appendix 5.17 GP-2**

Barstow International Gateway (BIG)

BIG-related information on this section is based primarily on the following studies:

- *Barstow International Gateway Utility Assessment Technical Report*; see **Appendix 5.17 BIG-1: Utility Assessment Technical Report**
- Water Supply Assessment and Verification for Barstow International Gateway; see **Appendix 5.17 BIG-2: Water Supply Assessment**
- *Solar Farm Development Plan*; see **Appendix 5.17 BIG-3: Solar Farm Development Plan**

Summary of Findings - Proposed General Plan

Future development projects under the proposed General Plan would create additional demand for water and energy and would generate additional wastewater, solid waste and stormwater runoff. Implementation of projects consistent with the land uses described within the proposed General Plan, which are located outside the Golden State Water Company's (GSWC) service area, would require an extension of GSWC's service area. However, the existing infrastructure, service providers, and compliance

with federal, State, and local regulations are projected to meet future growth for the proposed General Plan area. In addition, the proposed General Plan includes policies related to land use, water quality, solid waste, water conservation, and utility coordination that would contribute to minimizing impacts to utilities and service systems. The construction impacts associated with new or expanded water, wastewater treatment, stormwater drainage, electric power, natural gas, or telecommunication facilities pursuant to the proposed General Plan buildout would result significant and unavoidable impacts concerning aesthetics, agricultural resources, air quality, cultural resources, geology and mineral resources, greenhouse gas emissions, noise and vibration, transportation, and tribal cultural resources. As growth occurs in the City, individual development may need to upgrade or improve City wastewater infrastructure, with the nature and scope of upgrades dependent on the development size, location, and timing, with the environmental impacts associated with these upgrades being analyzed as a part of the specific development. Development pursuant to the proposed General Plan would also have a less than significant impact on water supplies, would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, and would comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

Summary of Findings – Barstow International Gateway:

BIG construction and operations would require relocation/construction of water, wastewater, and stormwater conveyance infrastructure and utility infrastructure. As analyzed in resource-specific sections elsewhere in this EIR, impacts concerning aesthetics, air quality, cultural resources, noise and vibration, and tribal cultural resources would be significant and unavoidable, despite compliance with the established regulatory framework and implementation of the specified mitigation measures; see the respective sections of this EIR for more information about these impacts and measures proposed to mitigate these impacts. As such, BIG's proposed relocation/construction of water, wastewater, and stormwater conveyance infrastructure and utility infrastructure would result in a significant unavoidable impact.

BIG would procure non-potable water for construction from the existing groundwater water rights owned by BNSF with additional construction potable water needs procured through surrounding water purveyors via the payment of replacement costs for water usage above allowable limits. GSWC would meet BIG's construction potable water and operational water demand, which would be delivered within established allowances. Sufficient water supplies would be available to serve BIG and reasonably foreseeable future development.

The local wastewater treatment facility would have adequate capacity to serve BIG's projected construction and operational demands in addition to the wastewater treatment facility's existing commitments, resulting in a less than significant impact. Solid waste generated during BIG construction and operations would be within the capacity of the Barstow Sanitary Landfill and would not generate substantial amounts of waste or conflict with solid waste-related policies or regulations.

5.17.2 REGULATORY SETTING

5.17.2.1 Federal

Clean Water Act/National Pollutant Discharge Elimination System

The Clean Water Act (CWA) (33 U.S.C. § 1251 et seq.) establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. CWA § 402 establishes the National Pollutant Discharge Elimination System (NPDES), which regulates the discharge of pollutants from point sources. Title 40 Code of Federal Regulations (CFR) Part 503, Standards for the Use or Disposal of Sewage Sludge, establishes standards for the final use or disposal of sewage sludge generated during the treatment of domestic sewage.

Safe Drinking Water Act

The U.S. Environmental Protection Agency (U.S. EPA) administers the Safe Drinking Water Act, the primary federal law that regulates drinking water quality and establishes standards to protect public health and safety. The California State Water Resources Control Board (SWRCB) Division of Drinking Water implements the Safe Drinking Water Act and oversees public water system quality statewide. The SWRCB establishes legal drinking water standards for contaminants that could threaten public health.

Resource Conservation and Recovery Act (42 United States Code [U.S.C.] § 6901 et seq.) At the federal level, the principal agency regulating the generation, transport, treatment, storage, and disposal of “hazardous wastes” substances is the U.S. EPA, under the authority of the Resource Conservation and Recovery Act (RCRA). RCRA established an all-encompassing federal “cradle to grave” regulatory program for hazardous wastes that is the U.S. EPA administers. The U.S. EPA has delegated many of the RCRA requirements to the Department of Toxic Substances Control (DTSC). Title 42 of the United States Code § 6901 et seq. contains regulations for municipal solid waste landfills.

National Pollutant Discharge Elimination System

The CWA established the NPDES permit program to regulate municipal and industrial discharges to surface waters of the U.S., including discharges from municipal separate storm sewer systems (MS4). Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source stormwater runoff. NPDES permits generally identify effluent and receiving water limits on allowable concentrations and/or mass emissions of pollutants in the discharge; prohibitions on discharges not specifically allowed under the permit; and provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, self-monitoring, and other activities.

Under the NPDES program, all facilities that discharge pollutants into waters of the U.S. are required to obtain a NPDES permit. Requirements for stormwater discharges are also regulated under this program. In California, the SWRCB administers the NPDES permit program through the nine Regional Water Quality Control Boards (RWQCBs). The RWQCBs adopt and implement Water Quality Control Plans (Basin Plans), which recognize regional differences in natural water quality, actual and potential beneficial uses, and water quality problems associated with human activities.

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act of 1976 (Title 40 of the Code of Federal Regulations), Part 258, contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design (liners, leachate collection, run-off control, etc.), groundwater monitoring, and closure of landfills.

National Energy Policy

Established in 2001 by the National Energy Policy Development Group, the National Energy Policy is designed to help the private sector, and state and local governments promote dependable, affordable, and environmentally sound production and distribution of energy for the future. Key issues the energy policy addresses are energy conservation, repair and expansion of energy infrastructure, and ways of increasing energy supplies while protecting the environment.

Energy Policy Act of 2005

Passed by Congress in July 2005, the Energy Policy Act includes a comprehensive set of provisions to address energy issues. The Energy Policy Act includes tax incentives for energy conservation improvements in commercial and residential buildings, fossil fuel production and clean coal facilities, and construction and operation of nuclear power plants, among other things. Subsidies are also included for geothermal, wind energy, and other alternative energy producers.

Energy Independence and Security Act of 2007

Signed into law in December 2007, the Energy Independence and Security Act contains provisions designed to increase energy efficiency and the availability of renewable energy. The act contains provisions for increasing fuel economy standards for cars and light trucks, while establishing new minimum efficiency standards for lighting as well as residential and commercial appliance equipment.

Natural Gas Pipeline Safety Act of 1968

The Natural Gas Pipeline Safety Act of 1968 authorizes the United States Department of Transportation to regulate pipeline transportation of flammable, toxic, or corrosive natural gas and other gases as well as the transportation and storage of liquefied natural gas. The Pipeline and Hazardous Materials Safety Administration within the Department of Transportation develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's 2.6-million-mile pipeline transportation system. The regulations enacted under this act have been updated several times. The latest revision is dated May 2023 and includes additional safety regulations for gas transmission pipelines, including repair criteria, integrity management improvements, cathodic protection, and other inspection and maintenance procedures. The regulations are encoded in 49 Code of Federal Regulations, Part 192.

5.17.2.2 State

Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

The Cortese-Knox Hertzberg Act of 2000 (CKH Act) establishes procedures for local government changes of organization, including city incorporations, annexations to a city or special district, and city and special

district consolidations. Specifically, CKH Act § 56886.1 requires that, as applicable, changes in organization and reorganization must account for public utilities within 90 days of the filing of a certificate of completion. Public utilities must be provided and accounted for in accordance with Public Utilities Code § 216.

The CKH Act substantially amended the Cortese-Knox Local Government Reorganization Act of 1985 and further clarified the purpose and mission of Local Agency Formation Commissions (LAFCOs). LAFCOs are public agencies within each county with regulatory authority over local agency boundary changes and municipal service reviews. Among the stated legislative purposes, LAFCOs are to discourage urban sprawl, preserve open space and prime agricultural lands, efficiently provide government services, and encourage orderly formation and development of local agencies. Various laws have been enacted to further define LAFCO responsibilities and authority.

State Water Resources Control Board Wastewater Requirements

The SWRCB preserves, enhances, and restores the quality of California's water resources and ensures proper allocation and efficient use for the benefit of present and future generations. Wastewater generators must obtain a permit to discharge their wastewater. Pursuant to the federal CWA and California's Porter-Cologne Water Quality Control Act, the SWRCB and LRWQCB regulates wastewater discharges to surface waters through the NPDES program. Some wastewater discharges are exempt from federal NPDES requirements, but California law will still apply. Under California law, the SWRCB and LRWQCB require waste discharge requirements for some discharges, in addition to those subject to NPDES permits. Permits contain specific requirements that limit the pollutants in discharges. They also require dischargers to monitor their wastewater to ensure that it meets all requirements. Wastewater dischargers must maintain their treatment facilities, and treatment plant operators must be certified. The SWRCB and LRWQCB routinely inspect treatment facilities and strictly enforce permit requirements.

The SWRCB implements regulations to reduce the impact of wastewater sources on groundwater quality in accordance with State law (Assembly Bill [AB] 885) through its water quality control policy for siting, design, operation, and maintenance of on-site wastewater treatment systems (OWTS) (septic systems) (Resolution No. 2012-0032). This policy establishes a statewide, risk-based, tiered approach for the regulation and management of OWTS installations and replacements that have affected, or will affect, groundwater or surface water to a degree that makes it unfit for drinking water or other uses or cause a health or public nuisance condition. RWQCBs incorporated the standards established in the OWTS policy or standards that are more protective of the environment and public health into their water quality control plans. The State, RWQCBs, and local agencies (e.g., county and city departments and independent districts) oversee implementation.

Following the declaration of a state of emergency on July 15, 2014, due to drought conditions, the SWRCB adopted Resolution No. 2014-0038 for emergency regulation of statewide water conservation efforts. These regulations, which went into effect on August 1, 2014, were intended to reduce outdoor urban water use and persuade all California households to voluntarily reduce their water consumption by 20 percent. Water companies with 3,000 or more service connections were required to report monthly water consumption to the SWRCB. The SWRCB readopted the regulations several times, most recently

requiring local water agencies to implement Level 2 drought contingency plans. In March 2023, Governor Newsom announced the lifting of some of the drought restrictions following a wet winter, including the Level 2 demand reduction actions.

However, there are portions of the water conservation emergency regulations that remain in effect. These include wasteful water use practices that are still in effect: 1) the application of potable water to outdoor landscapes in a manner that causes excess runoff; 2) the washing of vehicles without an automatic shut-off nozzle; 3) the application of potable water to driveways and sidewalks; 4) the use of potable water in nonrecirculating ornamental fountains; and 5) the application of potable water to outdoor landscapes during and within 48 hours after at least 0.25 inch of rainfall. In addition, watering decorative grass in commercial, industrial, and institutional areas, including common areas of homeowners' associations is currently prohibited but this restriction may be lifted in the future. Urban water suppliers are still required to submit monthly water monitoring reports to the SWRCB.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act, which was passed in California in 1969 and amended in 2013, is the basic water quality control law for California. Under this act, the SWRCB has authority over State water rights and water quality policy. The act divided the State into nine regional basins, each under the jurisdiction of a RWQCB to oversee water quality on a day-to-day basis at the local and regional level. RWQCBs engage in a number of water quality functions in their respective regions. RWQCBs regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The Lahontan RWQCB (Region 6) has jurisdiction for monitoring and inspecting drinking water systems and enforcing regulations regarding water quality in the proposed General Plan area.

Sanitary Sewer Management Plan

On December 6, 2022, the SWRCB adopted Wastewater Discharge Requirements Order WQ 2022-0103-DWQ, which took effect June 2023 and supersedes Wastewater Discharge Requirements Order 2006-0003-DWQ. This order mandates all federal and State agencies, municipalities, counties, districts, and other public entities (enrollees) that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated sewer to a publicly owned treatment works facility in California to comply with the terms of the order. Order 2022-0103-DWQ also requires each enrollee to develop and implement a system-specific sewer management plan to facilitate proper funding and management of sanitary sewer systems. Sewer system management plans must include provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost/benefit analysis. Additionally, a sewer system management plan must contain a spill response plan that establishes standard procedures for immediate response to a sewer system overflow in a manner designed to minimize water quality impacts and potential nuisance conditions.

SWRCB General Construction Permit

Construction activities that disturb one or more acres of land that could impact hydrologic resources must comply with the requirements of the SWRCB Construction General Permit (Order WQ 2022-0057-DWQ;

NPDES No. CAS000002), which was adopted on September 8, 2022, and became effective on September 1, 2023. Under the terms of the permit, applicants must file Permit Registration Documents with the SWRCB prior to the start of construction. The Permit Registration Documents include a Notice of Intent, risk assessment, site map, SWPPP, annual fee, and a signed certification statement. The Permit Registration Documents are submitted electronically to the SWRCB via the Stormwater Multiple Application and Report Tracking System (SMARTS) website.

Applicants must also demonstrate conformance with applicable best management practices (BMPs) and prepare a SWPPP containing a site map that shows the construction site perimeter, existing and proposed buildings, lots, roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the project site. The SWPPP must list BMPs that would be implemented to prevent soil erosion and discharge of other construction-related pollutants that could contaminate nearby water resources. Additionally, the SWPPP must contain a weekly visual monitoring program and BMP inspections prior to, during, and after qualifying precipitation events. Water quality monitoring is also required with a schedule based on the risk level of the site.

Renewables Portfolio Standard Program

The Renewables Portfolio Standard Program requires retail sellers of electricity to increase their purchases of electricity generated by renewable sources and establishes a goal of having 20 percent of California's electricity generated by renewable sources by 2017. Subsequent legislation requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable energy resources by 2030. Increasing California's renewable supplies would diminish the State's heavy dependence on natural gas as a fuel for electric power generation. In 2018, SB 100 was signed into law, which again increases the RPS to 60 percent by 2030 and requires all the State's electricity to come from carbon-free resources by 2045 (CPUC, 2025).

Senate Bill 100

Senate Bill (SB) 100, the 100 Percent Clean Energy Act of 2018, makes it a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers by December 31, 2045. It also established RPS requirements for publicly owned facilities and retail sellers of 44 percent renewable energy by 2024, 50 percent by 2026, 52 percent by 2027, and 60 percent by 2030.

Senate Bill 1020

Senate Bill (SB) 1020, the Clean Energy, Jobs, and Affordability Act of 2022, requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent by 2040. Additionally, it requires all state agencies to procure 100 percent of electricity from renewable energy and zero-carbon resources by December 31, 2035.

Assembly Bill 75

Assembly Bill (AB) 75 was passed in 1999, and the State Agency Model Integrated Waste Management Act (Chapter 764, Statutes of 1999, Strom-Martin) took effect on January 1, 2000. The State Agency Model Integrated Waste Management Act requires State agencies to develop and implement an integrated

waste management plan. The act also mandates community service districts to provide solid waste services report disposal and diversion information to the city, county, or regional agency in which the community service district is located. The Act also requires all State agencies and large State facilities to divert at least 50 percent of solid waste from landfills after 2004, and that each State agency and large facility submit an annual report to California Department of Resources Recycling and Recovery (CalRecycle) summarizing its yearly progress in implementing waste diversion programs. Senate Bill 1016, signed into law in 2008, modified AB 75 to reduce overall disposal instead of diversion while instating the electronic filing of annual reports by local jurisdictions.

Integrated Waste Management Act

In response to the Resource Conservation and Recovery Act, AB 939 enacted the California Integrated Waste Management Act of 1989. It requires the State's counties and cities to prepare an integrated waste management plan, including a countywide siting element for each jurisdiction. Per Public Resources Code §§ 41700 through 41721.5, the countywide siting element estimates the total permitted disposal capacity needed for a 15-year period, or whenever additional capacity is necessary. The countywide siting elements must be updated by each operator and permitted by the Natural Resources Agency's Department of Resources Recycling every five years. AB 939 mandates local jurisdictions to meet solid waste diversion goals of 50 percent by 2000. Diversionary actions required by AB 939 were continued through subsequent legislation including SB 1322, which established State programs and further reinforced the State's procurement of recyclable materials. Assembly Bill 1826 further increases recycling efforts by requiring the contract or work agreement between a business and a gardening or landscaping service to require the organic waste generated by those services to comply with the requirements of this act.

Local Government Construction and Demolition Guide

SB 1374 assists jurisdictions with diverting construction and demolition (C&D) material, with a primary focus from CalRecycle. CalRecycle, which administers and provides oversight for all state-managed recycling programs including construction and demolition debris, developed and adopted a model C&D diversion ordinance for voluntary use by California jurisdictions.

Protection of Underground Infrastructure (California Government Code § 4216)

This regulation requires an excavator to contact a regional notification center (i.e., underground service alert) at least two days before excavation of any subsurface installations. The underground service alert would then notify the utilities that may have buried lines within 1,000 feet of the excavation. Utility representatives are required to mark the specific location of their facilities within the work area prior to start of excavation. The construction contractor is required to probe and expose the underground facilities by hand prior to using power equipment.

California Code of Regulations Title 20 (Public Utilities and Energy)

California Code of Regulations (CCR) Title 20 includes federal and State minimum efficiency requirements for energy and water use in regulated appliances. These appliances include, but are not limited to, water heaters, furnaces, heat pumps, air conditioners, refrigerators, pumps, lamps and ballasts, computers,

spray sprinkler bodies and showerheads. In addition, the following Title 20 regulations require water-efficient plumbing fixtures in structures:

CCR Title 20 § 1604(h) – (Plumbing Fittings). This regulation establishes efficiency standards that give the maximum flow rate of all new showerheads, lavatory faucets, sink faucets, and tub spout diverters.

CCR Title 20 § 1606(i) – (Plumbing Fixtures). This regulation prohibits the sale of fixtures that do not comply with established efficiency regulations.

California Code of Regulations Title 23 (Waters)

California Code of Regulations Title 23 and standards established by the Regional Water Boards coordinate to regulate the disposal of biosolids.

California Code of Regulations Title 24 (California Building Standards Code)

CCR Title 24, also known as the California Building Standards Code (CBSC), includes regulations for how buildings are designed and constructed, and are intended to ensure the maximum structural integrity and safety of private and public buildings. The CBSC is comprised of 12 "Parts." The CBSC Parts relevant to utilities and service systems are described below.

Title 24 Part 3 (California Electrical Code). The California Electrical Code contains electrical design and construction standards.

Title 24 Part 4 (California Mechanical Code). The California Mechanical Code contains mechanical equipment efficiency and performance standards.

Title 24 Part 5 (California Plumbing Code). The California Plumbing Code contains plumbing design and construction standards. The CPC also promotes water conservation.

Title 24 Part 6 (California Energy Code). The California Energy Code contains energy conservation standards applicable to all residential and non-residential buildings throughout California, including schools and community colleges.

Title 24 Part 11 (California Green Building Standards Code [CALGreen]). CALGreen contains standards applicable to residential and non-residential buildings throughout California, including schools and community colleges. CALGreen is intended to improve public health, safety, and public welfare through sustainable construction practices. The sustainable practices are applied to planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. CALGreen provides a waste reduction requirement of 65 percent of nonhazardous C&D waste.

California Health and Safety Code

California Health and Safety Code § 17921.3(b) requires: (1) All water closets sold or installed in California to use no more than an average of 1.6 gallons per flush. On and after January 1, 2014, all water closets, other than institutional water closets, sold or installed in California are required to be high-efficiency water closets; and (2) All urinals sold or installed in California to use no more than an average of one gallon

per flush. On and after January 1, 2014, all urinals, other than blow-out urinals, sold or installed in California are required to be high-efficiency urinals.

Assembly Bill 1668 and Senate Bill 606

AB 1668 and SB 606 created a new foundation for long-term improvements in water conservation and drought planning. SB 606 and AB 1668 establish guidelines for efficient water use and a framework for implementation and oversight of the new standards, which was required to be in place by 2022. The two bills' provisions include:

- Establishing water use objectives and long-term standards for efficient water use that apply to urban retail water suppliers, composed of indoor residential water use; outdoor residential water use; commercial, industrial, and institutional irrigation with dedicated meters; water loss; and other unique local uses.
- Providing incentives for water suppliers to recycle water.
- Identifying small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability and providing recommendations for drought planning.
- Requiring both urban and agricultural water suppliers to set annual water budgets and prepare for drought.

Senate Bill 610

Senate Bill 610 codified in California Public Resources Code (PRC) § 21151.9 and Water Code § 10910 et seq., requires preparation of "water supply assessments" (WSA) for large developments to ensure that long-term water supplies are sufficient to meet demands in normal, single-dry, and multiple dry years for a period of 20 years for all projects that propose at least the following:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area; or
- A mixed-use project that includes one or more uses specified in the above bullets.

WSAs, prepared by public water systems responsible for service, address whether adequate existing or projected water supplies are available to serve proposed projects, in addition to urban and agricultural demands and other development in the service area.

Where a WSA concludes that insufficient supplies are available, it must describe steps that would be required to obtain the necessary supply. The WSA is required to include identification of existing and

future water suppliers and quantification of water demand and supply by source in five-year increments over a 20-year projection. This information must be provided for average normal, single-dry, and multiple dry years. The absence of an adequate current water supply does not preclude project approval but does require a lead agency to address a water supply shortfall in its project approval findings.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015, and applies to all of the State's groundwater basins (Water Code § 10720.3). (The SGMA is comprised of three separate bills: SB 1168, SB 1319, and AB 1739; all three bills were signed into law on September 16, 2014.) By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code § 10720.1).

California Public Utilities Commission General Order 95

The California Public Utilities Commission (CPUC) General Order 95 provides requirements regarding the installation of overhead electrical lines. The requirements contained in this General Order are applicable to the construction of new power lines as well as the modification of existing lines along with each subsequent portion of the electrical line. These components can include crossarms, conductors, or the poles themselves.

Public Utilities Code § 1001

Public Utilities Code §1001 requires that railroad corporations which require utility connections and extensions must obtain a Certificate of Public Convenience and Necessity from the CPUC. This requirement is specific to railroads which are operated by private electricity, street railroad corporation, gas corporation, electrical corporation, telegraph corporation, telephone corporation, water corporation, or sewer system corporations.

California Water Conservation Act of 2009

The Water Conservation Act of 2009 (often referred to as "SB X7-7" or the "20 by 2020 law") establishes the goal of achieving a 20 percent reduction in statewide urban per capita water use by December 31, 2020, and the interim goal of achieving a 15 percent reduction by 2015. In an effort to achieve those goals, SB X7-7 requires urban retail water suppliers to develop technical information (e.g., baseline daily per capita water use, water use targets, and interim water use targets) and to report that information in their Urban Water Management Plans (UWMPs). UWMPs draw on local, regional, and statewide inputs present data and analyses as required by the California Department of Natural Resources and the CWC. As further discussed below, two of the primary calculations required by SB X7-7 are Base Daily Per Capita Water Use (average gallons per capita per day [gpcd] used in prior years), and Compliance Water Use Targets (gpcd targets for 2015 and 2020). The Base Daily Per Capita Water Use calculation is based on gross water use by an agency in each year and can be based on a 10-year average ending no earlier than 2004 and no later than 2010, or on a 15-year average if 10 percent of the agency's 2008 municipal demand was met by recycled water.

Using this Base Daily Per Capita Water Use figure, an urban retail water supplier must then determine its urban water use target for 2020 and its interim water use target for 2015, both in terms of gpcd. SB X7-7 § 10608.20(b) establishes the following four alternative methods for calculating the Compliance Water Use Targets: (1) 80 percent of Base Daily Per Capita Water Use; (2) adherence to certain water use performance standards; (3) 95 percent of the applicable State hydrologic region target as set forth in the State's draft 20 by 2020 Water Conservation Plan; or (4) the provisional target method and procedures developed by the California Department of Water Resources (DWR) pursuant to SB X7-7. Importantly, per capita reductions under SB X7-7 can be accomplished through any combination of increased water conservation, improved water use efficiency, and increased use of recycled water to offset potable demands. Potable demand offsets can occur through direct reuse of recycled water, such as for irrigation, or indirect potable reuse through groundwater recharge and reservoir augmentation. SB X7-7 provides additional flexibility by allowing compliance on an individual agency basis or through collaboration with other agencies in a region.

California Urban Water Management Planning Act (1984)

The California Urban Water Management Planning Act, as amended (California Water Code [CWC] § 10610 et seq.), mandates that every urban water supplier that either provides over 3,000 acre-feet (AF) of water annually, or serves more than 3,000 urban connections, to assess the reliability of its water sources over a 20-year planning horizon, and report its progress on 20 percent reduction in per-capita urban water consumption by the year 2020, as required in the Water Conservation Bill of 2009 Senate Bill (SB) X7-7. The Act is intended to aid water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water through preparation of UWMPs. The UWMPs must be prepared every five years and submitted to the DWR for review. An UWMP must 1) describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning; 2) quantify past and current water use over five-year increments, and projected water use, identifying the uses among various water use sectors, including single-family residential, multi-family, commercial, industrial, institutional and governmental, landscape, sales to other agencies, seawater intrusion barriers, groundwater recharge, conjunctive use, or any combination thereof, and agricultural; and 3) describe the reliability of the water supply and its vulnerability to seasonal and climatic shortage, and provide data, to the extent practicable, for average, single-dry, and multiple dry water years.

Assembly Bill 341

AB 341, approved in October 2011, is intended to reduce greenhouse gas (GHG) emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in the State. The bill makes a legislative declaration that it is California's policy goal that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020. This law requires California commercial businesses and public entities, which generate four or more cubic yards of commercial solid waste per week or is a multi-family residential use with five or more dwelling units, to arrange for recycling services.

Each local jurisdiction is required to inform businesses about the recycling requirements and keep track of the level of recycling within the business community. In addition, each jurisdiction is required to report to CalRecycle, the State agency that oversees recycling and solid waste, on progress in the business community.

Mandatory Commercial Organics Recycling – California Assembly Bill 1826

AB 1826 (2014) requires businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate on a weekly basis. Additionally, AB 1826 requires that, after January 1, 2016, all local jurisdictions implement an organic waste recycling program to divert organic waste generated by businesses, including multi-family residential dwellings with five or more units. Organic waste includes food waste, green waste, landscape and pruning waste, non-hazardous wood waste, and food-soiled paper waste that is mixed in with food waste. This law phases in the mandatory recycling of commercial organics over time.

Because the minimum threshold of organic waste generation by businesses will be decreased over time (e.g., in 2016, affected businesses were those generating eight cubic yards or more of organic waste per week; in 2019, affected businesses will be those generating four or more cubic yards of organic waste per week), an increasing proportion of the commercial sector will be required to comply. After January 1, 2019, to arrange for organic waste recycling services and, if the department makes a specified determination, would decrease that amount to two cubic yards, on or after January 1, 2020. AB 1826 is part of California's efforts intended to achieve its recycling and GHG emissions reduction goals. Reducing the amount of organic material sent to landfills and increasing the production of compost and mulch are part of the AB 32 Scoping Plan.

Safe Drinking Water Act (State)

California enacted its own Safe Drinking Water Act (SDWA, Health and Safety Code [HSC] §§ 116350–116405) with the California Department of Health Services (DHS) granted primary enforcement responsibility. Title 22 of the CCR (Division 4, Chapter 15, "Domestic Water Quality and Monitoring Regulations") established DHS authority and provides drinking water quality and monitoring requirements, which are equal to or more stringent than Federal standards.

California Senate Bill 1016 (2007)

On September 26, 2008, the Governor of California signed SB 1016 (SB 1016) into law. SB 1016 modifies the Integrated Waste Management Act's waste diversion compliance requirements. The bill would require the Integrated Waste Management Board to issue an order of compliance if the jurisdiction failed to make a good faith effort to implement its source reduction and recycling element or its household hazardous waste element, pursuant to a specified procedure. Certain requirements in making this determination, including considering the extent to which the jurisdiction has maintained its per capita disposal rate, are outlined for the board to follow when making this determination. The bill also requires the board to review each jurisdiction's source reduction and recycling elements and household hazardous waste element at least once every two years.

California Public Resources Code 41780

Under the Integrated Waste Management Act, this section requires each jurisdiction's source reduction and recycling element to include an implementation schedule with specific diversion goals.

Occupational Safety and Health Agency (OSHA)

OSHA sets various rules and standards for employers. OSHA § 1526 includes requirements for cleaning and maintenance of toilet facilities, and § 3364 includes a minimum number of toilet facilities required for construction workers based on the total construction workers.

Water Conservation in Landscaping Act of 2006 (AB 1881)

The Water Conservation in Landscaping Act (AB 1881) required the DWR to update the State of California's Model Water Efficient Landscape Ordinance (MWELo). Under AB 1881, cities and counties are required to adopt the State's MWELo or to adopt a different ordinance that is at least as effective in conserving water as the State's MWELo.

The MWELo was revised in July 2015 via Executive Order B-29-15 to address the ongoing drought and to build resiliency for future droughts. The 2015 revisions to the MWELo increased water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, and on-site stormwater capture and by limiting the portion of landscapes that can be covered in turf. Each city and county are required to submit annual reports to DWR that document how the agency is achieving compliance with the State MWELo and how many projects were subject to the ordinance during the annual reporting period.

California Water Code

The California Water Code states that the water resources of the State must be put to beneficial use and that waste or unreasonable use of water should be prevented. The code is divided into several sections that include provisions regarding water quality, formation of irrigation districts and water districts, safe drinking water, and water supply and infrastructure improvements.

California Energy Commission

The California Energy Commission (CEC) was created in 1974 under the Warren-Alquist Act as the State's principal energy planning organization to meet the energy challenges facing the State in response to the 1973 oil embargo. The Warren-Alquist Act is updated annually to address current energy needs and issues, and its latest revision is dated January 2023. The CEC is charged with six basic responsibilities when designing State energy policy:

- Forecast statewide electricity needs.
- License power plants to meet those needs.
- Promote energy conservation and efficiency measures.
- Develop renewable energy resources and alternative energy technologies.
- Promote research, development, and demonstration.

- Plan for and direct the State’s response to energy emergencies.

California Public Utilities Commission Long Term Energy Efficiency Strategic Plan

Adopted in September 2008 and updated in January 2011, the California Public Utilities Commission (CPUC) Long Term Energy Efficiency Strategic Plan provides a framework for energy efficiency in California through the year 2020 and beyond. It articulates a long-term vision, as well as goals for each economic sector, identifying specific near-, mid-, and long-term strategies to assist in achieving these goals. The plan sets forth the following four goals, known as “Big Bold Energy Efficiency Strategies,” to achieve significant reductions in energy demand:

- All new residential construction in California will be zero net energy by 2020;
- All new commercial construction in California will be zero net energy by 2030;
- Heating, Ventilation and Air Conditioning (HVAC) will be transformed to ensure that its energy performance is optimal for California’s climate; and
- All eligible low-income customers will be given the opportunity to participate in the low-income energy efficiency program by 2020.

The CPUC and CEC have adopted the following goals to achieve zero net energy (ZNE) levels by 2030 in the commercial sector:

- Goal 1:** New construction will increasingly embrace zero net energy performance (including clean, distributed generation), reaching 100 percent penetration of new starts in 2030.
- Goal 2:** 50 percent of existing buildings will be retrofit to zero net energy by 2030 through achievement of deep levels of energy efficiency and with the addition of clean distributed generation.
- Goal 3:** Transform the commercial lighting market through technological advancement and innovative utility initiatives.

California Energy Code

The State of California provides a minimum standard for energy conservation through Title 24, Part 6 California Code of Regulations, commonly referred to as the California Energy Code. The California Energy Code was first adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977. The standards are updated on a three-year cycle to allow for consideration and possible incorporation of new energy efficiency technologies and methods. In August 2021, the CEC adopted the 2022 California Energy Code, which went into effect on January 1, 2023. The 2022 standards require mixed-fuel single-family homes to be electric ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic systems and battery requirements for high-rise, multi-family buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC, 2022).

California Green Building Standards

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. CALGreen (24 California Code of Regulations, Part 11) was adopted as part of the California Building Standards Code. It includes mandatory requirements for new residential and nonresidential buildings throughout California. CALGreen is intended to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the directives by the governor. CALGreen is updated every three years.

CALGreen includes provisions to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. CALGreen contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, etc. The code provides for design options, allowing the designer to determine how best to achieve compliance for a given site or building condition. The code also requires building commissioning, which is a process for verifying that all building systems (e.g., heating and cooling equipment and lighting systems) are functioning at their maximum efficiency.

2016 Appliance Efficiency Regulations

The 2016 Appliance Efficiency Regulations (Title 20, California Code of Regulations Sections 1601 through 1608), combined with federal standards, set minimum efficiency levels for energy and water consumption in products, such as consumer electronics, household appliances, and plumbing equipment (CEC, 2024a). The standards within these regulations apply to appliances that are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the State, and those designed and sold exclusively for use in recreational vehicles or other mobile equipment. These regulations exceed the standards imposed by all other states and they reduce GHG emissions by reducing energy demand. The California Energy Commission updates the Building Energy Efficiency Standards every three years.

California Energy Benchmarking and Disclosure (AB 802)

The Building Energy Benchmarking Program is mandated under AB 802 and requires owners of large commercial and multi-family buildings to report energy use to the CEC by June 1 annually. This program applies to all buildings with more than 50,000 square feet of gross floor area and owners of multi-family residential buildings with more than 50,000 square feet and 17 or more utility accounts. The bill requires each utility, upon the request and authorization of the owner, owner's agent, or operator of a building covered under the regulation, to deliver or provide aggregated energy usage data for a covered building. The required energy usage shall be reported to the CEC through the Energy Star Portfolio Manager.

California Renewable Portfolio Standards

A major component of California's Renewable Energy Program is the renewables portfolio standard established under SB 1078 (Sher) and SB 107 (Simitian). The standard requires that a specified percentage of the electricity that utilities provide comes from renewable resources. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. SB 1020, signed into law on

September 16, 2022, requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent by 2040. Additionally, SB 1020 requires all State agencies to procure 100 percent of electricity from renewable energy and zero-carbon resources by 2035.

100 Percent Clean Energy Act

Senate Bill (SB) 100, the 100 Percent Clean Energy Act of 2018, makes it a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045.

CPUC Natural Gas Regulations

The CPUC regulates natural gas utility rates and services as well as the transportation of natural gas over the extensive transmission and distribution pipeline systems. The CPUC also regulates gas storage facilities. The Gas Safety and Reliability Branch of the CPUC ensures that natural gas pipeline systems are designed, constructed, operated, and maintained according to the safety standards set by the CPUC and the federal government. The regulations are provided in the CPUC General Order No. 112-E and the Natural Gas Pipeline Safety Act of 2011.

Public Utilities Code § 1001

Public Utilities Code §1001 requires that railroad corporations which require utility connections and extensions must obtain a Certificate of Public Convenience and Necessity from the CPUC. This requirement is specific railroads which are operated by private electricity, street railroad corporation, gas corporation, electrical corporation, telegraph corporation, telephone corporation, water corporation, or sewer system corporations.

Renewables Portfolio Standard Program

The Renewables Portfolio Standard Program requires retail sellers of electricity to increase their purchases of electricity generated by renewable sources and establishes a goal of having 20 percent of California's electricity generated by renewable sources by 2017. Subsequent legislation requires retail sellers and publicly owned utilities to procure 50 percent of their electricity from renewable energy resources by 2030. Increasing California's renewable supplies would diminish the State's heavy dependence on natural gas as a fuel for electric power generation. In 2018, SB 100 was signed into law, which again increases the RPS to 60 percent by 2030 and requires all the state's electricity to come from carbon-free resources by 2045 (CPUC, 2025).

100 Percent Clean Energy Act

Senate Bill (SB) 100, the 100 Percent Clean Energy Act of 2018, makes it a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045.

Protection of Underground Infrastructure (California Government Code § 4216)

This regulation requires an excavator to contact a regional notification center (i.e., underground service alert) at least two days before excavation of any subsurface installations. The underground service alert would then notify the utilities that may have buried lines within 1,000 feet of the excavation. Utility representatives are required to mark the specific location of their facilities within the work area prior to start of excavation. The construction contractor is required to probe and expose the underground facilities by hand prior to using power equipment.

California Public Utilities Commission General Order 95

The California Public Utilities Commission (CPUC) General Order 95 provides requirements regarding the installation of overhead electrical lines. The requirements contained in this General Order are applicable to the construction of new power lines as well as the modification of existing lines along with each subsequent portion of the electrical line. These components can include crossarms, conductors, or the poles themselves.

5.17.2.3 Regional

Regional Water Quality Control Board

The proposed General Plan area and BIG is in the Lahontan RWQCB (Region 6) which issues and enforces NPDES permits within the proposed General Plan area including permits for wastewater treatment plants, water reclamation facilities, and industrial waste discharges. NPDES permits allow the RWQCB to regulate where and how waste is disposed, including the discharge volume and effluent limits of waste and the monitoring and reporting responsibilities of the discharger. The RWQCB is also charged with conducting inspections of permitted discharges and monitoring permit compliance.

Golden State Water Company - Barstow 2020 Urban Water Management Plan (2020 UWMP)

The Golden State Water Company - Barstow 2020 UWMP describes water demands, water supply sources, and supply reliability for its service area in five-year increments for normal years, single-dry years, and multiple dry years. The 2020 UWMP also provides water supply contingency planning in case of shortage emergencies, demand management measures to increase water use efficiency, and current and planned water conservation efforts. The 2020 UWMP states that there will be sufficient supplies to meet existing and future demands through 2045 for normal years, single-dry years and multiple dry years. Additional details are provided in the *Environmental Setting* below (GSWC, 2021).

Golden State Water Company - New Business Narrative

The GSWC has specific procedures within their New Business Narrative that outlines the management, design, and construction of water source, storage, and distribution facilities for applicant-funded water system improvements. These procedures have been designed to promote efficient completion of projects at the lowest possible costs and maintain compliance with CPUC rules and regulations. The New Business Narrative discusses the initial application and cost, fire flow requirements, design and construction phase, as well as facility agreements and project closeout. The document also states that applications for water service outside of GSWC's currently approved service area will be reviewed on a case-by-case basis and

may or may not be approved by GSWC. Approval depends on an analysis of the project impact to GSWC's existing water system and existing customers (GSWC, 2023).

Mojave Water Agency Well Permitting Ordinance

Mojave Water Agency (MWA) adopted Ordinance No. 14 related to new Minimal Producers (small water users with new wells) within the Mojave Basin area. Ordinance 14 was adopted on April 14, 2022, and became effective July 1, 2022. Water wells permitted within the Mojave Basin Area starting July 1, 2022, and after are affected by this Ordinance.

According to Ordinance No. 14, the Judgment defines Minimal Producers as "Any Person whose Base Annual Production, as verified by MWA is not greater than ten (10) acre-feet" and who has not stipulated to the Judgment. A Person designated as a Minimal Producer whose Annual Production exceeds ten acre-feet in any year following the date of entry of Judgment is no longer a Minimal Producer and is subject to the terms of the Judgment. Under Ordinance 14, new wells are subject to an annual assessment (Minimal Producers Fee) for the replacement cost of one-acre foot of water, which is determined annually. The Minimal Producers Fee is placed on the San Bernardino County property tax rolls for collection purposes. Proceeds are used to purchase water to recharge groundwater in the various regions within the Mojave Basin Area (MWA, 2024a).

5.17.2.4 Local

County of San Bernardino Countywide Plan

The County of San Bernardino (County) adopted the Countywide Plan (CWP) in October 2020. The CWP Policy Plan addresses the physical, social, and economic issues facing the County's unincorporated portions. **Table 5.17-1: Countywide Plan Policy Plan – Relevant Utilities Goals and Policies** includes the utility and service systems-related goals and policies relevant to BIG the proposed General Plan.

Table 5.17-1: Countywide Plan Policy Plan – Relevant Utilities Goals and Policies	
Goal or Policy	
INFRASTRUCTURE AND UTILITIES ELEMENT	
Goal IU-1	Water Supply. Water supply and infrastructure are sufficient for the needs of residents and businesses and resilient to drought.
Policy IU-1.1	Water Supply. We require that new development be connected to a public water system or a County-approved well to ensure a clean and resilient supply of potable water, even during cases of prolonged drought.
Goal IU-2	Residents and businesses in unincorporated areas have safe and sanitary systems for wastewater collection, treatment, and disposal
Policy IU-2.2	User Fees. For wastewater systems operated by County Special Districts, we establish user fees that cover operation and maintenance costs and set aside adequate reserves for capital upgrades and improvements.
Goal IU-3	A regional stormwater drainage backbone and local stormwater facilities in unincorporated areas that reduce the risk of flooding.
Policy IU-3.1	Regional flood control. We maintain a regional flood control system and regularly evaluate the need for and implement upgrades based on changing land coverage and hydrologic conditions in order to manage and reduce flood risk. We require any public and private projects proposed

Table 5.17-1: Countywide Plan Policy Plan – Relevant Utilities Goals and Policies	
Goal or Policy	
	anywhere in the county to address and mitigate any adverse impacts on the carrying capacity and stormwater velocity of regional stormwater drainage systems.
Policy IU-3.5	Fair share requirements. We require new development to pay its fair share of capital costs to maintain adequate capacity of the County’s regional flood control systems.
Goal IU-4	Solid Waste. Adequate regional landfill capacity that provides for the safe disposal of solid waste, and efficient waste diversion and collection for unincorporated areas.
Policy IU-4.3	Waste diversion. We shall meet or exceed State waste diversion requirements, augment future landfill capacity, and reduce greenhouse gas emissions and use of natural resources through the reduction, reuse, or recycling of solid waste.
Policy IU-4.4	Landfill funding. We require sufficient fees for use of County landfills to cover capital costs; ongoing operation, maintenance, and closure costs of existing landfills; the costs and liabilities associated with closed landfills.
Goal IU-5	Power and Communications. Unincorporated area residents and businesses have access to reliable power and communication systems.
Policy IU-5.3	Underground facilities. We encourage new and relocated power and communication facilities to be located underground when feasible, particularly in the Mountain and Desert regions.
Policy IU-5.4	Electric transmission lines. We support the maintenance of existing and development of new electric transmission lines along existing rights-of-way and easements to maintain the stability and capacity of the electric distribution system in southern California.
Policy IU-5.5	Energy and fuel facilities. We encourage the development and upgrade of energy and regional fuel facilities in areas that do not pose significant environmental or public health and safety hazards, and in a manner that is compatible with military operations and local community identity.
RENEWABLE ENERGY AND CONSERVATION ELEMENT	
Goal RE-2	Energy Conservation and Efficiency. The County will be home to diverse and innovative renewable energy systems that provide reliable and affordable energy to our unique Valley, Mountain, and Desert regions.
Policy RE-2.1	Support solar energy generation, solar water heating, wind energy and bioenergy systems that are consistent with the orientation, siting, and environmental compatibility policies of the General Plan.
Policy RE-2.6	Encourage energy efficiency through appropriate renewable energy systems.
Goal RE-3	Community-Oriented Renewable Energy. Community-oriented renewable energy facilities will be prioritized to complement local values and support a high quality of life in unincorporated communities.
Policy RE-3.1	Prioritize, facilitate, and encourage on-site accessory RE generation to serve the unincorporated county, with a primary focus on rooftop and parking lot solar energy generation.
Source: County of San Bernardino. 2020. Countywide Plan, Natural Resources Element. https://countywideplan.sbcounty.gov/policy-plan .	

The CWP Policy Plan includes the following Policy Maps that address utilities and service systems:

- Policy Map IU-1 Water Service Wholesale Provider: Depicts the service and sphere area boundaries for the County’s water wholesalers.
- Policy Map IU-2 Groundwater Basins: Depicts County areas with:

- Sustainable Groundwater Management Act (SGMA) very low, low, medium, and high Groundwater Basin Prioritization,
 - Over drafted groundwater basins,
 - Adjudicated groundwater areas.
- Policy Map IU-3 Wastewater Treatment Facilities: Depicts the locations of the County's wastewater treatment facilities.
- Policy Map IU-4 Regional Flood Control Facilities: Depicts the locations of the County's channels, basins, dams, and Flood Control District Zones.
- Policy Map IU-5 Waste Disposal and Landfills: Depicts the locations of the County's waste disposal sites.
- Policy Map IU-6 Natural Gas Service: Depicts the service area boundaries for the County's natural gas utility service providers.
- Policy Map IU-7 Electricity Utility Service: Depicts the service area boundaries for the County's electrical utility service providers.

See **Section 5.17.4: Environmental Setting** for further discussion concerning the above conditions and their potential presence in the BIG footprint and the proposed General Plan.

For applicability of the above CWP goals and policies to the proposed General Plan and BIG, see **Section 5.0: Environmental Analysis**.

Codified Ordinances of the County of San Bernardino

The Codified Ordinances of the County of San Bernardino (County Code) addressing utilities and service systems are provided below.

County Code Title 3 Division 3 Chapter 6: Domestic Water Sources and Systems. These regulations provide guidance and policies regarding utility usage within the County, including water systems, sewer systems, and solid waste systems.

County Code § 33.06554: Desert Groundwater Management Permits. This regulation requires a permit for any entity that seeks to construct, reconstruct, abandon, and destroy groundwater wells in the County's desert region.

County Code §33.0643: Well Abandonment. This regulation provides requirements in the event that a well must be abandoned. Specifically, the process by which the owner must cooperate with County of San Bernardino Department of Environmental Health Services (County EHS) the method by which the well must be capped and taken offline.

County Code § 42.0536: Cable Television Systems. This regulation requires the undergrounding of cable infrastructure by cable providers in areas which have previously been designated for underground utilities.

County Code § 63.0806: Water Conservation. This regulation requires recirculation and reuse of water which is used for stationary equipment, machinery, or heating and cooling in industrial processes.

County Code Title 6 Division 7 Chapter 2: Procedure – Public Hearing By Board of Supervisors. Regulations included in this chapter outline the process by which utility facilities and infrastructure may be required to be undergrounded by the County Board of Supervisors for the sake of public health and safety.

County Code § 67.0213: Responsibility of Property Owners further designates the actions required of property owners when notified that utility infrastructure within their property boundaries should be provided or undergrounded. Specifically, once notified, property owners are required to provide underground utility connections from structures within their property to the municipal or greater system.

For applicability of the above County Code standards to the proposed General Plan and BIG, see **Section 5.0**.

San Bernardino County Technical Guidance Document for WQMPs

In compliance with the NPDES General Permit for San Bernardino County, the San Bernardino County Areawide Storm Water Program prepared the Technical Guidance Document (TGD) for Water Quality Management Plans (WQMP) by new development and major redevelopment projects of specific land uses and sizes in the County. A WQMP is required as part of the permit process and commits the Master Developer and/or Site Developer, as applicable, to the implementation of long-term BMPs for use during the operation of a project. It should be noted that WQMPs typically identify permanent BMPs that would be in use during a project's operational life cycle. Individual WQMPs need to identify pollutants of concern based on the proposed land use and site activities, as well as select applicable site design, source control, and treatment control BMPs that would effectively prohibit non-stormwater discharges from entering the storm drain system and that would reduce the discharge of pollutants from stormwater conveyance systems to the maximum extent possible. The WQMP also calls for the on-site retention of stormwater to prevent hydrologic conditions of concern (HCOC), which refer to flooding, erosion, scour, sedimentation, natural habitat impacts, vegetation stress, slope stability, water quality degradation, and altered flow regime at downstream water channels/bodies that may occur if the storm drainage facilities have not been engineered to their ultimate capacities or if natural conditions are present. However, the TGD also designates "HCOC-Exempted Areas," which are areas where the HCOC analysis is not required if the following occurs: a sump condition; predevelopment runoff would equal post-development runoff; stormwater is diverted to a storage area; disturbance is less than one acre; or the watershed area is built out (i.e., 90 percent developed).

San Bernardino County Municipal Separate Storm Sewer System Permit

In compliance with the requirement to develop a Stormwater Management Program, the County has developed a Stormwater Management Program for the Mojave River area, in conjunction with the Town of Apple Valley and the cities of Victorville and Hesperia. The Phase II MS4 covers the watershed's urbanized area. The Stormwater Management Program was developed under NPDES General Permit Number CAS000004 requirements. The purpose of the program is to keep the Mojave River clean to the

maximum extent practicable utilizing BMPs to reduce stormwater runoff and non-stormwater runoff flowing in the Mojave River. The plan also serves to keep contamination, such as sediment, non-sediment solids, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons, pesticides, herbicides, and trash from entering the storm drain system.

San Bernardino County Department of Environmental Health Services: Local Agency Management Plan

San Bernardino County Department of Environmental Health Services (County EHS) adopted a Local Agency Management Program (LAMP) to comply with the State's OWTS policy. The LAMP provides minimum standards and requirements for the treatment and disposal of sewage using on-site septic systems when no connection to a sewer is available. The LAMP allows for OWTS within the County while providing standards that protect water quality and public health.

Requirements for new development include site evaluation standards, siting standards, OWTS design and construction requirements, and other specific land uses. Oversight of OWTS plan review, plan check, and installation are provided by County EHS. The County EHS is responsible for issuing permits for conventional and alternative treatment systems; reviewing percolation reports and alternative treatment proposals for new and replacement systems in high-risk residential areas and commercial projects; and complying with LAMP reporting requirements. Applicants for installation of a new OWTS within the proposed General Plan area must comply with the guidelines provided in the County's *Local Agency Management Program for Onsite Wastewater Treatment Systems* (EHS, 2017).

The County EHS is also the local enforcement agency for the landfills in San Bernardino. County EHS is certified by CalRecycle to regulate landfills, transfer stations, and composting sites. County EHS inspects and permits refuse vehicles and solid waste facilities (e.g., landfills, transfer stations, and composting facilities) and monitors landfill post closure conditions.

San Bernardino County Department of Public Health Application for Well Permit

San Bernardino County Environmental Health Services is prohibited from issuing a construction permit for a new groundwater well or for alteration of an existing groundwater well unless certain requirements are met, or the permit falls within the limited exemption to the requirements. Regardless of the well's location, the Application for Well Permit for a non-exempt new or altered groundwater well must be accompanied by a report signed by a licensed California Professional Geologist with a Certified Hydrogeologist specialty certification. The specialist must conclude that extraction of groundwater from the well is not likely to interfere with the production and functioning of existing nearby wells and is not likely to cause subsidence that would adversely impact or damage nearby infrastructure. Additionally, Environmental Health Services will not issue a water well construction permit for a non-exempt new groundwater well, or alteration of an existing groundwater well, located within the following areas: Upper Santa Ana Valley – Yucaipa (Basin Number 8-002.07), Indian Wells Valley (Basin Number 6-054) or Coachella Valley – Mission Creek (Basin Number 7-021.02) or a basin classified as medium or high priority as identified by the Department of Water Resources without first obtaining verification from the relevant Groundwater Sustainability Agency (EHS, 2024).

Local Agency Formation Commission for San Bernardino County

The Local Agency Formation Commission for San Bernardino County (SBLAFCO) implements the CKH legislative direction and policies. One of SBLAFCO's fundamental principles is to ensure the establishment of an appropriate, sustainable, and logical municipal level government structure for the distribution of efficient and effective public services. Boundaries are assigned to define a city or special district's geography. There are various types of boundary changes within a SBLAFCO's purview, including the following which are relevant to the proposed General Plan and BIG:

- **Annexation** means the inclusion, attachment, or addition of territory to a city or a district.
- **Detachment** means the exclusion, deletion, or removal of territory from a city or district. Detachment occurs when land is annexed to another agency that provides similar services.
- **Reorganization** means two or more changes of organization initiated in a single proposal initiated to the SBLAFCO. Changes in organization are annexations, detachments and other actions governed by the Cortese-Knox-Hertzberg Local Government Reorganization Act as detailed in Government Code Section 56021.

The SBLAFCO has identified the following goals to encourage the establishment of an appropriate, sustainable, and logical municipal level government structure:

- Encourage orderly growth;
- Promote logical and orderly service boundaries for cities and special districts;
- Discourage premature conversion of prime agricultural lands to urban uses; and
- Promote efficient and effective service delivery for cities and special districts.

To achieve these goals, the SBLAFCO primarily carries out planning, regulatory, and special study functions, as summarized below (SBLAFCO, 2025).

Planning Function. The SBLAFCO accomplishes its planning function and promotes orderly land use and service planning through its "sphere of influence" program, in which SBLAFCO designates the planned probable physical boundaries and service area of a city or district. State law requires a LAFCO to consider the following factors in determining a sphere of influence boundary:

- The present and future land uses within the study area;
- The adequacy of current services available from agencies which currently overlay the study area;
- The capability of city or district to serve the study area in the future
- Communities of interest
- Regulatory Function

Regulatory Function. By law, SBLAFCO must review and approve any proposal to add land to a city or special district (annexation), create a new city or special district (incorporation or formation), remove land

from a city or special district (detachment), consolidate, merge, or dissolve cities or special districts. The SBLAFCO's review of a proposal generally focuses on the following issues:

- **Boundaries:** Do the proposed service boundaries make sense? Do they represent a logical and recognizable area within which services can be provided?
- **Financial Effects:** What are the financial implications of the proposal on local governments and landowners within the study area?
- **Service Effects:** What are the range and levels of services that will be provided if the proposal is successful? Will the proposal adversely affect the ability of any governmental agency to provide service?
- **Disadvantaged Unincorporated Communities (DUCs):** What is the effect on DUCs?
- **Environmental Effects:** What are the possible environmental consequences of a proposal?

Special Studies Function. State law empowers the SBLAFCO to investigate the efficiency and effectiveness of cities and special districts, and to propose changes in organization where appropriate. For example, the SBLAFCO might review the pattern of service boundaries that overlay a community or region and suggest changes that might improve the effectiveness and efficiency of service delivery.

See **Section 5.11: Land Use and Planning** for further discussion concerning SBLAFCO.

San Bernardino County Solid Waste Management Division

The San Bernardino County Solid Waste Management Division (SWMD) is responsible for the operation and management of the solid waste disposal system for the County. SWMD's disposal system consists of five regional landfills and nine transfer stations. Additionally, the SWMD administers the County's Solid Waste Franchise Program with 20 franchise areas and the refuse collection permit program which authorizes and regulates trash collection by private haulers in the unincorporated areas (SBCPW, 2024).

San Bernardino County Master Storm Water System Maintenance Plan

The Master Storm Water System Maintenance Plan is intended to serve as a comprehensive guide to the maintenance of the San Bernardino County Flood Control District's (SBCFCD) existing flood control facilities. The Maintenance Plan includes a complete description of maintenance activities, Standard Operational Procedures, the frequency with which activities are conducted, seasonal restrictions, and methods for environmental compliance and reporting. The Maintenance Plan does not include the construction of new drainage facilities.

San Bernardino County's Hydrology Manual

The San Bernardino County's Hydrology Manual provides computational techniques and criteria for the estimation of runoff, discharges, and volumes for use in hydrology study submittals to the SBCFCD.

City of Barstow 2015-2020 General Plan

The City adopted the City of Barstow 2015-2020 General Plan (2015 General Plan) in February 2015. The 2020 General Plan is the overarching guide for implementation of the City's Development Code. **Table**

5.17-2: 2015 General Plan Relevant Goals and Policies includes the utilities and service system-related goals and policies relevant to the Project. For applicability of the 2015 General Plan goals and policies to the proposed General Plan and BIG, see **Section 5.0**.

Table 5.17-2: 2015 General Plan Relevant Goals and Policies	
Goal or Policy ¹	
RESOURCE CONSERVATION AND OPEN SPACE ELEMENT	
Goal 1	Ensure protection of water quality and quantity for the community by working in cooperation with all water purveyors in the area to preserve, augment, capture and purify all waters in the Mojave River system.
Policy 1A	Ensure a water supply system capable of meeting normal and emergency Demand through cooperation between the City and water purveyors.
Policy 1B	Ensure protection of water quality and quantity for the community by working in cooperation with all water purveyors in the area to preserve, augment, capture and purify all waters in the Mojave River system.
Policy 1C	Strive to ensure that adequate water remains available to the community in order to maintain continued growth.
Policy 1D	Coordinate efforts with other agencies to ensure that all property owners within Barstow's Sphere of Influence have adequate sewer and water facilities.
Policy 1E	Maintain a storm drainage system adequate to protect the lives and property of Barstow residents.
Goal 6	Provide programs and incentives to encourage residents, businesses and developers to reduce consumption and efficiently use energy resources.
Policy 6A	Educate the development community with regard to green building principles and other strategies for conserving natural resources.
Source: City of Barstow. 2015. <i>City of Barstow 2015-2020 General Plan</i> . https://www.barstowca.org/home/showpublisheddocument/5359/636607004808630000	

Code of the City of Barstow

The Code of the City of Barstow (Barstow Code) regulations addressing utilities and service systems are provided below (Barstow, 2025). For applicability of the Barstow Code standards to the Project, see **Section 5.0**.

Barstow Code Chapter 6.20: Solid Waste and Recyclables Collection Services. Barstow Code Title 6 establishes standards regarding solid waste collection within the City. Article 8 provides policies specific to solid waste collection in commercial and industrial zones.

Barstow Code Chapter 6.39, Mandatory Organic Waste Disposal Collection. This chapter describes compliance standards for commercial businesses, single-family units, commercial edible food generators, food recovery organization, and haulers and facility operators that subscribe to organic waste recycling services pursuant to AB 939, 341 and 1826, and SB 1383.

Barstow Code Chapter 13.12: Discharges – Protection. Barstow Code § 13.12.405: Pretreatment Of Industrial Wastewater provides pretreatment requirements for wastewater generated by industrial users. This includes requirements to provide plans for all pretreatment infrastructure for review and approval.

Barstow Code § 13.12.505: Industrial User Permit Application Requirements further requires industrial users to receive a wastewater generation permit from the City prior to allowed usage.

Barstow Code Chapter 13.16: Building Laterals. Barstow Code Chapter 13.16 requires any person developing a project which will make a connection to sewer infrastructure within the City limits to obtain a permit from the City prior to the creation of the new connection.

Barstow Code Chapter 13.32: Underground Utilities. Barstow Code Chapter 13.32 includes requirements for the burial of public utility lines to ensure public health and safety. Specifically, Barstow Code § 13.32.130 requires the undergrounding of all electrical distribution lines of 16,000 volts or less, telephone, cable antenna television and similar service wires or cables which provide direct service to properties. This requirement does not apply to current, nonconforming structures until they are modified in a way that would require the development of additional utility infrastructure.

Barstow Code Chapter 13.40: Water Conservation Plan. Barstow Code § 13.40.040: Water Uses Prohibited lists the water uses which are either completely prohibited or contain use limitations. This section requires irrigation of landscaping to be completed without the use of excess water resources.

Barstow Code Chapter 19.06: Development Standards. Barstow Code Chapter 19.06 contains general regulations pertaining to specific zoning areas within the City. Barstow Code § 19.06.080: Landscape Water Conservation includes regulations for minimum landscaping requirements and foliage types in order to manage potential water use for each project. This code section also requires applicants to create a landscape planting plan to be reviewed by the City which lists plant materials and their corresponding locations as well as irrigation plans.

Barstow Code Title 15: Buildings and Construction. This title includes various regulations concerning erection, construction, maintenance, etc. of all buildings and/or structures in the City.

Barstow Code §15.08.010: Codes Adopted. This code section specifies the various State codes that the City has adopted, including among others the CBC, California Plumbing Code, California Existing Building Code, California Green Building Code, and the California Referenced Standards Code.

Barstow Code Chapter 13.12 Article V: Wastewater Discharge Permits. This article details the requirements of industrial users connecting to the Barstow sewer system including permit application requirements, limitations on daily and average monthly wastewater pollutants, limitations on average daily and maximum flows, and the regulation of discharge violations.

Barstow Code Chapter 13.12 Article VII: Fees and Charges. This article details sewer service charges for residential and industrial users and monitoring and inspection charges.

City of Barstow Local Agency Management Program (LAMP)

The City's LAMP addresses wastewater issues, City requirements, and scope of coverage for OWTS installation and maintenance. It also allows for the continued use and installation of OWTS. The requirements in the LAMP are derived from the California Plumbing Code requirements for private sewage disposal systems, and the RWCQB's OWTS Policy (Barstow, 2024a).

Waste Discharge Requirements and Water Reclamation Requirements for the Barstow Wastewater Treatment Plant

The Lahontan RWQCB issued Waste Discharge Requirements and Water Reclamations Requirements for the Barstow Regional Wastewater Treatment Facility (WWTF) (WDID No. 6B360101001) that include limitations on effluent quality and quantity and recycled water requirements (LRWQCB, 2019).

5.17.3 METHODOLOGY FOR EVALUATING IMPACTS

This section defines the study area (i.e., affected environment) and summarizes the methodology used to analyze potential impacts concerning utilities and service systems.

5.17.3.1 Definition of Study Area

The study area is the geographic boundary in which the environmental investigations were conducted specific to each resource topic.

Proposed General Plan

The study area for direct impacts concerning utility and service systems is the City and its unincorporated Sphere of Influence (SOI), hereinafter referred to as the proposed General Plan area. The study areas for the indirect impacts concerning utility and service systems are the service provider areas for the GSWC, City of Barstow Environmental Services Division, Southern California Edison (SCE), Southwest Gas, and the Barstow Sanitary Landfill, respectively.

Barstow International Gateway

BIG's potential to generate environmental impacts concerning utility and service systems was assessed through consideration of multiple study areas. For potential direct impacts concerning utilities and service systems, BIG's study area is the BIG footprint. For potential indirect impacts concerning utilities and service systems, the study areas were based on the service area of each utility and service provider. **Table 5.17-3: Definition of Study Areas – BIG** provides the study area for each utility and service system discussed in this environmental resource topic.

Table 5.17-3: Definition of Study Areas – BIG		
Utility	Provider	Study Area Boundary
Water	Golden State Water Company (GSWC)	For construction non-potable water, the Mojave Basin Centro Subarea. For construction and operations potable water, the updated GSWC Barstow service area, inclusive of the proposed extension; see also the proposed General Plan discussion above.
Wastewater	City of Barstow Environmental Services Division	Updated City of Barstow limits (i.e., Environmental Services Division wastewater service area), inclusive of the proposed annexation area; see also the proposed General Plan discussion above.
Wastewater Treatment	Barstow Regional Wastewater Treatment Facility (WWTF)	Updated City of Barstow limits (i.e., Environmental Services Division wastewater service area), inclusive of the proposed annexation area; see also the proposed General Plan discussion above.
Stormwater Drainage	City of Barstow Environmental Services Division	BIG footprint, plus 250-foot buffer
Electric Power	Southern California Edison (SCE)	SCE service area, the “Out of Los Angeles Basin” Local Capacity Area; see also the proposed General Plan discussion above.
Natural Gas	Southwest Gas	Southwest Gas southern California service area; see proposed General Plan discussion above.
Telecommunications	Spectrum, Frontier Communications, Lumen, T-Mobile, Viasat, HughesNet, Dish, DirecTV, and Earthlink	Service areas of respective telecommunications providers within the BIG footprint.
Solid Waste	Barstow Sanitary Landfill	Barstow Sanitary Landfill service area, which is the San Bernardino Desert Region.

5.17.3.2 Methodology

Proposed General Plan

The analysis for the proposed General Plan utilized GIS tools for the water and sewer system analysis, data (i.e., master plans and capital improvement programs), and communication with City staff and local providers including GSWC, MWA, and the Barstow Sanitary Landfill. The infrastructure assessment report (see **Appendix 5.17 GP-1: Infrastructure Report**) describes the wet utility infrastructure systems that support the proposed General Plan area, including water, sewer, and storm drainage systems. Infrastructure and utilities that support the existing and proposed land uses were analyzed at a level consistent with the proposed General Plan citywide program-level planning. The infrastructure assessment report evaluated the existing conditions of the infrastructure systems including water, sewer, storm drain and water quality regulations that serve the proposed General Plan area. Under the proposed General Plan, the proposed buildout and land use changes would alter demands on existing infrastructure

and utilities. The analysis within the report reviewed, identified, and summarized the effects of the proposed conditions on the existing infrastructure within the water, sewer, and storm drainage systems. Any significant deficiencies were identified, along with the system improvement requirements needed to address them, including any Capital Improvements Plans (CIP) to remedy existing or prospective deficiencies within the proposed General Plan area. Additionally, Carollo Engineers was retained by the City to prepare the *Citywide Wastewater and Sewage Capacity Analysis* (Carollo Analysis), which assessed the City wastewater system's ability to meet projected growth forecast through 2048. While the Carollo Analysis also included a discussion of improvements required for buildout, buildout timing is highly speculative and thus is excluded from this environmental analysis.

Although GSWC is the retail water provider for the proposed General Plan area, GSWC's 2020 UWMP demand figures reflect the current 2015 General Plan and its associated growth forecast. Additionally, GSWC's demand methodology and data collection process intermingles some commercial and multi-family accounts. UWMPs are updated every five years, and the update to the 2020 UWMP (i.e., the 2025 UWMP) was not available as of this writing. Accordingly, the City coordinated with MWA, the regional water provider, to more accurately estimate existing water demands and projected water demands associated with the proposed General Plan and better align with the upcoming 2025 UWMP (at the regional and local level). MWA develops a multi-factor water forecasting formula for the entire region. This methodology was used in the MWA's 2020 UWMP and will be used in MWA's 2025 Regional UWMP, which will include GSWC as one of 11 urban retail suppliers. MWA tracks water use within the entire Mojave Basin Area, and water use is also included in annual Verified Production reports. The large urban water suppliers within the region also track their individual production and report it to the SWRCB as part of monthly reporting.

MWA's methodology examines both existing and new customers within a specific service area in the region. The methodology to forecast existing customer use and new customer use differs slightly but is primarily developed by multiplying the population of each service area by a water factor based on gallons per capita per day (GPCD). The water factor considers both residential and non-residential uses, indoor and outdoor water uses, as well as incorporates the use of water efficient technologies over time. Population growth is based on MWA's 2020 UWMP projections for the region. MWA expects that population growth projections will be driven by development projects that will require the water system to accommodate growth. **Table 5.17-5: GSWC Projected Water Demands (AFY)**, provided later in this section, identifies GSWC's projected water demands for 2025 to 2045 that were developed in the 2020 MWA UWMP.

The proposed General Plan water demand calculations were developed in conjunction with MWA using the 2020 UWMP water demand projection methodology by integrating the proposed General Plan growth projections into the water demand forecast model for the GSWC service area through 2048.

Stormwater drainage, solid waste, electricity, natural gas, and telecom infrastructure and utilities that support the existing and proposed land uses were also analyzed at a level consistent with the proposed General Plan citywide program-level planning. The existing conditions of these infrastructure systems and

any changes pursuant to the proposed General Plan are also analyzed and any significant deficiencies were identified, along with the tools available to address them.

Barstow International Gateway

The BIG analysis concerning utilities and service systems was based on the Utility Assessment (see **Appendix 5.17 BIG-1: Utility Assessment Technical Report**) and the WSA (see **Appendix 5.17 BIG-2: Water Supply Assessment**), which estimate BIG's construction and operational utility demands and generations, and evaluate whether these would require or result in relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities. If construction or relocation of such facilities is required, then the analysis considers whether the construction or relocation of such facilities would result in significant environmental effects. The analysis also evaluates BIG's construction and operational potable and non-potable water demands to determine if sufficient water supplies would be available to serve BIG and reasonably foreseeable future development and if the wastewater treatment provider has adequate capacity to serve BIG's projected wastewater generation in addition to the provider's existing commitments. The analysis concerning solid waste estimates BIG's solid waste generation to determine if it would exceed State or local standards or the capacity of local infrastructure, and analyzed for consistency with federal, State, and local solid waste management and reduction statutes and regulations.

Water

BIG's construction water demand includes non-potable water for construction activities and potable water for on-site construction workers. Note that the average annual total construction workers estimated for BIG construction is based on peak employment assumptions. This analysis assumes that only potable water demand for construction workers within the BIG footprint would be supplied from GSWC Barstow. The non-potable construction water demand for construction activities would be supplied from up to eight new private on-site groundwater wells, which would not require treatment for non-potable uses.

Non-potable construction water would be used for mixing concrete, equipment cooling, general site cleaning, earthwork, and dust control. Earthwork and dust control measures would constitute the majority of non-potable water demand during construction. Non-potable water demand for earthwork is based on a rate of approximately 32 gallons per cubic yard of material to moisture condition soil for compaction.¹ Non-potable water demand for dust control is based on a rate of 46 gallons per cubic yard of material for the 400 days requiring dust control during BIG construction. An additional 167,790 gallons per day is required for construction activities including concrete batching and moisture control of aggregates (**Appendix 5.17 BIG-2**). The remaining days of the 34-month construction period are not anticipated to include construction activities that would require substantial dust control measures. Water demand for equipment cooling and general site cleaning is based on square footage and machinery.

¹ See **Appendix 5.17 BIG-1** for water demand calculations.

Potable construction water demand for both on-site and off-site use is estimated to be an average of 30 gallons per day per person (gpd/person) to meet the drinking and sanitary needs of construction workers. Potable construction water would be used for on-site construction workers and provided to the construction site via temporary connections to GSWC Barstow's existing water lines (**see Appendix 5.17 BIG-2**).

BIG operational water demands include water used for employees, buildings, electric hostler truck washing, solar panel maintenance (i.e., solar farm and building rooftops), landscaping, and crane maintenance pads. In addition, operational demands include water that is lost during distribution (i.e., "distribution system losses"). BIG's average annual operational potable water demand was estimated based on: (1) literature values for office building water, (2) landscape irrigation and ordinance code, and (3) information about BIG provided by BNSF. Potable water demands during BIG operations would be provided by directly connecting to facilities owned and operated by GSWC Barstow starting in the fourth quarter of 2028. **Appendix 5.17 BIG-2** Table 1 specifies the construction and operational water demand factors for each BIG land use.

It is noted that although the existing land uses within BIG's footprint would be demolished during the acquisition and construction phases to avoid trespassing and safety concerns, the existing water demand associated with the existing land uses is conservatively assumed to be zero in the analysis (the analysis does not take credit for the water use of existing land uses).

Wastewater

Construction wastewater flow is based on OSHA § 3364, which sets the minimum number of toilet facilities for construction workers, and the typical size of a toilet facility. For a conservative estimate, BIG construction wastewater flow is based on the highest per day construction worker count (approximately 8,188 construction workers) and 31 portable water closets. Each 60-gallon portable water closet would be emptied once a week creating a maximum total daily wastewater generation of 1,860 gallons per day (gpd) for the 34-month construction period.

Operational wastewater flow is based on the land use type and the approximately 5,373 employees, as analyzed in **Appendix 5.17 BIG-1**. Therefore, BIG operational wastewater flow is based on 30 gallons per day per employee.

It is noted, although the existing land uses within BIG's footprint would be demolished during the acquisition and construction phases to avoid trespassing and safety concerns, the existing wastewater generation associated with the existing land uses is conservatively assumed to be zero in the analysis (the analysis does not take credit for the existing land uses).

Electric Power

BIG's construction electric power usage is based on the sum of the loads of the planned electrical equipment, buildings, and lighting, which is provided by equipment manufacturers and applying diversity based on modeling of existing BNSF facilities of similar nature.

BIG's operational electric power usage (annual) and demand (peak) is based on land use type, number of employees, and use of electric power equipment (i.e., material handling, forklifts, cranes, and electric hostlers). The analysis considers the required facilities to meet these factors, and how these facilities may be connected to the existing local power grid. BIG's electric power usage and demand is based on the sum of the loads of BIG's proposed buildings, lighting, and electric equipment.

It is noted that although the existing land uses within BIG's footprint would be demolished during the acquisition and construction phases to avoid trespassing and safety concerns, the existing electric power usage and demand associated with the existing land uses is conservatively assumed to be zero in the analysis (the analysis does not take credit for electrical use by existing land uses).

Natural Gas

Given the size of the BIG footprint, it is anticipated that existing natural gas infrastructure would be encountered during ground moving activities. BIG's effects were analyzed based on the need to relocate or reconstruct these existing facilities.

BIG's proposed buildings (e.g., within the rail yard and transload warehouse center) would use electric power for heating and would not connect to existing natural gas lines. Therefore, no analysis of operational natural gas demands or new or expanded natural gas facilities was conducted.

Telecommunications

BIG's effects on telecommunications facilities are based on existing demands on the telecommunication infrastructure and their ability to meet the demands generated by proposed BIG improvements.

Solid Waste

Existing residential and commercial land use solid waste generation estimates, and BIG solid waste generation estimates were based on an average rate of 12.23 pounds per household per day (lbs./household/day) and 10.53 pounds per employee per day (lbs./employee/day), respectively (CalRecycle, 2024). Existing industrial land use solid waste generation estimates were based on an average rate of 8.93 lbs./employee/day for both construction and operations employees (CalRecycle, 2024).

It is noted that, although the existing land uses within BIG's footprint would be demolished during the acquisition and construction phases to avoid trespassing and safety concerns, the existing solid waste generation associated with the existing land uses is conservatively assumed to be zero in the analysis (the analysis does not take credit for the existing land uses).

5.17.4 ENVIRONMENTAL SETTING

Proposed General Plan

Water Supplies and Facilities

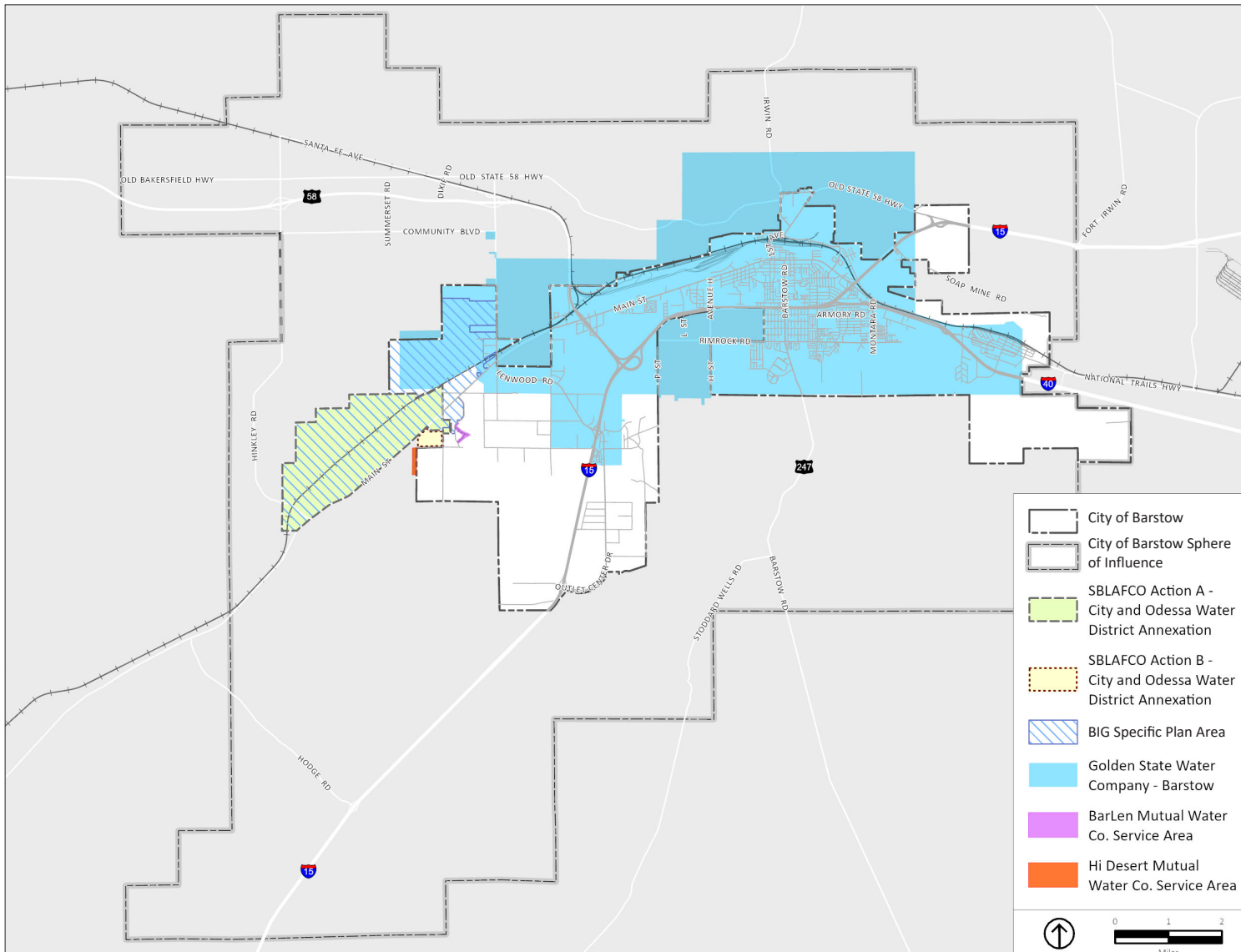
Water Facilities

GSWC manages the potable and non-potable water system within the majority of the City as well as surrounding unincorporated areas of San Bernardino County as depicted in **Figure 5.17-1: Golden State**

Water Company Barstow Water Service Area. GSWC operates as an investor-owned utility, serving over one million individuals across 80 communities in California. The GSWC serves mostly residential customers with some commercial and industrial customers in the City and surrounding unincorporated County areas.

Per the City's 2020 UWMP, GSWC's water system consists of 8,926 municipal connections, approximately 186 miles of distribution pipelines, eleven facilities that provide stored water by gravity or through booster pumping stations, and fourteen active wells. The fourteen active wells extract water from the Mojave River Basin-Centro Sub-Basin. The systems' wells pump directly into the distribution system. Sodium hypochlorite is injected at the wellheads to provide a disinfectant residual in the water entering the distribution system. See **Figure 5.17-2: City of Barstow Existing Water System Facilities**, for the water infrastructure and facilities within the City.

GSWC Barstow is able to increase and replenish groundwater supplies through water transfers and exchanges with other water agencies and sources. GSWC Barstow coordinates its water supply management primarily with the MWA through transfers and exchanges to increase groundwater basin supplies. MWA's service area encompasses approximately 4,900 square miles of eastern San Bernardino County. Its service area is divided into seven Subareas, each one affiliated with a hydrological groundwater basin. MWA is a State Water Project (SWP) contractor and acts as Watermaster and wholesale supplier to 10 retail water suppliers that are large enough to require preparing their own UWMPs. There are a number of smaller retail suppliers in the MWA service area which do not meet the Urban Water Management Planning Act's minimum threshold statutory criteria. MWA's goals include sound fiscal and organizational policies, effectively managing water resources in conjunction with the SWP, maintaining water quality, and promoting efficient use of the region's resources through regional conservation programs and public awareness (MWA, 2024b). Groundwater pumping under the Mojave Basin Area Judgement (adjudication) is granted by the Riverside Superior Court. The Adjudication of the Mojave Basin Area was the legal process that allocated the right to produce water from the available natural water supply. MWA is the acting Watermaster to ensure that the terms of the Judgement are followed by all Stipulating Parties. MWA is also responsible for all groundwater recharge activities. MWA primarily receives water from the SWP through its contract and delivers the water to various recharge sites throughout the Mojave Basin. The Watermaster collects Replacement Obligation assessments from the Parties to the Mojave Basin Area Judgement when the Parties pump more than what is allowed. GSWC will not incur a Replacement Obligation unless further order from the Court reduces the threshold that GSWC is allowed to pump without incurring a Replacement Obligation.



Source:
City of Barstow, 2025; Golden State Water Company, 2025.

Figure 5.17-1
Golden State Water Company Barstow Water Service Area



5.17 | Utilities and Service Systems

The City has two other water districts within its jurisdiction, Bar-Len Mutual Water Company and Odessa Water District. All future development under the proposed General Plan, including BIG, would not receive water from either district, but would instead receive water from GSWC. Bar-Len Mutual Water Company and Odessa Water District do not meet the threshold to create an UWMP. Since the Project will not use water from Bar-Len Mutual Water Company and Odessa Water District, it will not have an impact on these districts due to water demand or water-related infrastructure that would cause environmental impacts. Therefore, these districts are not discussed further.

The proposed General Plan area includes areas that are located outside of a retail water district's service area (e.g., Hinkley, Sylvan Ave neighborhoods, and other portions of the unincorporated SOI) but are within the MWA service area. These areas primarily rely on local domestic groundwater wells for water supply. All local domestic groundwater wells must obtain a Well Permit from the San Bernardino County Department of Public Health and must complete a Notice of Intent to Extract Water with MWA. For a conservative analysis, these areas will be analyzed at an equivalent water demand rate as the development within a retail water district's service area.

GSWC Existing and Projected Water Demands. For the City's existing land uses, water demands were estimated based on MWA's UWMP methodology. Every year, the MWA evaluates water supply conditions and projected demand across the Mojave Basin Area and prepares an annual report to determine water allocations for each water producer in addition to transfers of water rights and special provisions to protect the environment. As shown in **Table 5.17-4: GSWC Existing Water Demands (AFY)** the City's existing water service connections have a combined annual water demand of approximately 5,414 AF as of 2023. Based on 2020 water use, the single-family residential and commercial/institutional sectors within the GSWC Barstow service area have the greatest water demand of all use types, at 35.3 percent and 30.6 percent of the GSWC Barstow service area's total demand, respectively, followed by multi-family residential at 14.8 percent. Water demand for landscaping represented just 1.0 percent of total water demand, and distribution system losses represent 16.3 percent of the total water demand (GSWC, 2021). Between 2016 and 2022, total water demand within the GSWC Barstow service area remained stable, averaging 5,576 AFY (**Appendix 5.17 BIG-1**). The service area population in 2023 was estimated to be 34,486 persons. This results in a calculated 2023 water demand value of 140 gpcd.

Table 5.17-4: GSWC Existing Water Demands (AFY)				
Water Supplier	Year	Population	Current Customer GPCD	Current Customer Demand (AFY)
Golden State Water Company (GSWC) – Barstow System	2023	34,486	140	5,414
Notes: gpcd = gallons per capita per day				
Source: Fuscoe, 2025; Appendix 5.17 GP-1: Utility Infrastructure Report.				

The water system is functioning effectively to deliver these demands and the GSWC and the City consistently track and monitor the condition of the water infrastructure to provide a reliable water infrastructure network. All service connections in the City are metered. Unaccounted for water in the service area consists of routine flushing and water losses. Per California Department of Water Resources

(DWR) requirements, annual water loss for the period of 2016-2019 is reported using the DWR/AWWA water audit methodology. Losses within this timeframe for GSWC have averaged 13 percent. GSWC has an active Water Loss Control Program. Water losses are monitored by the Operations Engineering Department by reviewing the annual Distribution System Water Audits conducted in each water system. If the Operations Engineer determines from the annual water audit analysis that a leak detection survey is needed, GSWC will contract with a qualified leak detection company to perform the survey using the most current leak detection technology (GSWC, 2021).

Table 5.17-5: GSWC Projected Water Demands (AFY) shows GSWC’s projected water demands for 2025 to 2045 that were developed in the 2020 MWA UWMP. As shown in **Table 5.17-5**, GSWC potable water demands are expected to increase from 5,730 AFY to 5,920 AFY between 2025 and 2045.

Table 5.17-5: GSWC Projected Water Demands (AFY)					
Water Supplier	2025	2030	2035	2040	2045
Golden State Water Company (GSWC) – Barstow System	5,730	5,780	5,830	5,870	5,920
Notes: AFY = acre-feet per year					
Source: MWA, 2021.					

GSWC Projected Water Supplies. GSWC anticipates its water supplies will range from 14,408 AF to 15,128 AF under normal conditions and during multiple dry years from 2025 to 2045. These total water supplies are derived from GSWC’s projected Mojave Basin Adjudication Base Annual Production (BAP), as well as projected carryover supplies from unused Free Production Allowance (FPA) (GSWC 2021). **Table 5.17-6: Normal, Single, and Multiple Dry Year Water Supply (AF)** shows GSWC’s projected water supplies for 2025 to 2045.

Table 5.17-6: Normal, Single, and Multiple Dry Year Water Supply (AF)					
	2025	2030	2035	2040	2045
NORMAL YEAR					
Supply	15,128	14,408	14,408	14,408	14,408
SINGLE DRY YEAR					
Supply	15,128	14,408	14,408	14,408	14,408
MULTIPLE DRY YEAR					
Year 1 Supply	15,128	14,408	14,408	14,408	14,408
Year 2 Supply	14,408	14,408	14,408	14,408	14,408
Year 3 Supply	14,408	14,408	14,408	14,408	14,408
Year 4 Supply	14,408	14,408	14,408	14,408	14,408
Year 5 Supply	14,408	14,408	14,408	14,408	14,408
Notes: AF = Acre Feet					
Source: Golden State Water Company (GSWC). 2021. <i>Barstow Service Area 2020 Urban Water Management Plan</i> . Tully & Young, Inc. https://wuedata.water.ca.gov/public/uwmp_attachments/2035703361/GSWC%2DBarstow%202020%20UWMP%20Final.pdf .					

Water Supply

Groundwater. The water supply for the GSWC Barstow service area is primarily groundwater from the Lower Mojave River Valley subbasin (Lower Mojave), a section of the 36 groundwater basins and subbasins (GSWC, 2021, p.3-2) covering the broader Mojave Region (**Appendix 5.17 BIG-1**). The local groundwater in the Mojave Basin Area is managed across five distinct subareas: Oeste, Este, Alto, Centro, and Baja. These subareas are separated based on hydrological, geological, engineering, and political considerations (MWA, 2021). GSWC Barstow uses only Centro Subarea water supplies to serve the GSWC Barstow system. Water levels in the Centro Subarea have been stable, showing seasonable variability and declines during dry years, but generally recovering during wet periods. The Centro Subarea has annual allocations determined by the Watermaster's assessments. Additionally, GSWC supplements its supply with surplus water from prior years. Collaborative efforts with MWA are essential to enhancing the groundwater basin reserves and complying with regulations outlined in the Mojave Basin Adjudication, which governs the water rights. The Judgment in *City of Barstow, et al v. City of Adelanto, et al.* (1996) ("Judgment") assigned BAP rights to each producer using 10 AF or more, based on historical production from 1986 to 1990. Under the Mojave Basin Adjudication, each subarea received a BAP value, alongside subsequent FPA calculations based on a percentage of the BAP set annually by the Court for each Subarea. GSWC Barstow's BAP was set at 14,407 AFY. Parties to the Judgment are assigned a variable FPA, which is a percentage of the BAP set annually by the Court for each Subarea based on the Watermaster's recommendation. The BAP is reduced or "ramped down" over time until FPA comes within 5 percent of the Production Safe Yield (PSY) as defined by the Judgment. GSWC Barstow's FPA was set at 70 percent of its BAP (i.e., 10,085 AFY) and 10 percent of BAP for the Centro Subarea. It is noted that, for the purpose of balancing supply and demand, the MWA is currently ramping down FPA allocations for each Subarea by 5 percent each year. The purpose of the ramp down is not to cause a reduction in pumping, but a reduction in FPA so that the MWA increases imported water supply purchased to offset the deficit.

Projections suggest that the Mojave Basin Adjudication FPA within the GSWC area will stabilize after 2025, with an anticipated consistent yield of 7,204 AFY from 2025 through 2045 under all normal, single-dry, and multiple dry year scenarios. GSWC has also taken actions to protect its water supplies against hydrological and regulatory variability. Specifically, GSWC has invested time and effort into storing water assets for future use through the carryover of water from the Mojave Basin Adjudication. The carryover water supplies are derived from GSWC's unused FPA in each year. This carryover supply cannot exceed the previous year's FPA, thus any unused carryover supply is returned to the Centro Subarea to be considered in the Watermaster's annual basin reports. As of 2020-2021, GSWC's carryover supply totals were 11,526 AF. However, the GSWC understands that supplies will diminish due to non-use, and represented this trend in the UWMP by gradually decreasing their carryover FPA until within 5 percent of the Production Safe Yield as defined within the Mojave Basin Adjudication. Thus, GSWC, respectively maintains 55 percent of its FPA for 2025 supply projections and 50 percent of its FPA as maximum carryover supplies for all years following 2025 through 2045.

Imported Water. Although GSWC does not have any imported water connections or emergency interconnections, imported water is available from the MWA, which is contracted to receive imported

water from the SWP. The MWA captures and stores surplus imported water in normal and wet years to use those water assets to meet regional demands in dry years.

Surface Water. Groundwater is recharged into the basin through the infiltration of water from surface waters coming from the Mojave River. Other sources of surface water recharge include storm runoff from the mountain, desert washes, and other activities such as irrigation return flows, wastewater discharge, and recharge with imported surface water. When available, the MWA also stores these water resources in the Mojave Basin and the Morongo Basin for future uses.

Recycled Water. As of 2020, GSWC was developing recycled water supplies for potential future use, but these supplies are limited until sewer tertiary treatment methodologies can better address total dissolved solids contained in the produced water.

GSWC Water Supply Projections. GSWC anticipates its water supplies to range from 14,408 AF to 15,128 AF under normal conditions and during multiple dry years from 2025 to 2045. These total water supplies are derived from GSWC’s projected Mojave Adjudication BAP as well as projected carryover supplies from unused FPA. See **Table 5.17-6: Normal, Single, and Multiple Dry Year Water Supply (AF)** for GSWCs water supply projections through 2025-2045 for Normal, Single Dry, and Five Consecutive Dry Years. As shown in **Table 5.17-6**, GSWC projects that they will have a water supply ranging from 15,128 AF in normal dry year conditions for 2025 to 14,408 AF of water available in the worst 5th dry year scenario for 2045.

Capital Improvement Projects

Table 5.17-6: Normal, Single, and Multiple Dry Year Water Supply (AF) includes a description of some of the water supply capital improvement plans that MWA’s Mojave Region Integrated Regional Water Management Plan (IRWMP) has planned or ongoing for the City and regional supply reliability.

Table 5.17-7: Water Supply Capital Improvement Plan		
Project Name	Status	Project Summary
Replacement Water Supply for Perchlorate/Nitrate Affected Groundwater – Barstow Area	In progress	A feasibility study will be done to determine the most cost-effective and sustainable manner to design, construct and operate an alternative water supply for residents adversely affected by perchlorate and nitrate polluted groundwater in an unincorporated area northeast of Barstow.
Annual Cooperative Water Resources Program between the Mojave Water Agency and the United States Geological Survey	Conceptual	Continuation of the basin management program that monitors surface water and groundwater levels and water quality.
Barstow Cemetery District	In progress	Replace high water consuming turf, plants, and trees with native varieties, which are drought tolerant and water conserving. In addition to irrigation upgrades, refurbishing well equipment and retention basins.

Source: MWA, 2024b.

As shown in **Table 5.17-6**, there are several capital improvements occurring throughout the City and region that will support water supply. MWA alongside the other purveyors within the regional water management group are fundamental to shaping the IRWMP and future capital improvements. Alongside

other resources and initiatives, the City, GSWC and MWA work together to ensure that water supply and infrastructure capital improvement plans and projects are financed, completed, and maintained throughout the region.

GSWC is committed to responsibly maintaining the local water infrastructure to ensure it can continue providing customers with premium water service. These investments protect the safety and reliability of the local water system. GSWC approved their 2020 General Rate Case (GRC) on June 29, 2023, that invests over \$22 million in the Barstow water system projects going through 2024. The new rates are being invested in the service area's waste disposal systems, power loss prevention at treatment plants, water tank upgrades, and backup power equipment.

GSWC has prepared their GRC 2023 for projects throughout 2025-2027. The rates proposed for 2025-2027 will provide customers with long-term value by investing over \$27.9 million in proactive capital investments and maintenance of local water infrastructure essential to the delivery and treatment of reliable, quality water. Investments in the service area include, but are not limited to, water distribution projects, seismic and structural upgrades to two reservoirs, a treatment plant and a well, backup generators needed for uninterrupted treatment and delivery of water in the event of power outages, natural disasters and to reduce the strain on the electrical grid, and the replacement of aging infrastructure including water mains, electrical works, pumping and purification and safety equipment.

Table 5.17-8: Water System Capital Improvement Plan includes a list of GSWC Capital Improvement Plan (CIP) projects that are either in progress or are proposed as part of the 2023 GRC. These projects are either specific infrastructure improvements or specific studies and reports that will aid GSWC.

Table 5.17-8: Water System Capital Improvement Plan		
Project Name	Status	Project Summary
Agarita Reservoir Upgrades	Completed (2024)	Rehabilitation of Agarita Plant Reservoir will consist of new tank coating, tank repairs and safety upgrades.
Install Backup Generators – Phase 1	Proposed	Install permanent backup generators at three critical plant sites to increase the reliability of the Barstow System. Two generators are proposed at the Bradshaw Plant Sites and one generator at the Glen Road Plant Site.
Systemwide Hydraulic Evaluation	Proposed	Perform systemwide hydraulic evaluation to evaluate pressure zone boundaries, system operations, and facility locations.
2025 Urban Water Management Plan	Proposed	Retain engineering consultant to complete 2025 UWMP for the Barstow System.
Bradshaw Plant Wells 13 and 14 Electrical Upgrades	Proposed	Upgrade electrical equipment.
Glen Road Plant Well 2 Electrical Upgrades	Proposed	Upgrade electrical equipment.
Arrowhead Plant Well 2 Electrical Upgrades	Proposed	Upgrade electrical equipment.

Table 5.17-8: Water System Capital Improvement Plan		
Project Name	Status	Project Summary
Bradshaw Plant Expand Nitrate Treatment – Phase 1	Proposed	Expand nitrate treatment.
Basalt Zone Area Main Replacement and Zone Realignment – Phase 1	Proposed	Replace approximately 10,500 linear feet of small diameter steel mains with 8-inch and 12-inch diameter PVC mains.
Eaton Road Area Main Replacement	Proposed	Replace approximately 3,240 linear feet of small diameter asbestos cement mains with 8-inch diameter PVC (polyvinyl chloride) mains.

Wastewater Collection System and Wastewater Treatment Facility

The City’s sewer system consists of approximately 116 miles of gravity sewer lines, owned and maintained by the City (Carollo 2025). Sixty-four percent of wastewater generated is collected by the gravity sewer lines and transported to the wastewater treatment facility (WWTF), owned and operated by the City. The remaining effluent is handled by private septic systems. The majority of the sewer system serving the City is comprised of vitrified-clay pipe (VCP) ranging from 4 to 33 inches in diameter. However, the minimum diameter of sewer mains is typically 8-inch, while 4- to 6-inch diameters are often used for lateral connections. The locations of the existing sewer system facilities are depicted in **Figure 5.17-3: City of Barstow and SBCFCD Existing Storm Drain Facilities**.

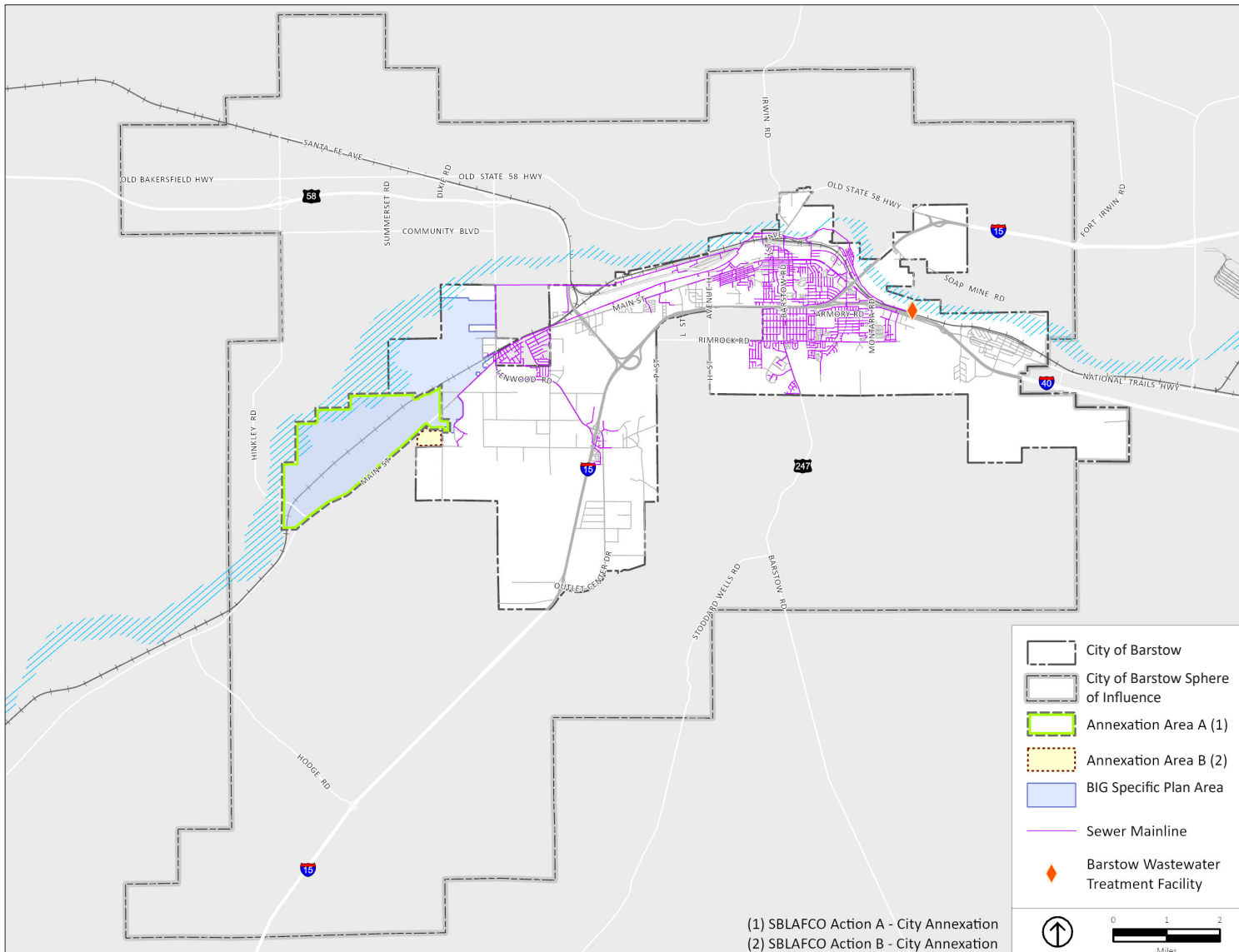
Wastewater in the proposed General Plan area is conveyed to and treated at the WWTF, which is owned and operated by the City. The WWTF has a design capacity of 4.5 mgd, a peak capacity of 7.7 mgd, and an average daily dry weather (ADWF) flow rate of 2.3 mgd. The WWTF provides primary and secondary treatment but not the tertiary treatment of effluent required to meet recycled water standards set forth in Title 22 of the California Code of Regulations. Wastewater is currently disposed of in percolation ponds after treatment.

The Carollo Analysis provides two recommended options for the City to consider for growth through 2048, and one for buildout beyond 2048. For growth through 2048:

Conventional Treatment Expansion: Continue using the existing conventional treatment processes, with upgrades and repairs as identified in the Carollo Analysis. Improvements would remain within the existing WWTF footprint.

Membrane Bioreactor: Replace the existing process with membrane bioreactor (MBR) technology, which would also remain within the existing site but would require new technology adoption by the City.

The existing ADWF is approximately 51 percent of the design ADWF which allows the City time to evaluate the best options available for expansion of the WWTF. After 2048 the City may need to construct a new WWTF on land that is already owned by the City adjacent to the existing WWTF. Once the new facility is operational, the existing plant could be phased out and ultimately abandoned (Carollo, 2025).



Source:
City of Barstow, 2025.

Figure 5.17-3
City of Barstow and SBCFCD Existing Storm Drain Facilities

Existing and Projected Sewer Flows

The Carollo Analysis established average and maximum daily dry weather sewer flows under existing and proposed conditions as shown in **Table 5.17-9: Existing Sewer Flows** shows the existing average and maximum daily wastewater flows to be 2.3 mgd and 2.7 mgd, respectively.

Table 5.17-9: Existing Sewer Flows		
Planning Horizon	ADWF (mgd)	MDDWF* (mgd)
Existing (2023)	2.3	2.7
Notes: ADWF = Average Dry Weather Flow MDDWF = Maximum Daily Dry Weather Flow *The MDDWFs were estimated using a MDDWF to ADWF peaking factor of 1.18.		
Source: Carollo Engineering Inc. Citywide Wastewater and Sewage Facilities Master Plan Project Memorandum, 2025.		

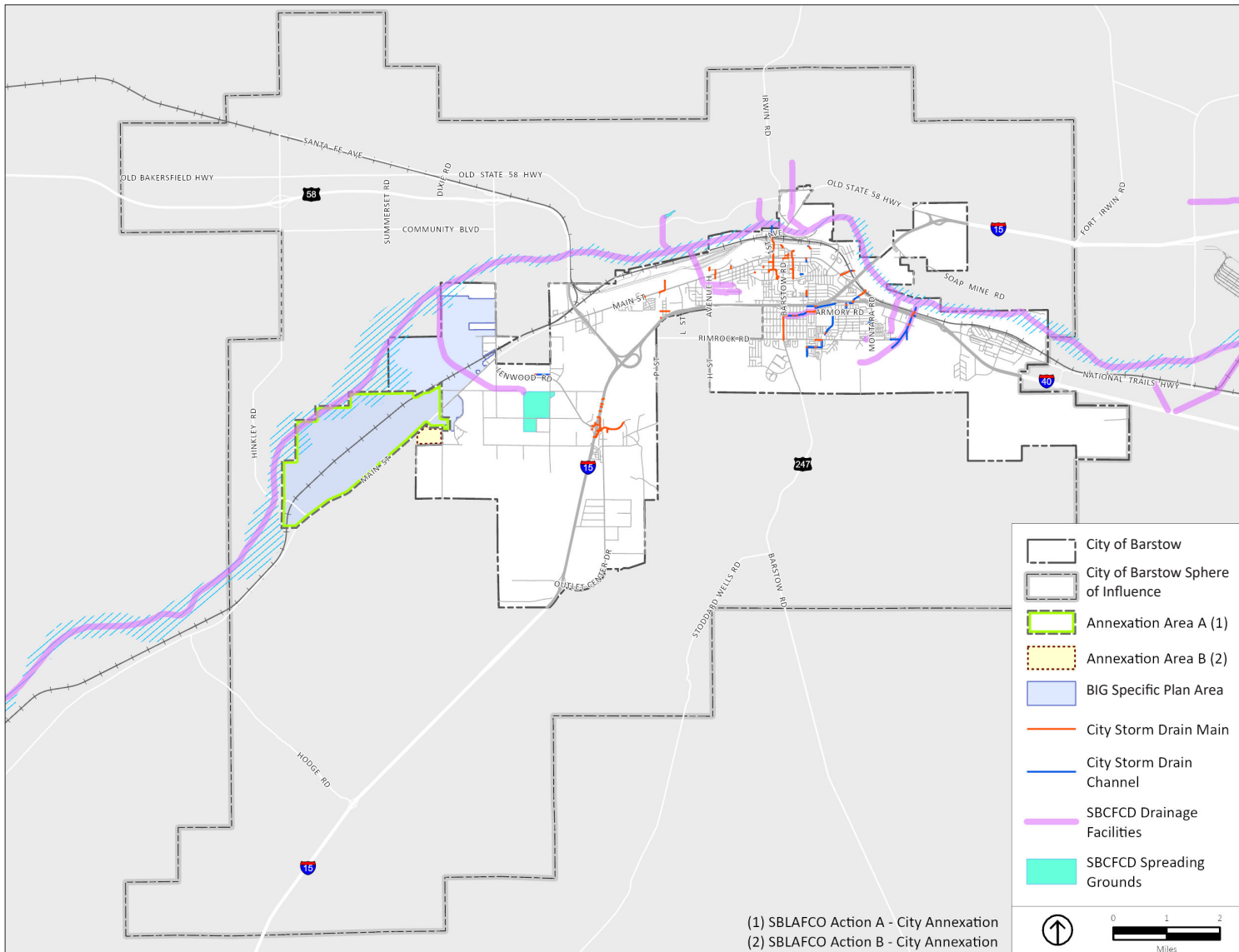
Sewer Capacity Assessment

The Carollo Analysis evaluated the capacity and condition of the City's sewer collection system and determined there are no significant deficiencies that have been identified in the existing system. The collection system is also adequate for growth projected through 2048, though there would be periods where surcharging may occur (Carollo, 2025).

Stormwater System

The City partners with the SBCFCD to maintain the local storm drain systems. The storm drain systems are comprised of catch basins, debris basins, and storm drain lines that convey stormwater runoff within roadways and underground. The proposed General Plan area also contains numerous channels that convey the collected water to the Mojave River. There is also a designated spreading ground location within the City that is utilized as a water conservation facility by retaining surface water long enough to allow it to percolate into the soil. The City and SBCFCD monitor and maintain the drainage infrastructure to ensure the systems function effectively. **Figure 5.17-4: City of Barstow Existing Sewer System Facilities**, shows the existing drainage infrastructure within the proposed General Plan area. The proposed General Plan area resides within Zone 4 (Desert Region) of the County's jurisdiction.

Individual projects to be responsible for construction of storm drain facilities in accordance with City requirements and standards. Hydrology studies would be reviewed and approved by City of Barstow Engineering Department. The SBCFCD reviews hydrology studies for runoff flows within their facilities and right-of-way only, not on projects within City jurisdiction. The City follows the San Bernardino County Hydrology Manual, which is published by San Bernardino County Water Resources Division, not SBCFD. Construction of drainage facilities performing excavation or deposition of soils within existing drainage swales will require review and approval from California Department of Fish and Wildlife (CDFW). Drainage facilities flowing into or constructed within Mojave River will require review and approval from U.S. Army Corps of Engineers (USACE).



Source:
City of Barstow, 2025; County of San Bernardino, 2025.

Figure 5.17-4
City of Barstow Existing Sewer System Facilities

Currently, there is one capital improvement project proposed to improve stormwater facilities, which consists of a second phase of improvements to the Laverne drainage system. The first phase improved catch basins on Laverne Ave, just south of Main Street, and the drainage system crossing Main Street and continuing north along Laverne Court, finally flowing into a BNSF drainage basin adjacent to private parcel at north end of Laverne Court. Phase II (pending construction) consists of a sedimentation/desiltation basin at the south end the future southerly extension of Laverne Avenue and street improvements (i.e., curb/gutter and asphalt concrete [AC] pavement) north to Main Street to convey basin overflow to the existing catch basins at Main Street.

Electric Power

The proposed General Plan area is in SCE's service area, which spans a 50,000 square mile area of southern California including Orange County and Riverside County to the south, Santa Barbara County to the west, and Mono County to the north, and the border of California with Arizona and Nevada to the east. Total electricity usage in SCE's service area was 82,971 gigawatt-hours (GWh) in 2022 (CEC, 2025a). Sources of electricity sold by SCE in 2022, the latest year for which data are available, were:

- 33.2 percent renewable, consisting mostly of solar and wind
- 3.4 percent large hydroelectric
- 24.7 percent natural gas
- 8.3 percent nuclear
- 0.1 percent other²
- 30.3 percent unspecified sources³ (SCE 2024).

As shown in **Table 5.6-3: Existing Electricity Usage**, Barstow's total estimated existing electricity usage, based on SCE data, is estimated at 160,612,715 kilowatt-hours (kWh) per year (160.6 GWh per year).

Natural Gas

Southwest Gas provides natural gas service to the proposed General Plan area. Southwest Gas provides natural gas service to Arizona, Nevada, and portions of California serving more than 2 million customers (SWG, 2024). Their southern California service area includes the southwestern portion San Bernardino County including the cities of Barstow, Big Bear, and Victorville (SWG, 2022). Total natural gas demand in Southwest Gas's service area was approximately 80 million therms in 2022 (CEC, 2025b).

Existing natural gas demand in the City, based on data provided by Southwest Gas, are estimated at 6,661,970 therms per year, as shown in **Table 5.6-4: Existing Natural Gas Demand**.

² On a Power Content Label, "other" typically refers to any electricity sources that don't fall under the specifically listed categories like solar, wind, natural gas, nuclear, or large hydroelectric; it usually includes a mix of smaller generation sources that may not be readily identifiable or tracked individually, often considered "unspecified power" on the label.

³ Unspecified power is electricity that has been purchased through open market transactions and is not traceable to a specific generation source.

Telecommunications and Internet Providers

Telecommunications services include wireless internet, cell phone and land line telephone, cable television, and satellite television. There are numerous telecommunication and internet providers that serve the proposed General Plan area. Telecommunication providers include AT&T, T-Mobile, Verizon, and others. Internet providers include Spectrum, Xfinity, AT&T, Frontier Communications, Lumens, T-Mobile, and others.

Solid Waste

Solid Waste Collection and Recycling. The City of Barstow maintains a contract for solid waste and recycling services with Burrtec Waste Industries (Burrtec). Burrtec collects solid waste including electronic waste; large/bulky items; green waste; and organic waste. All waste, except organic waste, are transported approximately 5 miles to the Barstow Sanitary Landfill located to the south of the City. Burrtec provides weekly pickups of organic waste and transports the material to its expanded Material Recovery Facility, Victor Valley Compost, where the organic waste is processed into compost/mulch and sold to farmers (Barstow, 2024b). The unincorporated SOI is also serviced by Burrtec (Meeka, 2024).

The City of Barstow's Waste Management and Recycling Division manages an integrated system of waste reduction, reuse, recycling, technology, customer service, and education. The Waste Management and Recycling Department is responsible for implementing the City's Source Reduction and Recycling Element and the Household Hazardous Waste Element mandated by the State of California (Barstow, 2024b).

Landfills. Solid waste from the proposed General Plan area is transported to the Barstow Sanitary Landfill which is part of the San Bernardino County landfill system. In 2024, the City generated 23,886 tons of waste (CalRecycle, 2025a; Meeka, 2024).

The Barstow Sanitary Landfill is permitted for a maximum throughput of 1,500 tons per day. The most recent available data indicated that as of May 1, 2024, the landfill had a remaining capacity of approximately 68 million cubic yards and an estimated closure date of May 1, 2071 (CalRecycle, 2025b). The landfill accepts sludge (biosolids), mixed municipal waste, industrial waste, construction and demolition waste, and agricultural waste. The landfill receives approximately 194 tons per day and has a residual daily capacity of 1,306 tons per day (CalRecycle, 2025c; Meeka, 2024).⁴ Landfills are subject to regular inspections from CalRecycle, San Bernardino County EHS, the RWQCB, and the South Coast Air Quality Management District.

Compliance with AB 939 is measured in part by comparing actual disposal rates for residents and employees to target rates; actual rates at or below target rates are consistent with AB 939. Target disposal rates for Barstow in 2023 were 8.9 pounds per day (ppd) per resident and 30.6 ppd per employee; actual disposal rates were 6.1 ppd per resident and 18.8 ppd per employee (CalRecycle, 2025d). Therefore, the City's solid waste diversion goals have been met.

⁴ The landfill received 86,940 tons of waste in 2022 and is assumed to operate 312 days per year.

Barstow International Gateway

Water Supplies and Facilities

GSWC Water Supplies. Detailed information on water purveyors and water supplies provided to the City are discussed in **Section 5.17. Environmental Setting**. GSWC Barstow is the water purveyor to an approximately 1,800-acre portion of BIG's footprint and the greater proposed General Plan area. The remainder of BIG's footprint (approximately 3,200 acres) is within unincorporated San Bernardino County and served by private groundwater wells. Water supplied to BIG's Specific Plan area is provided through groundwater obtained in an area of the Mojave Basin in which a court has designated water-right ownership (Adjudicated Area) (GSWC, 2021, p.4-1).

GSWC/MWA Water Facilities. There are currently no connections to the GSWC water system within the rail yard or transload warehouse center portions of BIG's footprint. The GSWC water facilities near the BIG footprint are depicted on **Figure 3-20: BIG Proposed Water Improvements** in **Section 3.0: Project Description** and comprised of an existing main at BIG's eastern portion in Jasper Road, and an existing main at BIG's eastern portion near Lenwood Road on the south side of Main Street. Additionally, various connections (i.e., associated with existing residential and commercial land uses along Main Street) exist near the eastern portion of BIG's footprint. Also, MWA owns and operates a recharge water line that crosses the BIG footprint.

BIG Footprint Existing Water Supplies and Demands

The BIG footprint is mostly vacant except for the eastern portion, which is within the City and the unincorporated Lenwood community and contains 108 dwelling units and 85,887 square feet of commercial uses. The transload warehouse center portion of the BIG footprint is primarily vacant, except approximately 7,837 square feet of industrial uses on the far eastern portion.

Table 5.17-10: Estimated Existing Water Demand – BIG

summarizes the water demand associated with these existing land uses and indicates it would total approximately 57 AFY. The existing water demands associated with existing land uses are served by GSWC Barstow or private groundwater wells.

The BIG footprint includes 1,585 AF of the Centro Subarea’s maximum annual water production capacity, or BAP and 793 AF of the Centro Subarea’s FPA or permitted usage quantity. Since 2000, BNSF’s water rights within BIG’s footprint consistently accumulated annual unused FPA because the available supplies exceeded demands. Unused BNSF FPA within BIG’s footprint has ranged from 74 AF to 1,892 AF and averaged 1,028 AF per year from 2000-2021 (GSWC, 2021, p.14).

Currently, BNSF holds 1,465 AF of annual water rights from acquired property within the BIG footprint and 120 AF of unused annual water rights from the existing BNSF Barstow Yard well (WWR, 2022, p.13).

Table 5.17-10: Estimated Existing Water Demand – BIG				
Description	Quantity	Water Demand Rate (gpd per Unit)	Water Demand (gpd)	Water Demand (AFY)
Residential	108 DU (325 persons)	159 gpd per capita	51,675	57.92
Commercial	85,887 SF (85 employees)	30 gpd per employee	2,550	2.86
Industrial	7,837 SF (7 employees)	30 gpd per employee	210	0.24
Total			54,435	61.02
Notes: DU = dwelling unit; gpd = gallons per day; AFY = acre-feet per year; SF = square feet Demand factor per worker is based on the BNSF estimates for water demand for employees/workers (Reference 1, Appendix B, of Appendix 5.17 BIG-2: Water Supply Assessment .				
Sources: Kimley-Horn, 2023.; EKI Environment Water, Inc. 2024. <i>Water Supply Assessment for Barstow International Gateway</i> . Daly City, CA: EKI Environment and Water, Inc.; Golden State Water Company (GSWC). 2021. <i>Barstow Service Area 2020 Urban Water Management Plan</i> . Page 4-2. Sacramento, CA: Tully & Young, Inc.				

BIG Footprint Water Facilities. The private water facilities within BIG’s footprint are comprised of distribution pipelines and various private groundwater wells; see **Figure 3-20: BIG Proposed Water Improvements** in **Section 3.0 Project Description**. The GSWC water facilities within and near the BIG footprint are the following: an existing water main in Jasper Road at the east end of the BIG footprint and an existing water main on the east end of the BIG footprint near Lenwood Road on the south side of Main Street. The private groundwater wells are located throughout the BIG footprint given the area outside the GSWC service area relies on groundwater wells for water supply.

Future Water Supplies and Demands. As previously noted, a portion of BIG is within GSWC Barstow’s service area. The Barstow 2020 UWMP (adopted July 16, 2021) was prepared to demonstrate water supply reliability within GSWC Barstow in a normal year, single-dry year, and droughts lasting at least five years over a 20-year planning horizon. In 2020, the GSWC Barstow service area had an average per capita water demand of 159 gallons per capita per day (gpcd), which was 77 gpcd below the 236 gpcd target amount projected by their 2015 UWMP. GSWC Barstow’s 159 gpcd average water demand therefore met the water use goals provided in the California Water Code § 10608.24(b) which required GSWC Barstow’s water use to be only 80 percent of the 2015 average (GSWC, 2021, p.4-2). **Table 5.17-6: Normal, Single, and Multiple Dry Year Water Supply (AF)** summarizes the GSWC Barstow water supplies for future years under normal, single-dry year, and multiple dry year conditions. The 2020 UWMP identifies that water supplies would meet the service area’s water demands for normal, single-dry, and multiple dry-year conditions through 2045 (GSWC, 2021, p.1-2).

Wastewater Facilities and Wastewater Treatment

Wastewater service within the BIG Specific Plan area is currently provided by the City. The wastewater system within the service area’s system is comprised of gravity sewers and private septic systems. The City owns and operates the public wastewater system that is available adjacent to the eastern portion of the BIG Specific Plan footprint, near Lenwood Road. The City sewer facilities near the BIG footprint are depicted on **Figure 3-21: BIG Proposed Wastewater Improvements** in **Section 3.0 Project Description** and comprised of a sewer main on the east side of Lenwood Road that flows north and then east along Agate

Road, and a sewer main in Main Street near Country Club Drive. Wastewater in the BIG Specific Plan area is conveyed to and treated at the WWTF.

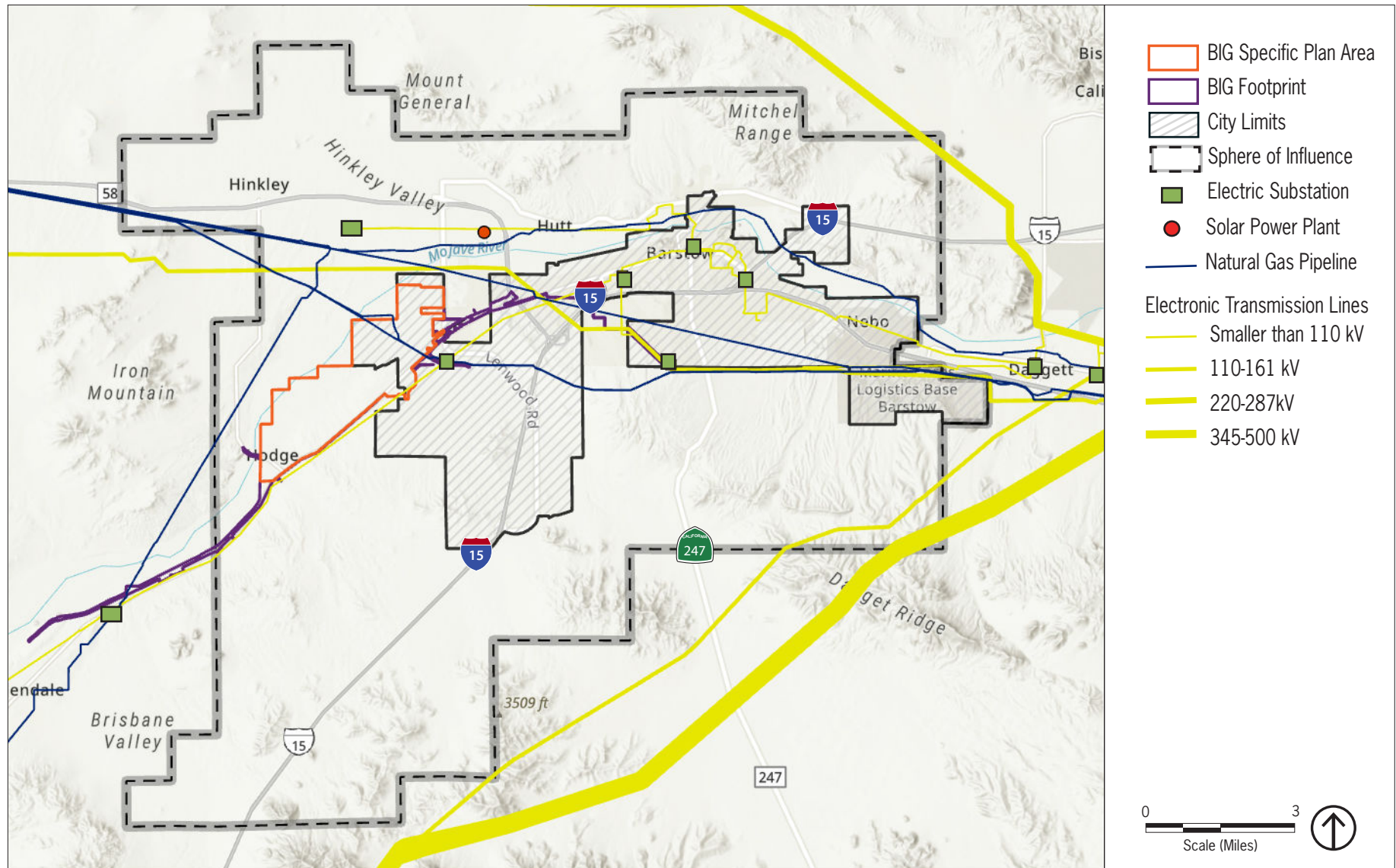
Wastewater Generation – Existing. Table 5.17-11: Estimated Existing Wastewater Generation – BIG summarizes the estimated existing wastewater generation associated with existing land uses within BIG’s footprint and indicates it totals approximately 0.03 mgd.

Table 5.17-11: Estimated Existing Wastewater Generation – BIG						
Description	Unit	Quantity ¹	Count	Generation Rate (gpd)	Generation (gpd)	Generation (mgd)
Residential ¹	1 Person	325 people	325	70	22,750	0.02
Commercial ¹	1 acre	85,887 SF	2.0	1,500	3,000	0.003
Industrial ³	1 acre	7,837 SF	0.2	1,500	300	0.0003
Total					25,750	0.02
Notes: DU = Dwelling Units; SF = square feet; gpd = gallons per day; mgd = million gallons per day; AFY = Acre-Feet per Year 1. Based on the Mix Density Residential Land Use Type 2. Based on the Commercial Land Use Type 3. Based on the Light Industrial Land Use Type						
Source: County of San Bernardino. 2020. Countywide Plan Draft Environmental Impact Report Section 5.18: Utilities. Table 5.18-2. page 5.18-16. https://countywideplan.com/wp-content/uploads/sites/68/2021/01/Ch_05-18-USS.pdf (Accessed September 2023)						

Electric Power

SCE provides electric power to the BIG Specific Plan area. SCE owns and manages electric power plants throughout southern California as well as conveyance facilities, which include distribution and transmission lines, electric poles, distribution transformers, and substation transformers. Electric power usage is further discussed in **Section 5.6: Energy**. The existing SCE electric power facilities within and near the BIG footprint are depicted on **Figure 5.17-5: Existing Energy Facilities – BIG** and are comprised of the following:

- Seven existing substations within the Barstow and Lenwood areas, including the Tortilla Substation, which is located approximately 0.4-mile south of the Veterans Parkway and Diamond Avenue intersection (Data Basin, 2022);
- Several distribution power lines paralleling Main Street; and
- A transmission line that crosses the BNSF main lines east of Highway 58.



Sources:
ESRI, *World Street Map* [Basemap], 2024.; County of San Bernardino, *Cities and Towns* [Data set], 2022.; County of San Bernardino, *City Spheres of Influence* [Data set], 2022.; California Energy Commission, *California Electric Transmission Lines* [Data set], 2025.; California Energy Commission, *Electric Substations, California* [Data set], 2020.; National Pipeline Mapping System (NPMS), *Public Viewer* [Web Map], 2022

Figure 5.17-5
Existing Energy Facilities - BIG

Stormwater

The BIG footprint is primarily undeveloped and does not currently have on-site stormwater infrastructure.

Table 5.17-12: Estimated Existing Electric Power Usage – BIG summarizes the annual electric power usage associated with the existing land uses within BIG’s footprint and indicates it totals approximately 2,458 megawatt-hour (MWh).

Table 5.17-12: Estimated Existing Electric Power Usage – BIG			
Description	Quantity	Annual Demand (kwh)	Annual Demand (MWh)
Residential ¹	108	821,839	822
Commercial ²	85,887 SF	1,498,890	1,499
Industrial ³	7,837 SF	136,771	137
Total		2,457,500	2,458
Notes: SF = square feet; MWh = megawatt-hour; kwh = kilowatt hour 1. Based on Single Family Housing Land Use Subtype of CalEEMod 2. Based on General Office Building Land Use Subtype of CalEEMod 3. Based on Industrial Park Land Use Subtype of CalEEMod			
Source: CalEEMod, 2023			

Natural Gas

Southwest Gas provides natural gas service to the BIG Specific Plan area. This area includes various Southwest Gas facilities, such as distribution pipelines. The National Pipeline Mapping System’s Public Map Viewer shows Kinder-Morgan operates two 42-inch gas transmission lines within the BIG footprint, generally adjacent to Lenwood Channel (NPMS, 2022). Both natural gas distribution pipelines cross the BIG footprint. Additionally, the review of the State of California Geologic Energy Management Division (CalGEM) Oil, Gas and Geothermal Fields in California map (CalGEM, 2023) and the CalGEM Well Finder database (CalGEM, 2023) shows that the BIG footprint is not in or near oil or natural gas fields or wells.

Table 5.17-13: Estimated Existing Natural Gas Demand – BIG summarizes the natural gas demand associated with the existing land uses within BIG’s footprint and indicates it totals approximately 5,951,077 thousand British Thermal Units (kBtu).

Table 5.17-13: Estimated Existing Natural Gas Demand – BIG		
Description	Quantity	Demand (kBtu) ⁴
Residential ¹	108 DU	3,379,289
Commercial ²	85,887 SF	2,356,741
Industrial ³	7,837 SF	215,047
Total		5,951,077
Notes: DU = dwelling unit; SF = square feet 1. Based on Single Family Housing Land Use Subtype of CalEEMod 2. Based on General Office Building Land Use Subtype of CalEEMod 3. Based on Industrial Park Land Use Subtype of CalEEMod 4. kBtu = thousand British Thermal Units		
Source: CalEEMod, 2023.		

Telecommunications

Internet service in BIG's Specific Plan area is provided by Spectrum, Frontier Communications, Lumen, T-Mobile, Viasat, HughesNet, and Earthlink. Cable service within BIG's study is provided by Spectrum, DirecTV, and Dish (CableTV, 2022).

Solid Waste

Burrtec Waste Industries (Burrtec) provides solid waste pick-up and recycling services within the City and BIG's Specific Plan area. Burrtec operates multiple transfer and recycling centers. The center nearest BIG's footprint is in the City of Victorville, approximately 20 miles to the south. Construction and demolition debris are sent either directly to a recycling partner or to Barstow Landfill for sorting and recycling.

The Barstow Sanitary Landfill receives the BIG Specific Plan area's non-recyclable municipal solid waste. The Barstow Sanitary Landfill occupies 645 acres and has a maximum capacity of 80,354,500 cubic yards (cy) with 71,481,660 cy remaining. The Barstow Sanitary Landfill is permitted to accept waste in the forms of sludge (BioSolids), industrial waste, construction and demolition waste, agricultural waste, and other designated waste (CalRecycle, 2025b). The maximum daily throughput for this landfill is 1,500 tons per day (tpd). As summarized above, the City is required to comply with Integrated Waste Management Act and AB 939 regulations, which require diversion of at least 50 percent of solid waste for recycling uses.

Table 5.17-14: Estimated Existing Solid Waste Generation – BIG summarizes the solid waste generation associated with the existing land uses within BIG's footprint and indicates it totals approximately 2,279 pounds per day (lbs./day) or 1.2 tons per day (tons/day).

Table 5.17-14: Estimated Existing Solid Waste Generation – BIG				
Use	Quantity	Generation Rate	Solid Waste Generation (lbs/day)	Solid Waste Generation (tons/day)
Commercial	85 employees	10.53 lb./employee/day	895	0.5
Residential	108 dwelling units	12.23 lb./household/day	1,321	0.66
Industrial	7 employees	8.93 lb./employee/day	63	0.03
Total			2,279	1.19
Sources: Kimley-Horn, 2023; CalRecycle. 2022. <i>Estimated Solid Waste Generation Rates</i> . CalRecycle. https://www2.calrecycle.ca.gov/wastecharacterization/general/rates . Accessed August 23, 2022.				

5.17.5 IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

State CEQA Guidelines **Appendix G Environmental Checklist Form** includes questions concerning utilities and service systems. The issues presented in the Environmental Checklist Form have been used to formulate thresholds of significance in this section. Accordingly, the proposed Project would have a significant effect concerning utilities and service systems if it would:

- **Impact 5.17-1:** Require or result in the relocation or construction of new or expanded water, wastewater/wastewater treatment, stormwater facilities, electric power, natural gas, or

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

- **Impact 5.17-2:** Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years.
- **Impact 5.17-3:** Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.
- **Impact 5.17-4:** Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals or
- **Impact 5.17-5:** Comply with federal, State, and local management and reduction statutes and regulations related to solid waste.

5.17.6 PROJECT IMPACTS AND MITIGATION MEASURES

Applicable Proposed General Plan Policies

The proposed General Plan goals and policies relevant to utility and service systems are listed below.

Open Space and Conservation Element

- **Policy OSC-4.1 Sustainable water supply.** Collaborate with the state, regional water quality control boards, watermasters, water purveyors, military, and other entities to ensure a safe and sustainable supply of drinking water.
- **Policy OSC-4.2 Groundwater management.** Collaborate with the Golden State Water Company and Mojave Water Agency to ensure the sustainable management of groundwater basins.
- **Policy OSC-4.3 Groundwater recharge.** Encourage new development to install stormwater management facilities that facilitate groundwater recharge, particularly for properties in proximity to the Mojave River.
- **Policy OSC-4.4 Stormwater and urban runoff.** Require site design and operational procedures that reduce, treat, and capture stormwater and urban runoff comply with state and federal requirements to protect groundwater and the natural environment.
- **Policy OSC-4.5 Natural features.** Encourage the use of existing natural features to serve as stormwater management and groundwater recharge facilities, particularly when the retention of such features would create meaningful open space for people, high-value habitat, and/or protected wildlife.
- **Policy OSC-4.6 Military coordination on water supply and quality.** Collaborate with the military to prevent groundwater contamination and stormwater runoff both from and onto military facilities. Coordinate long-term planning efforts to avoid or minimize impacts on military training and operations from inadequate groundwater supply.

Safety Element

- **Policy S-1.5 Water for fire protection.** Coordinate with water suppliers and fire protection agencies to ensure adequate provision of water supplies for structural fire suppression.
- **Policy S-2.8 Healthy, resilient, and efficient buildings.** Encourage and pursue funding for improvements to existing residential and nonresidential buildings consistent with the latest state building code requirements for indoor air quality; energy efficiency; energy storage; disaster and severe weather resilience; and solar power. As funding is obtained, prioritize improvements for buildings that are both within 500 feet of a freeway or railroad and intended for use by residents or employees for at least eight hours a day.
- **Policy S-3.2. Pipelines and electrical transmission lines.** Require new development to incorporate appropriate site designs that are consistent with easements for major natural gas transmission or hazardous liquid pipelines. Prohibit the development of new hazardous waste facilities within such easements. For new development within 500 feet of such easements, require hazardous materials storage areas to be located as far from these pipelines and electrical transmission lines as possible.

Housing Element

- **Policy H-3.4** Maintain the provision of needed capital improvements, such as parks, water and service infrastructure, and public safety services that are essential to quality of life.

Land Use Element

- **Policy LU-1.6 Sphere of influence.** Coordinate with the County to ensure that any future development that is approved by the County in the City's unincorporated sphere of influence (SOI) is compatible with existing development in Barstow's incorporated boundaries, planned land uses as identified in the City's General Plan, adopted pre-zoning and specific plans that are within the City's unincorporated SOI, and planned roadway and utility infrastructure.
- **Policy LU-2.3 Concurrent infrastructure and services.** Approve development only when necessary infrastructure and services will be available and provided prior to or concurrent with occupancy.
- **Policy LU-2.5 Fiscal impact of new development.** Require new development to pay its fair share for necessary infrastructure, services, and on- and off-site capital improvements. Require amendments to the General Plan to include an analysis of the fiscal impact and discourage amendments that would not have a fiscally neutral or positive impact on the City budget.
- **Policy LU-2.6 Financing mechanisms.** Require new development to employ special assessment districts and other financing mechanisms for improvements to and expansions of existing public services and infrastructure (including capital costs and ongoing operations and maintenance), when necessary to maintain fiscal neutrality. Explore opportunities to establish financing mechanisms to improve public services and infrastructure in existing neighborhoods or districts.
- **Policy LU-2.7. County development.** Coordinate with the County to establish and implement fees that address fair share impacts of development in unincorporated areas on City roadways, infrastructure, and public services.

Public Facilities and Services Element

- **Policy PFS-1.1 Reliable access to water.** Require new lots that are within 200 feet of existing water service to be connected to an urban water supplier or County-regulated public water system to ensure a clean and resilient supply of potable water, even during cases of prolonged drought.
- **Policy PFS-1.2 Recycled and reclaimed water.** Expand the City's recycled water capabilities and encourage the use of recycled water for landscaping, groundwater recharge, direct potable reuse, and other appropriate uses. Support the use of greywater systems for non-potable purposes.
- **Policy PFS-1.3 Water conservation.** Encourage water-conserving site design and the use of water-conserving fixtures, and advocate for the adoption and implementation of water conservation strategies by water service agencies.
- **Policy PFS-1.4 Sewer system connection.** Require new lots that are within 200 feet of existing sewer service and/or smaller than one-half acre to be served by a sewer system. Sewer service may be required for larger lot sizes depending on local soil and groundwater conditions.
- **Policy PFS-1.5 Sewer system maintenance and improvements.** Monitor, maintain, and make sewer system improvements as necessary to ensure safe, reliable, and cost-effective wastewater collection and treatment facilities.
- **Policy PFS-1.6. Water and sewer priority.** Communicate and process development applications in a manner that prioritizes service allocation to approved developments that include housing affordable to lower income households.
- **Policy PFS-1.7 Flood control.** Maintain the local storm drain system to convey a 100-year storm and collaborate with the San Bernardino County Flood Control District and other state and federal agencies to maintain regional flood-control infrastructure to minimize flood damage.
- **Policy PFS-1.8 Solid waste.** Provide a solid waste management system that meets or exceeds state recycling and waste diversion mandates while providing cost-effective disposal of waste for residents, businesses, and institutions.
- **Policy PFS-1.9 Electricity and natural gas.** Coordinate with Southern California Edison and Southwest Gas to ensure the safe, reliable, and cost-effective delivery of electricity and natural gas to homes, businesses, and institutions.
- **Policy PFS-1.10 Telecommunications.** Encourage the expansion of affordable, high-speed fixed and wireless internet access in underserved and unserved areas, as defined by the California Public Utilities SBLAFCO.
- **Policy PFS-1.11 Coordination on improvements in the right-of-way.** Encourage and facilitate coordination between entities responsible for infrastructure, telecommunications, and utilities so that improvements are made concurrently or in such a manner that minimizes disruption to rights-of-way and reduces costs.

Impact 5.17-1 *Would the Project 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?*

Proposed General Plan

Construction and Operations

Water

GSWC's water system functions effectively to deliver water demands. The GSWC and the City track and monitor the condition of the water infrastructure to provide a reliable water infrastructure network. **Table 5.17-8** includes a list of GSWC CIP projects that are either in progress or are proposed as part of the 2023 water rates. These projects are either specific infrastructure improvements or specific studies and reports that would aid GSWC.

Future development under the proposed General Plan would require the construction of new water infrastructure where existing water lines are not sufficient to accommodate the increased water demands. These determinations would be made on a project-by-project basis including site specific fire flow tests and hydraulic pressure analyses. The proposed improvements may include upsizing on-site and off-site water lines and additions of boosters in low pressure areas.

In those conditions, where hydraulic or capacity impacts affect other service areas, the developer is responsible for paying for impacts through their connection fees. In addition, the 2025 UWMPs will be required to incorporate the proposed land use changes into their water demand and supply projections out to 2050. GSWC would also update its water rates and CIP accordingly to include any additional water system projects pursuant to the proposed General Plan buildout.

Additionally, future development under the proposed General Plan would require construction of new on-site and off-site water infrastructure in areas of the City that are undeveloped under the current condition. Water improvements include new potable water lines, reservoirs and pumps. All infrastructure must abide by the standards of the respective water district and would require approval from the water district. Prior to ground disturbance, construction contractors would coordinate with GSWC or other water districts (as applicable) to identify the locations and depth of all underground pipelines. The water district would be notified in advance of proposed ground disturbance activities to avoid water lines and disruption of water service.

The environmental effects resulting from relocation/construction of water facilities to accommodate future development under the proposed General Plan are discussed as part of the proposed General Plan's overall environmental analyses in **Sections 5.1** through **5.17**. The construction of the on-site and off-site water lines and associated improvements would primarily include trenching for installation of the pipelines and then filling of the trench with a covering similar to existing or proposed conditions (soil), or under roadways (asphalt or concrete) and within utility easement(s) to allow for repairs if necessary. All

construction would be performed in accordance with the SWRCB's General Construction Permit and all associated requirements. Additionally, environmental clearance, including CEQA review where applicable, for the construction of any new water facilities would be required on a project-by-project basis.

The proposed General Plan includes policies, such as Policies H-3.4 and LU-2.3, that promote the maintenance of adequate infrastructure approving development only when the required infrastructure and services are available and provided prior to or concurrent with occupancy. Proposed General Plan Policies LU-2.5, LU-2.6, and LU-2.7 address the fiscal impacts of new infrastructure associated with new development.

Wastewater Collection and Treatment

Under SBLAFCO Actions A and B, the proposed General Plan proposes annexation to the City (i.e., the Environmental Services Division wastewater service area) of approximately 2,785 acres; see **Section 3.0: Project Description** for detailed discussions. Implementation of the proposed General Plan would require construction/relocation of new sewer infrastructure on site and off the site in areas of the City that are undeveloped. All new development is intended to be connected to the City's sewer system and the City's Carollo Analysis identifies backbone sewer alignments and sizing to accommodate the future growth (Carollo, 2025). Off-site infrastructure includes installation of new sewer lines with the anticipation that most of the improvements would occur within the proposed roadway network and/or utility easements, which would be done on a project-by-project basis. On-site infrastructure would typically include new 8-inch sewer lines for most projects within the City with larger trunk lines in the public right of way leading to the WWTP. No new lift stations are anticipated but could be needed based on individual project needs. The need for a lift station would be evaluated during project review.

For this EIR, the proposed General Plan data is mapped and parcels projected to be developed by 2048, including the BIG Specific Plan, are included in the Carollo Analysis. The Carollo Analysis shows that additional improvements at the WWTP would not be needed for projected growth through 2048, with the projected growth able to be accommodated through one of two options related to improvements to the existing WWTF (**Carollo Analysis**). The Carollo Analysis included a hydraulic model for the proposed land uses and sewer flows based on development of the City through the 2048 planning period and shows:

ADWF: No surcharging is projected to occur. Pipeline d/D ratios are mostly below 0.50, though segments near the BNSF area, Main Street, Montara Road, and Rimrock Road may have d/D ratios between 0.50 and 0.75.

MDDWF: Pipeline d/D ratios are projected to increase in the same areas noted during the 2048 ADWF analysis. Two segments in Agate Road near Ranch Road are projected to surcharge, and one segment in Nancy Street west of Avenue G showed relatively high peak flow depths (d/D 0.75 to 0.90).

PWWF: Surcharging is projected to occur upstream of the BNSF railyard in Agate Road west of Osborne Road as well as Nancy Street west of Avenue G due to capacity limitations. Additional pipes in the system are projected to experience higher d/D values, particularly along the BNSF railyard, Main Street, and Montara Road, where d/D ratios between 0.75 and 0.90 occur.

General Plan Policy PFS-1.5 establishes that the City will monitor, maintain, and make sewer system improvements as necessary to ensure safe, reliable, and cost-effective wastewater collection and treatment facilities. The City maintains and periodically updates its sewer master plan to identify necessary improvements to accommodate projected growth. Additionally, the City applies conditions of approval, enters into development agreements, and applies development impact fees to ensure that proposed development will pay for and establish required sewer improvements, both for individual site and (in a proportional manner) the overall system.

All wastewater infrastructure construction would be performed in accordance with the SWCB's General Construction Permit and all associated requirements. Any work that may include connections of new services to existing sewer lines would be coordinated with the City. Additionally, CEQA review, as applicable, for the construction of any new wastewater conveyance facilities would be completed on a project-by-project basis.

The environmental effects resulting from relocation/construction of wastewater facilities to accommodate future development under the proposed General Plan are discussed as part of the proposed General Plan's overall environmental analyses in **Sections 5.1** through **5.17**. Impacts associated with sewer line extension include trenching and recovering of the pipe with materials similar to existing condition (soil) or under roadways (asphalt or concrete). Construction impacts are generally limited to noise for trenching, generation of dust during construction, and traffic management if roadways need to be temporarily closed during construction. Cultural and biological resources may also be affected depending on the route of the improvement(s) and the extent of construction and staging in areas where materials and construction equipment is kept prior to use. These impacts are similar to construction impacts addressed throughout this EIR and if necessary, specific mitigation would be applied during environmental review for the improvement.

Stormwater System

New development/redevelopment under the proposed General Plan would result in an increase in impervious surfaces, which in turn could result in an increase in stormwater runoff, higher peak discharges to drainage channels, and the potential to cause nuisance flooding in areas without adequate drainage facilities. The Regional MS4 permit defines priority development projects as projects that would be required to implement site design, source control, and stormwater treatment and runoff measures using specific numeric sizing criteria based on the volume and flow rate of stormwater that is generated by the project. Each priority development project must prepare a project-specific WQMP, which undergoes review by City personnel to ensure that the regulatory requirements for temporary on-site stormwater runoff retention have been met. Project-specific WQMPs would include BMPs to reduce stormwater impacts; such BMPs may include, but are not limited to, bioretention basins, permeable pavement, and infiltration trenches. Priority development projects must also adhere to the hydromodification requirements of the MS4 permit.

The environmental effects resulting from relocation/construction of stormwater facilities to accommodate future development under the proposed General Plan are discussed as part of the proposed General Plan's overall environmental analyses in **Sections 5.1** through **5.17**. Individual projects

would be responsible for the design and construction of storm drain facilities in accordance with SBCFCD requirements and would be required to comply with applicable regulations, such as Barstow Code Chapter 15.14, Stormwater and Urban Runoff Pollutant Control. Future development under the proposed General Plan, would also need to prepare hydrology studies that would be reviewed and approved by SBCFCD. SBCFCD's Hydrology Manual presents the design criteria to be used for such studies. The City utilizes the City's Master Plan of Drainage and the San Bernardino County's Hydrology Manual to ensure all development within the City does not adversely impact the current hydrologic conditions within the City.

Policies LU-2.5 and LU 2.7 require that new development pay their fair share for necessary infrastructure capital improvements and to coordinate with the County to establish and implement fees that address fair share impacts of development in unincorporated areas on City infrastructure.

Additionally, the County must obtain environmental clearance, including CEQA review and obtain relevant resource permits, for the construction of any new drainage facilities. Long-term maintenance of new facilities would be incorporated into the Master Stormwater System Maintenance Plan, with any Standard Operational Procedures, mitigation measures, and/or permit conditions for those facilities incorporated into the Maintenance Plan and the applicable appendices of the Maintenance Plan updated. As a result, the Maintenance Plan would serve as the County's current comprehensive guide detailing all maintenance activities, Standard Operational Procedures, mitigation measures, and/or permit conditions.

Compliance with the MS4 permit and City and County requirements would ensure that future development under the proposed General Plan would not result in significant increases in runoff and would not contribute to the construction of new storm drain facilities or expansion of existing facilities that would cause significant environmental impacts. In addition, the County would continue to repair, rehabilitate, and upgrade the storm drain system through implementation of the CIP program.

Electricity

Electrical service to the proposed General Plan area is provided by SCE through connections to existing off-site electrical lines and new on-site infrastructure. As identified in **Table 5.6-9**, by horizon year 2048, electricity use in the General Plan area would increase by 172,661,731 kWh/year, or approximately 108 percent over existing conditions. The increase of 172,661,731 kWh/year (174 gigawatt-hours [GWh]/year) associated with the proposed General Plan is approximately 0.2 percent of the total electricity consumption for SCE in 2022 of 82,971 GWh/year. Total electricity consumption in SCE's service area is forecast to increase by approximately 23,026 GWh/year between 2020 and 2035 (CEC, 2024b). The anticipated increase in electricity consumption associated with the proposed General Plan would be one percent of the total anticipated increase in electricity consumption for SCE's service area within this projection. SCE forecasts that it would have sufficient electricity supplies to meet needs in its service area.

While electricity usage for the proposed General Plan area would increase compared to existing conditions, development accommodated under the proposed General Plan would be required to comply with the current and future updates to the Building Energy Efficiency Standards and CALGreen, which would contribute to reducing the energy consumption shown in **Table 5.6-9**. New and replacement buildings in compliance with these standards would generally have greater energy efficiency than existing

buildings. It is anticipated that each update to the Building Energy Efficiency Standards and CALGreen would result in greater building energy efficiency.

Additionally, the proposed General Plan includes Policies S-2.8, H3.4, and LU-2.3 to encourage and pursue funding for improvements to existing residential and nonresidential buildings consistent with the latest State Building Code requirements energy efficiency, energy storage, and solar power; maintain the provision of needed capital improvements that are essential to quality of life; and approve development only when necessary infrastructure and services will be available and provided prior to or concurrent with occupancy. The proposed General Plan also contains Policy PFS-1.9 to encourage and facilitate coordination between entities responsible for infrastructure and utilities so that improvements are made concurrently or in such a manner that minimizes disruption to rights-of-way and reduces costs.

The environmental effects resulting from relocation/construction of electrical facilities to accommodate future development under the proposed General Plan are discussed as part of the proposed General Plan's overall environmental analyses in **Sections 5.1** through **5.17**. Future development under the proposed General Plan could require the construction of new electricity infrastructure where existing lines are not sufficient to accommodate the increased needs. These determinations would be made on a project-by-project basis. The proposed improvements may include new or relocated power lines, underground line construction, new substations, or upgrades to existing substations. All infrastructure must abide by the standards of SCE; SCE would be notified in advance of proposed ground disturbance activities to avoid power lines and disruption of electric service. Any work that may include connections of new services to the existing power lines would be coordinated with SCE.

All construction would be performed in accordance with the SWRCB's General Construction Permit and all associated requirements. Additionally, environmental clearance, including CEQA review where applicable, for the construction of any electric facilities would be required on a project-by-project basis. Additionally, SCE must obtain environmental clearance, including CEQA review and obtain relevant resource permits, for the construction of any applicable infrastructure such as upgrades to power plants or the construction of new power plants.

Natural Gas

As shown in **Table 5.17-15: Year 2048 Forecast Natural Gas Demand**, existing natural gas use in the proposed General Plan area totals 6,661,970 therms annually. By 2048 with implementation of the proposed General Plan, natural gas use in the proposed General Plan area would increase by 3,243,734 therms annually, or approximately 49 percent, from existing conditions to a total of 9,905,704 therms per year. This increase of 3,243,734 therms associated with the proposed General Plan is approximately 4 percent of the total natural gas consumed in the Southwest Gas's service area in 2022 of approximately 80 million therms.

While natural gas demand for the proposed General Plan area would increase compared to existing conditions, development accommodated under the proposed General Plan would be required to comply with the General Plan policies, current and future updates to the Building Energy Efficiency Standards, and CALGreen, which would contribute to reducing the natural gas demands shown in **Table 5.17-15**. New and replacement buildings in compliance with these standards would generally have greater energy

efficiency than existing buildings. It is anticipated that each update to the Building Energy Efficiency Standards and CALGreen would result in greater building energy efficiency and move closer toward buildings achieving zero net energy.

Table 5.17-15: Year 2048 Forecast Natural Gas Demand			
Use	Natural Gas Usage (therms per year)		
	Existing Baseline ¹	Year 2048 Forecast ²	Net Change
City¹			
Residential	2,861,769	4,895,508	2,028,739
Nonresidential	1,927,933	3,149,295	1,221,362
Transportation ²	275,650	275,650	0
CNG ³	193,628	193,628	0
Other ⁴	214,886	214,886	0
BIG Project			
Nonresidential	n/a	0	0
Unincorporated SOI			
Residential	1,014,624	1,026,047	11,422
Nonresidential	173,479	155,690	(17,789)
Total	6,661,970	9,905,704	3,243,734
Notes: ¹ The BIG property is contained partially within the City boundaries and partially in the City's SOI. Therefore, the existing BIG consumption data for residential is included in the existing total residential estimates for the City and SOI and is not treated as additive consumption. ² Customers that procure their own gas, and it is delivered to the customer on Southwest Gas' system. ³ Defined as 'Natural Gas for Motor Vehicles'. ⁴ Defined as 'SML Electric Power Generation Gas Svc * Electric Generation' & 'Military'.			

Additionally, the proposed General Plan includes Policies S-2.8, S-3.2, H-3.4, and LU-2.3 to encourage and pursue funding for improvements to existing residential and nonresidential buildings consistent with the latest State Building Code requirements for energy efficiency; require new development to incorporate appropriate site designs that are consistent with easements for major natural gas transmission or hazardous liquid pipelines, maintain the provision of needed capital improvements that are essential to quality of life; and approve development only when necessary infrastructure and services will be available and provided prior to or concurrent with occupancy. The proposed General Plan also includes policies PFS-1.9 and PFS-1.10 that promote coordination with Southwest Gas to ensure the safe, reliable, and cost-effective delivery of natural gas and to coordinate improvements in the right-of-way.

Implementation of projects consistent with the proposed General Plan could require the construction of new natural gas infrastructure where existing pipelines are not sufficient to accommodate the increased demands. These determinations would be made on a project-by-project basis. All infrastructure must abide by the standards of Southwest Gas and Southwest Gas would be notified in advance of proposed ground disturbance activities to avoid natural gas pipelines and disruption of natural gas service. Any work that may include connections of new services to the existing pipelines would be coordinated with Southwest Gas.

The environmental effects resulting from relocation/construction of natural gas facilities to accommodate future development under the proposed General Plan are discussed as part of the proposed General Plan's overall environmental analyses in **Section 5.1** through **Section 5.17**. All construction would be performed in accordance with the SWRCB's General Construction Permit and all associated requirements. Additionally, environmental clearance, including CEQA review where applicable, for the construction of any natural gas pipelines would be required on a project-by-project basis. Additionally, Southwest Gas must obtain environmental clearance, including CEQA review and obtain relevant resource permits, for the construction of any applicable infrastructure such as upgrades to natural gas pipelines or the construction of new pipelines.

Telecommunications

A number of franchised telecommunications providers are available in the region and would provide telecommunication services to future development under the proposed General Plan. Infrastructure supporting telecommunications services associated with the proposed General Plan would be provided and installed in compliance with all State and local regulations. Telecommunication providers must obtain environmental clearance, including CEQA review and obtain relevant resource permits as applicable, for the construction of infrastructure such as upgrades data centers and telecommunication towers.

Additionally, proposed General Plan Policy PFS-1.10 and PFS-1 call for working with telecommunications service providers so that improvements are made concurrently or in such a manner that minimizes disruption to rights-of-way and reduces costs and that development is approved only when necessary, infrastructure and services are available and provided prior to or concurrent with occupancy. Therefore, the proposed General Plan would not require new or expanded telecommunication facilities, the construction or relocation of which could cause significant environmental effects, and impacts would be less than significant.

Conclusion

The environmental effects resulting from construction of utility and service system facilities to accommodate future development under the proposed General Plan are discussed as part of the proposed General Plan's overall environmental analyses in **Sections 5.1** through **5.17**. The proposed General Plan's environmental impacts have been largely mitigated to less than significant levels with implementation of standard development procedures included in the Barstow Code and engineering standards, as well as mitigation measures explained in each EIR section. However, certain impacts (i.e., concerning aesthetics, agricultural resources, air quality, cultural resources, noise and vibration, transportation, and tribal cultural resources) would remain significant despite the application of mitigation measures. Therefore, the environmental impacts of utility and service system facility upgrades and maintenance consistent with the proposed General Plan would be significant and unavoidable. See **Table 1-1: Proposed General Plan: Summary of Significant Impacts, Proposed Mitigation Measures, and Levels of Significance After Mitigation** in **Section 1.0: Executive Summary** which identifies the proposed General Plan's impacts, mitigation measures, and levels of significance before and after mitigation.

Impact 5.17-1: General Plan: Level of Significance Before Mitigation: Potentially Significant Impact.

Impact 5.17-1: General Plan: Mitigation Measures: Mitigation measures provided in **Section 5.1** through **Section 5.17** are proposed to minimize environmental impacts associated with the proposed General Plan inclusive of utilities and service system facilities; see **Section 5.1** through **Section 5.17** of this EIR.

Impact 5.17-1: General Plan: Level of Significance After Mitigation: Significant and Unavoidable Impact.

Barstow International Gateway

Construction and Operations

BIG's construction phase would occur over approximately three years and involve approximately 8,188 construction workers; see **Section 5.13: Population and Housing**. BIG's construction phase would generate water demand, wastewater, electric power usage, and telecommunications demand, and traverse existing natural gas facilities, which may require or result in the relocation or construction of new or expanded facilities, which could cause significant environmental effects, as discussed below. The temporary facilities proposed to accommodate BIG construction are described in detail in **Section 3.0: Project Description** and summarized below, according to utility.

The existing utilities and service systems affected during BIG construction are listed in **Table 5.17-16: List of Affected Existing Utilities and Service Systems – BIG** and depicted in **Figure 5.17-2** through **Figure 5.17-5: Existing Energy Facilities – BIG**. The proposed utilities and service systems for BIG operations are depicted in **Figure 3-20: BIG Proposed Water Improvements** and **Figure 3-21: BIG Proposed Wastewater Improvements** in **Section 3.0: Project Description**.

Table 5.17-16: List of Affected Existing Utilities and Service Systems – BIG

Utility	Facility	Location ¹	Description
Water	48-inch Distribution Line	North of Transload Warehouse Center	Existing distribution line would be relocated to run along the northern boundary of the BIG transload warehouse center and would include an easement granted to GSWC.
Sewer	24-inch Sanitary Sewer Line	Between Lenwood Road and Petit Road	Existing lateral connection sewer facilities along this line would be abandoned in place. A new sewer line would be constructed within Jasper Road.
Sewer	27-inch Sanitary Sewer Line	Between Lenwood Road and Jasper Road	Existing sewer facilities beneath main street would be relocated into Jasper Road north of the existing BNSF tracks with a portion running along the north side of the existing BNSF tracks between Jasper Road and Pettit.
Natural Gas	Two 42-inch Natural Gas Transmission Lines	Just west and parallel to Lenwood Channel	Existing within the BIG footprint and would be modified, protected in place, or deepened within the BIG footprint.

Note:

1. See **Figure 3-20: BIG Proposed Water Improvements** in **Section 3.0: Project Description**.

Source: Kimley-Horn, 2023.

Water

Temporary Water Facilities

BIG's construction phase water demand includes non-potable water for construction activities (i.e., mixing concrete, equipment cooling, general site cleaning, earthwork, and dust control) and potable water for on-site construction workers. BIG's construction phase water demands are discussed under **Impact 5.17-2: BIG** and in **Appendix 5.17 BIG-1** and **Appendix 5.17 BIG-2**.

Non-Potable Water. During construction, non-potable water would be required for mixing concrete, equipment cooling, general site cleaning, soil conditioning for proper placement and compaction, and dust control.

The existing private groundwater wells throughout the BIG footprint would be abandoned, and BIG would construct up to eight new private groundwater wells within the transload warehouse center area to meet BIG's non-potable water demand. Well abandonment and construction would occur pursuant to County Code § 33.06554: Desert Groundwater Management Permits, which requires a permit for any entity that seeks to construct, reconstruct, abandon, and destroy groundwater wells in the County, County Code § 33.0643: Well Abandonment, which provides requirements for when a well must be abandoned.

Potable Water. BIG's construction workers would generate demand for potable water during the construction phase. The potable water for BIG's construction workers would be supplied to the construction site via temporary above-ground pipeline connections to GSWC Barstow's existing mains.

MWA owns and operates a 48-inch recharge water line that crosses the BIG Specific Plan area. BIG proposes to relocate this existing line to the north to avoid conflict with rail yard and transload warehouse center improvements.

Permanent Water Facilities

BIG's operational potable water demands include water for employees (rail yard and transload warehouse center), canopies and sheds, electric hostler washing, crane maintenance pads, landscaping, and solar farm panel maintenance. Potable water demand during operations would be provided by direct connections to facilities owned and operated by the GSWC starting in the fourth quarter of 2028. The transload warehouse center would connect to an existing main in Jasper Road at the east end of the BIG footprint. BIG's rail yard (i.e., intermodal facility and block swap yard) would connect to an existing water main on the east end of the BIG footprint near Lenwood Road on the south side of Main Street. Additionally, MWA owns and operates a 48-inch recharge water line that crosses BIG Specific Plan area. BIG proposes relocating this existing line to the north to avoid conflict with the rail yard and transload warehouse center improvements. Major construction activities would include grading and excavation support, underground utility installation, systems construction, bridge construction, and railway systems construction (including trackwork, signaling, and communications).

BIG's operational potable water demands include water for employees (rail yard and transload warehouse center), canopies and sheds, electric hostler washing, crane maintenance pads, landscaping, and solar farm panel maintenance. Operational potable water and fire flow water would be provided by directly connecting to facilities owned and operated by the GSWC. The transload warehouse center would connect

to an existing water main in Jasper Road on the east end of BIG Specific Plan area. Water for the transload warehouse center would be conveyed on the site through 12-inch water mains within the public and private roadways. The rail yard would connect to an existing water main on the east end of BIG Specific Plan area near Lenwood Road on the south side of Main Street. Water for the rail yard would be conveyed on-site through 12-inch water mains within access roads.

Relocation of existing/construction of new permanent water facilities to meet operational demands would be limited to on-site water distribution and minor off-site work associated with connections to the public main, as described below.

- Relocate an existing water distribution line north of BIG's footprint.
- Construct a water main to connect the transload warehouse center with an existing water main in Jasper Road on the east end of the BIG Specific Plan area, at the intersection of Lenwood Road and Jasper Road.
- Construct a water main to connect the rail yard (i.e., intermodal facility and block swap yard) with an existing main on the east end of the BIG intermodal facility, on the east side of Lenwood Channel on the north side of Main Street. A new service loop would be constructed per GSWC request along Main Street and connected to the warehouse service line near Hinkley Road.

Further, GSWC and the City would be notified in advance of proposed ground disturbance activities to avoid water lines and disruption of water service. In compliance with Public Utilities Code § 1001, BIG would obtain required approvals from the CPUC.

Wastewater

Temporary Wastewater Facilities

BIG's construction-related wastewater generation would be from construction workers; see **Impact 5.17-3: BIG** and **Appendix 5.17 BIG-1** for further details. Temporary portable facilities (i.e., portable restrooms and portable handwash stations) would be utilized during the construction phase. The wastewater generated by these facilities would be transported off the site to a permitted disposal facility. Therefore, BIG's construction phase would not require or result in the relocation or construction of new temporary sewer facilities, and no environmental effects would occur in this regard.

Permanent Wastewater Facilities

BIG's operational wastewater generation would be from transload warehouse center and rail yard employees, and the rail yard wash bays and track pans; see **Impact 5.17-3: BIG** and **Appendix 5.17 BIG-1** for further details. Rail yard wastewater would be collected and treated with an oil water separator before being discharged to the wastewater system. Wastewater generated by BIG operations would require relocation or construction of new or expanded facilities, which would connect to the City's sewer infrastructure. A new 15-inch wastewater line is proposed within the Hinkley Road extension from the west end of the transload warehouse center to the northeast end of the transload warehouse center. Within the transload warehouse center, 12-inch lines would extend north to serve the transload warehouses. Rail yard wastewater would be collected and treated with an oil water separator before being discharged to the wastewater system. The rail yard would include a 15-inch new wastewater line at

the southern portion of the rail yard, conveying wastewater to the east and connecting to the existing sanitary sewer main in Main Street near Country Club Drive. BIG's wastewater would be conveyed by gravity flow to and treated at the City's WWTF. Wastewater conveyance and treatment would be coordinated with the City. Installation of the sewer infrastructure would be limited to on-site wastewater distribution and minor off-site work associated with connections to the public main. No upgrades to the public main or downstream lines are anticipated. Any work that may affect services to the existing lines would be coordinated with the City and County. The following are the wastewater conveyance facilities proposed to meet BIG's operational requirements:

- New sewer connections from the proposed transload warehouse center buildings to a City sewer main on the east side of Lenwood Road north of Jasper Road for the northeast portion of the warehouses and the remainder connecting to the sanitary sewer that would be relocated from the south side of the existing BNSF tracks to Jasper Road and the north side of the existing BNSF tracks.
- A new east-west sanitary sewer connection beneath the rail yard from the proposed intermodal facility to a County sewer main in Main Street near Country Club Drive.
- A new east-west sanitary sewer beneath the transload warehouse center then connecting to the County sewer system along Lenwood Road.
- A new east-west sanitary sewer beneath the transload warehouse center extending along Jasper Road.

Relocation plans would be reviewed and approved by the City and relocated lines would be constructed and operational before the existing lines are taken out of service. Sewer lines would be relocated to within public right-of-way and existing roadways, where possible. Relocated sewer lines are planned to be gravity flow.

Sewer improvements would be subject to compliance with Barstow Code Chapter 13.16: Building Laterals, which requires the provision of appropriate City permits prior to the creation of new sewer connections.

Potential impacts concerning treatment of BIG generated wastewater are discussed under **Impact 5.17-3**.

Stormwater Drainage

The BIG footprint is primarily undeveloped and does not currently have stormwater infrastructure developed on site. As a result, BIG would require the construction and maintenance of a large amount of stormwater infrastructure within the BIG footprint, as detailed in **Appendix 5.17 BIG-1** and **Section 3.0 Project Description**. Infrastructure would include underground conveyance, storm drain, on-site surface detention basins, channel improvements to the Lenwood Channel, channel improvements at the Hinkley Road Bridge, and other constructed surface reaches. All storm drain infrastructure on private property within the BIG footprint would be constructed by the property developer and maintained by the property owners. Storm drain infrastructure located within the public rights-of-way within roadways to be constructed by BIG would be constructed simultaneously with those roadways. Construction impacts related to new roadways are also discussed in **Section 5.15: Transportation** and throughout this EIR.

Electric Power

Temporary Electric Power Usage and Facilities

BIG construction activities would result in temporary electric power usage for construction equipment, tools, lighting, and other necessary facilities such as temporary offices. The total average annual electricity usage from BIG construction is 1,121,000 MWh (1,121 GWh); see **Table 5.17-17: Projected Annual BIG Energy Power Usage During Construction**. The electric power for construction activities would be supplied through connections to existing SCE facilities and sourced from the Tortilla Substation. Additionally, diesel fuel and portable generators would be utilized during construction.

Table 5.17-17: Projected Annual BIG Energy Power Usage During Construction		
Project Source	Average Annual Construction Energy (MWh)	Average Annual Construction Energy (GWh)
Water Use ¹	990	0.99
Concrete and Asphalt Batch Plants	1,120,000	1,120
Total	1,121,000	1,121
Notes:		
1. Construction water use based on acres disturbed per day per construction sequencing and estimated water use per acre.		

Permanent Electric Power Usage, Demand, and Facilities

BIG operations would result in permanent electric power usage for the transload warehouse center (lighting, electric vehicle charging for material handling, and forklifts) and rail yard (lighting, buildings, cranes, and electric hostlers (used to move containers between the rail yard and the transload warehouse center)). BIG's operational average annual electric power usage was estimated to determine the necessary infrastructure. **Table 5.17-18: Projected Annual BIG Energy Usage During Operations** summarizes BIG's projected annual energy usage during operations and indicates it would total approximately 145,258 MWh, including 46,018 MWh for the intermodal facility and 99,240 MWh for the transload warehouse center, with substantial usage from electric vehicle charging for the electric hostlers.

Table 5.17-18: Projected Annual BIG Energy Usage During Operations	
Unit	Amount (MWh/year)
Intermodal Facility	46,018
Transload Warehouse Center	99,240
BIG Total Usage	145,258
Solar Generation	-49,200
Transload Warehouse Center Solar – Title 24 Compliance	-11,680
BIG Net Usage (Unmitigated)	84,378
Solar Generation Mitigation ²	-31,025
BIG Net Usage (Mitigated)	53,353
Source: Kimley-Horn, 2023.	

BIG's electric power usage would be met through connecting to SCE's Tortilla Substation and supplemented with on-site electrical generation from the solar farm (proposed at the southeastern extent of the BIG Specific Plan area, south of Main Street, from transload warehouse center rooftop solar

generation for Title 24 compliance, and from additional rooftop solar beyond Title 24 compliance (**MM BIG EN-1**); see **Section 5.6**. When accounting for BIG's on-site electrical power generation from these sources, BIG's net electrical usage would total 53,353 MWh. It is noted that BIG's electrical usage does not take credit for any existing electric power usage from the existing land uses that would be removed. Although these new distribution circuits are meant to serve only BIG, SCE has the ability to utilize them to serve future customers as they deem appropriate. SCE has indicated that their existing power generation and transmission lines in the region are capable of supporting BIG's electric power usage via their existing Tortilla Substation.

A substantial portion of BIG's electric power usage would be met through electric power generated on the site using solar photovoltaic (PV) panels. As shown in **Appendix 5.17 BIG-3: Solar Farm Development Plan**, BIG proposes to construct a 21 MW, ground-mounted solar farm south of the rail yard and Main Street. This solar farm would supply power to the intermodal facility's load/customer side of the utility connection points. Battery Energy Storage Systems (BESS) are also proposed at the solar farm and transload warehouse center to maximize the on-site usage of solar power at the intermodal facility and transload warehouse center.

BIG proposes to construct the following on-site electric power facilities to serve BIG:

- **Substations.** Three substations: two substations at the eastern and western extents of the rail yard; and one substation within the solar farm.
- **Distribution Lines.** Additional 33 kilovolt (kV) distribution lines connecting via underground duct banks in a loop around the west end of the intermodal facility and north end of the transload warehouse center. These proposed 33 kV distribution lines would total 23 miles of conduit within the BIG Specific Plan area.
- **Solar Farm.** An approximately 140-acre solar farm is proposed south of the BIG rail yard, at the southwest corner of the Main Street at Country Club Drive intersection. The solar farm is estimated to generate approximately 21 MW to serve the BIG rail yard. The solar farm would include a battery electric storage system (BESS) and a new substation at the northwest corner to route power from the solar farm to the BIG rail yard. The solar farm would be fenced to prevent trespass and would include internal roadways for maintenance vehicles. The solar farm would require minimal grading to level the site as existing topography is utilized wherever possible and excavation limited primarily to stormwater detention to capture runoff.
- **Transload Warehouse Center Rooftop Solar.** BIG would comply with CALGreen regulations requiring that rooftop solar generation be installed on the industrial warehouse center building rooftops (Title 24, Section 140.10), resulting in an estimated approximately 6.4 megawatts (MW) of rooftop solar generation for Title 24 compliance. In addition, as described in **Section 5.6**, BIG would include additional rooftop solar beyond Title 24 compliance (**MM BIG EN-1**).
- **Emergency Generators.** Emergency diesel generators are proposed at various locations across the rail yard and transload warehouse center to provide backup power in the event of Tortilla Substation service interruptions. Rail yard generators would only be needed if a power outage were to occur at nighttime, as the proposed solar farm would provide sufficient power

during daytime in the event of a power outage. The rail yard would include up to 10 generators dispersed throughout, while the transload warehouse center would include up to 29 generators dispersed throughout. Generators would require up to 50 hours of testing and maintenance operations per year.

BIG also proposes to construct off-site electric power facilities to serve BIG. A 33 kV distribution line with three underground duct banks and electrical conductors is proposed to connect BIG to the Tortilla Substation. The 33 kV distribution line would utilize existing franchise agreements with the City and County on a route following Main Street, Sunrise Road, N Street, and Bonanza Road before utilizing existing easements between Bonanza Road and the Tortilla Substation. This proposed 33 kV distribution route would extend approximately 10.6 miles: approximately 7.1 miles underground from the Tortilla Substation to the intermodal facility's eastern extent at Country Club Drive, then continue overhead approximately 3.5 miles from Country Club Drive to approximately Hinkley Road. For the underground segment, the 33 kV circuits would be in underground utility lines resulting in an approximately 30-foot-wide disturbance to account for construction access and temporary spoils. From the Tortilla Substation to H Street (approximately 1.2 miles), the 33 kV conduit could occur within a 450-foot-wide corridor, inclusive of the existing 150-foot-wide SCE easement along Bonanza Road. However, the exact alignment is presently unknown and is being coordinated with SCE. Therefore, this EIR analyzes an approximately 30-foot-wide disturbance within the 450-foot-wide corridor ("33 kV distribution corridor"). This EIR analyzes the "worst-case" environmental impacts in all applicable resource areas within the 33 kV distribution corridor. For example, air quality mass emissions would be the same no matter where the 33 kV lines are placed, as it would require the same construction schedule, earthwork, and equipment. However, biological and noise impacts would depend on the location. For resource topics such as these, the analysis considers the portion of the 33 kV distribution corridor where the greatest impact would occur. SCE would make modifications which include constructing new feeders and new power distribution lines. Within the Tortilla Substation's existing fence line, SCE would also make modifications to supply their new feeders from their existing 115 kV-33 kV transformers. Various off-site existing electric power lines could be relocated, modified, or extended to accommodate BIG improvements.

To minimize BIG's operational electric power usage, BIG would be subject to compliance with various regulations concerning energy conservation including the CBSC Part 3 - California Electrical Code, The Renewables Portfolio Standard Program, and CALGreen. Additionally, the solar farm would aid in progressing the State's 100 Percent Clean Energy Act, which requires the production of exclusively clean energy by December 31, 2045.

Natural Gas

Temporary Natural Gas Facilities

BIG construction activities would not require construction of new natural gas facilities. Two Kinder-Morgan 42-inch natural gas transmission lines traverse the BIG footprint. One crosses the eastern portion of the BIG footprint, generally following the Lenwood Channel; and one crosses the proposed lead tracks east of Wild Wash. These two natural gas transmission lines would be protected in place using casing pipes and rock armoring for work within Lenwood Channel associated with widening or deepening within the BIG footprint. Further, given the size of the BIG footprint, existing natural gas infrastructure would be

encountered during ground moving activities, and unmapped facilities are likely. Because the BIG Specific Plan area would be mass graded and substantial excavation would occur, it is anticipated that relocation would be accommodated during mass grading activities and likely placed within or adjacent to other utilities being relocated. Similarly, to accommodate BIG's off-site improvements, protection in place or relocation of existing natural gas facilities would be required.

Permanent Natural Gas Facilities

BIG does not propose any new natural gas infrastructure. BIG's proposed buildings (e.g., within the rail yard and transload warehouse center) would use electric power for heating. Therefore, BIG operations would not require or result in the relocation or construction of natural gas facilities, and no environmental effects would occur.

Telecommunications

Temporary Telecommunications Facilities

No temporary telecommunications facilities are proposed during BIG construction activities. Therefore, BIG construction activities would not require or result in the relocation or construction of telecommunications facilities.

Permanent Telecommunications Facilities

Telecommunication lines cross BIG's footprint along Lenwood Road and along the southern edge of the existing tracks. BIG would connect to existing telecommunications infrastructure near Jasper Road north of the existing BNSF main lines and near Lenwood Road and Main Street to the south. BIG's proposed telecommunications facilities consists of fiber optic cables, which would be run in underground conduit from the connection point to various buildings and telecommunications cabinets within the site, as well as on-site telecommunications towers as described in **Section 3.0**. In addition, BNSF Telecommunications would install approximately 12 communication towers with heights generally between 100 and 120 feet, although two communication towers would be 160 feet tall.

Conclusion

BIG's construction and operations would require and result in relocation/construction of new or expanded water, wastewater, stormwater drainage, electric power, natural gas, and telecommunications facilities. Utility and service system improvements and modifications are incorporated into BIG's design and development. BIG would be subject to compliance with utility construction-centric standards, including Barstow Code Chapter 13.32: Underground Utilities, which requires the undergrounding of all electrical distribution lines of 16,000 volts or less, telephone, cable antenna television and similar service wires or cables which provide direct service to properties, and County Code Section 67.0104. Notwithstanding, construction and/or relocation of these facilities would cause significant environmental effects. The environmental impacts resulting from relocation/construction of utilities and service systems needed to accommodate BIG construction and operations are discussed as part of BIG's overall environmental analyses in **Sections 5.1** through **5.17**. As concluded in these sections, BIG's environmental impacts have been mitigated to the extent feasible with incorporation of the MM specified in **Sections 5.1** through **5.17**. However, certain environmental impacts (i.e., concerning aesthetics, air quality, cultural resources, noise

and vibration, tribal cultural resources) would remain significant despite incorporation of MM, thus would result in significant unavoidable environmental impacts. Therefore, BIG's proposed relocation/construction of new or expanded water, wastewater, stormwater drainage, electric power, natural gas, and telecommunications facilities would result in a significant unavoidable impact.

Impact 5.17-1: BIG: Level of Significance Before Mitigation: Potentially Significant Impact.

Impact 5.17-1: BIG: Mitigation Measures:

Mitigation measures provided in **Section 5.1** through **Section 5.17** are proposed to minimize environmental impacts associated with BIG inclusive of utility and service system facilities; see **Section 5.1** through **Section 5.17** of this EIR.

Impact 5.17-1: BIG Level of Significance After Mitigation: Significant and Unavoidable Impact.

Impact 5.17-2 *Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?*

Proposed General Plan

Construction and Operations

The City coordinated with MWA to project water demand associated with the proposed General Plan forecast to better align with the upcoming 2025 UWMP update (at the regional and local level). The proposed General Plan water demand calculations were developed by MWA through integrating the General Plan growth projections into the water demand forecast model for the GSWC service area through 2048. **Table 5.17-19: Proposed General Plan Water Demands (AFY)** shows the projected total water demand for the GSWC service area to be 7,758 AFY by 2048.

Table 5.17-19: Proposed General Plan Water Demands (AFY)			
Year	Population	Water Demand (AFY)	Customer GPCD
2048	52,748 ¹	7,758	131
AFY = acre-feet per year; gpcd = gallons per capita per day			
¹ Table 3-6 of this DEIR includes a total change in population of 52,833. This difference is minimal and does not affect the proposed General Plan's water demand.			
Source: Fuscoe, 2025; Appendix 5.17 GP-1: Utility Infrastructure Report.			

The difference between the projected water demand for the proposed General Plan shown in **Table 5.17-19: Proposed General Plan Water Demands (AFY)** and the projected available water supply shown in **Table 5.17-20: Projected Water Supply and Proposed General Plan Demands** results in a surplus of 6,650 AFY. **Table 5.17-20: Projected Water Supply and Proposed General Plan Demands** identifies a surplus between water demand and supply for proposed General Plan buildout in 2048. At proposed General Plan buildout, GSWC is projected to have a surplus of 6,650 AFY based on the worst dry year conditions that would occur in 2045 during year five of multiple dry years. As stated in the GSWC 2020

UWMP (Table 3-7), the total water supply is consistently shown as 14,408 AF between 2030 and 2045, and so it is assumed that GSWC's available supply would not change from 2045 to 2048.

Table 5.17-20: Projected Water Supply and Proposed General Plan Demands	
Water Supplier	2048 (AF)
Year 5, Multi-Dry Years Supply	14,408
Proposed General Plan Demand	7,758
Surplus	6,650
Source: Fuscoe, 2025; Appendix 5.17 GP-1: Utility Infrastructure Report.	

Under SBLAFCO Actions A and B, the proposed General Plan proposes annexation to the Odessa Water District of approximately 2,785 acres; see **Section 3.0: Project Description** for detailed discussions. However, all future development under the proposed General Plan, including BIG, would not receive water from the Odessa Water District, but would instead receive water from GSWC. Implementation of projects consistent with the land uses described within the proposed General Plan, which are located outside the GSWC's service area, would require an extension of GSWC's service area.

Additionally, water wells would require construction permits from the San Bernardino Environmental Health Services and compliance with MWA Ordinance No. 14. The City also provides a comprehensive framework for water conservation efforts within Barstow Code Chapter 13.40. In addition to defining terms and specifying the applicability of the regulations to all water users, the Barstow Code describes the responsibility of individuals and entities to manage their water usage, with an emphasis on preventing excess runoff. It outlines specific prohibitions, such as restrictions on certain watering practices and car washing methods, aiming to minimize water wastage. Specifically, the Barstow Code sets standards for new developments and mandates that water-efficient fixtures and infrastructure be incorporated to reduce water demand and wastage. The Barstow Code also encourages the use of drought-tolerant plant species for landscaping and promotes water recycling and reuse processes among larger water users. Exceptions to the regulations may be granted in exceptional circumstances, and the code establishes penalties, including fines, for violations, demonstrating the City's commitment to enforcing water conservation measures effectively. Overall, these conservation measures would contribute to sustainable development and efficient water usage throughout the region. Therefore, sufficient water supplies would be available to serve the proposed General Plan and reasonably foreseeable future development during normal, dry, and multiple dry years and impacts would be less than significant.

BIG prepared and has an approved Water Supply Assessment (WSA) with GSWC that calculates BIG's water demand for construction and operations; see **Table 5.17-21: Estimated Incremental Annual Water Demand - BIG (AF)** later in this section. To avoid double counting, BIG's operational water demand was calculated separate from the water demand associated with the proposed General Plan's other industrial land uses. BIG's operational water demand total was added to the total proposed General Plan industrial water demand since BIG's water demand would be long term. BIG's construction phase water demand includes non-potable water for construction activities, which would be provided by private on-site groundwater wells, and potable water for on-site construction workers, which would be provided by GSWC and would not have an impact on water supply once BIG's construction is complete.

Impact 5.17-2: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.1-2: General Plan: Mitigation Measures: No mitigation required.

Impact 5.1-2: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

Construction

BIG's water demand during the construction phase includes non-potable water for construction activities and potable water for on-site construction workers. BIG's construction phase water demands are discussed in detail in **Appendix 5.17 BIG-1** and **Appendix 5.17 BIG-2**. All existing land uses would be demolished during BIG's acquisition and construction phases to avoid trespassing and safety concerns. For purposes of this analysis, water demands associated with existing land uses within BIG's footprint (see

Table 5.17-10: Estimated Existing Water Demand – BIG

) are conservatively assumed to be zero. Therefore, BIG’s incremental water demand calculations (i.e., net new demand) do not take credit for any of the existing water demands associated with the existing land uses that would be removed.

Non-Potable Water. During construction, water would be required intermittently for site preparation, dust control, equipment cleaning, and soil grading. BIG’s non-potable water demand for construction activities is estimated to total approximately 6,453 AF. It is anticipated that 90 percent of the non-potable water demand for construction activities would occur in the first 12 to 15 months of construction (i.e., between the third quarter of 2025 and the third quarter of 2028) for mass grading and dust control. The latter phases of construction normally require less water usage because moisture conditioning of soil for grading, which accounts for approximately half of all construction water, is complete and the majority of remaining construction water is primarily used for dust control, which is further reduced as grading is covered up by aggregate, pavement, and track and not for conditioning of the soil for compaction. Therefore, it is assumed that 50 percent of the non-potable water demand (3,227 AF) would be needed in 2025 (given construction would start beginning of the third quarter of), 40 percent (2,581 AF) would be needed in 2026, and the remaining 10 percent (645 AF total, approximately 322 AFY for two years) would be needed through 2028. Therefore, BIG’s highest yearly non-potable water demand for construction activities is estimated to total approximately 3,227 AF as identified in **Table 5.17-21: Estimated Incremental Annual Water Demand - BIG (AF)**. Construction water usage is discussed in more detail in **Appendix 5.17 BIG-1**.

As noted above, the non-potable water for construction activities would be supplied from up to eight private groundwater wells, which would be located within the transload warehouse area. The on-site groundwater wells would be within the adjudicated Mojave Basin Area (i.e., within the Centro Subarea). Parties to the Basin’s Judgment are assigned a variable FPA, which is a percentage of the BAP rights assigned annually to each producer based on the Watermaster’s (MWA) recommendation. Hence, well water pumping to meet BIG’s construction non-potable water demands would be subject to the Judgment’s pumping limitations.

Table 5.17-21: Estimated Incremental Annual Water Demand - BIG (AF)

Category	Area (acres)	Number of Employees or Production	Water Demand Factors	Units	Total Demand (AFY)				
					2025	2030	2035	2040	2045
CONSTRUCTION WATER DEMANDS									
Non-Potable Water Demand									
Dust Control and Concrete Mixing	–	–	–	–	3,227	–	–	–	–
POTABLE WATER DEMAND									
Construction Workers	–	8,188	30	Gpd/ person	275	–	–	–	–

Table 5.17-21: Estimated Incremental Annual Water Demand - BIG (AF)									
Category	Area (acres)	Number of Employees or Production	Water Demand Factors	Units	Total Demand (AFY)				
					2025	2030	2035	2040	2045
OPERATIONAL WATER DEMANDS									
Intermodal Facility									
Buildings	1.4	–	–		–	–	–	–	–
Canopies and Sheds	1.3	–	0.02	gpd/ sq ft/ leaning	–	2.5	2.5	2.5	2.5
Hostler Wash	–	–	–	–	–	6.7	6.7	6.7	6.7
Support Facilities	–	–	–	–	–	–	–	–	–
Crane Maintenance Pads	–	–	–	–	–	0.084	0.084	0.084	0.084
Block Swap Facility	410	–	–	–	–	–	–	–	–
Transload Warehouse Center									
Transload Warehouses	207	4,248	30	gpd/ person	–	142.8	142.8	142.8	142.8
Support Facilities	2,026	–	–	–	–	–	–	–	–
Container Yard, Chassis Storage, and Maintenance Laydown	410	–	–	–	–	–	–	–	–
Landscaping	62	–	0.30	gal	–	165	165	165	165
Other Components									
Employees	-	1,125	30	gpd/ person	–	37.8	37.8	37.8	37.8
Solar Panels	100	43,450 MWh/yr	20	gal/ MWh	–	2.7	2.7	2.7	2.7
Railroad Tracks	768	–	–	–	–	–	–	–	–
Stormwater Detention Ponds	80	–	–	–	–	–	–	–	–
Other	–	–	–		–	–	–	–	–
Distribution System Losses		–	–	–	36	46	46	46	46
Existing BIG Site Demand	–	–	–	–	0	0	0	0	0
Total Non-Potable Water Demand					3,227	–	–	–	–
Total Potable Water Demand					311	404	404	404	404
Net Annual Water Demand					3,538	404	404	404	404

Since 2000, the water rights within BIG’s footprint have consistently accumulated annual unused FPA because the available supplies exceeded demands. Unused FPA for BIG’s footprint has ranged from 74 AF to 1,892 AF and averaged 1,028 AF per year from 2000-2021 (GSWC 2021). As of this writing, BNSF holds 793 AF of annual water rights from acquired property within the BIG footprint and 120 AF of unused annual water rights from the existing BNSF Barstow Yard well (**Appendix 5.17 BIG-2**). BIG’s non-potable water demand for construction activities is estimated to total approximately 6,453 AF, which would exceed the established FPA, that is, the amount BNSF can pump without incurring a “Replacement

Obligation.” The Judgment and Watermaster Rules and Regulations provide several options to address this need to pump construction water.

- BNSF can increase their FPA in advance of when it would be required by obtaining temporary transfers (or options for temporary transfers).
- BNSF can pump all the well water needed for construction activities, even significantly in excess of its FPA, in which case BNSF would then have a Replacement Obligation, which can be satisfied by either:
 - Obtaining a temporary transfer at that time (i.e., after confirming how much construction water BNSF pumped in the prior water year) or
 - Paying the Replacement Water Assessment.

These options are consistent with the physical solution that the Judgment implemented and that the Watermaster oversees.

It is noted that the Mojave Basin has been sustainably managed under the Judgment, and there is significant unused FPA in the Centro Basin. In its most recent (29th) Annual Report, dated May 2023, the Watermaster reported that the Centro Subarea had 29,839 AF of unused FPA for the 2021-22 water year. Similarly, in the next most recent (28th) Annual Report, dated May 2022, the Watermaster reported that the Centro Subarea had 32,749 AF of unused FPA for the 2020-21 water year. Therefore, the amount of unused FPA available year after year in the Centro Subarea significantly exceeds the amount of water anticipated to be used by BIG for construction activities. Therefore, sufficient water supplies would be available to serve BIG construction activities during normal, dry, and multiple dry years, following compliance with Judgment and Watermaster Rules and Regulations. A less than significant impact would occur in this regard, and no mitigation is required.

Potable Water. BIG’s construction workers would generate demand for potable water during the construction phase. This construction potable water demand estimate is based on a water demand factor of 30 gpd per construction worker and 8,188 construction workers. The potable water for BIG’s construction workers would be supplied to the construction site via temporary above-ground pipeline connections to GSWC Barstow’s existing mains. See the *Operations* water supply analysis below, which addresses water supply and BIG’s potable water demand during both construction (for construction workers only) and operations at buildout of BIG.

Operations

BIG's operational potable water demands include water for employees (rail yard and transload warehouse center), canopies and sheds, electric hostler washing, crane maintenance pads, landscaping, and solar farm panel maintenance. BIG's average annual operational potable water demand was estimated based on literature values for office building water, landscape irrigation and ordinance code, and information about BIG provided by BNSF. See **Appendix 5.17 BIG-2** for further details including water demand rates and assumptions.

BIG operations would be subject to compliance with various regulations concerning water conservation to minimize BIG's operational water demands. This includes Barstow Code Chapter 19.06: Development Standards, which provides limitations on irrigation water usage, and AB 1668 and SB 606, which promote a statewide effort to meet annual water conservation goals.

Per the Barstow Fire Protection District Fire Flow Requirements – Standard, for buildings other than Single Family Dwellings the minimum fire-flow and flow duration for these buildings shall be as specified in Table No. B105.1 (International Fire Code, 2012 Edition. An exception of up to 50 percent is allowed when the building is provided with an approved automatic sprinkler system. BIG is within the City's sphere of influence, and the City has adopted the California Fire Code, 2010 edition. For buildings with sprinkler systems, the required fire flow is 2,000 gpm at a minimum of 20 psi residual pressure, and for a flow duration of 4 hours. However, an average flowrate of 4,000 gpm for 4 hours would be used for consistency with the Barstow Fire Protection District. BIG would have adequate water resources to accommodate the necessary fire flow.

BIG's operational water demand is estimated to total approximately 3,538 AFY, including distribution system losses; see **Table 5.17-21: Estimated Incremental Annual Water Demand - BIG (AF)**. It is noted that BIG's operational water demand does not take credit for any existing water demands associated with the existing land uses that would be removed; see

Table 5.17-10: Estimated Existing Water Demand – BIG

GSWC Barstow’s projected supplies would be sufficient to meet all projected water demand in the GSWC Barstow’s service area, inclusive of BIG, under current and future conditions, for normal, single-dry, and multiple dry years through 2045; see **Table 5.17-6: Normal, Single, and Multiple Dry Year Water Supply (AF)**. Additionally, BIG would comply with the Barstow Code in regard to water use, including Barstow Code Chapter 13.40: Water Conservation Plan, which outlines allowed water uses and landscaping watering requirements. Therefore, sufficient potable (construction and operational) water supplies would be available to serve BIG and reasonably foreseeable future development during normal, dry, and multiple dry years. A less than significant impact would occur, and no mitigation is required.

Impact 5.17-2: BIG: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.17-2: BIG Mitigation Measures: No mitigation required.

Impact 5.17-2: BIG Level of Significance After Mitigation: No significant impact would occur.

Impact 5.17-3 *Would the Project result in a determination by the wastewater treatment provider, which serves or may serve the Project that it has adequate capacity to serve the Project’s projected demand in addition to the provider’s existing commitments?*

Proposed General Plan

The Carollo Analysis includes flow projections consistent with the proposed General Plan land uses through the 2048 planning horizon. Average and maximum daily dry weather wastewater flow was estimated for the proposed General Plan buildout in 2048 as shown in **Table 5.17-22: Projected Sewer Flows**. The 2048 average and maximum daily wastewater flows into the WWTF at proposed General Plan buildout are projected to be 4.88 mgd and 5.76 mgd, respectively.

Table 5.17-22: Projected Sewer Flows		
Planning Horizon	ADDWF (mgd)	MDDWF* (mgd)
2048	4.88	5.76
Notes: ADDWF: Average Daily Dry Weather Flow MDDWF: Maximum Daily Dry Weather Flow *The MDDWFs were estimated using a MDDWF to ADWF peaking factor of 1.18.		
Source: Carollo Analysis.		

The existing average daily dry weather flow (ADDWF) at the WWTF is approximately 2.3 mgd (Carollo Analysis). By 2048 daily maximum wastewater flows are projected to increase by approximately 2.1 mgd for a total of 4.4 mgd which is below the California Regional Water Quality Control permit limit of 4.5 mgd and the 7.65 mgd design capacity.

Although the WWTF has adequate design capacity to serve the projected 2048 demand, improvements at the facility to the clarifiers and supporting equipment, as well as an updated operating permit from the RWQCB, would be needed meet the projected 2048 wastewater treatment demand. The extent of the improvements are identified in the Carollo Analysis. However, as the City could double the amount of wastewater treated at the WWTF before exceeding the existing permit, and the design capacity is adequate to cover the projected 2048 demand, and there is adequate area within the existing WWTF to accommodate the physical improvements, this impact is considered less than significant. Proposed General Plan Policy PFS-1.5 establishes that the City will “Monitor, maintain, and make sewer system improvements as necessary to ensure safe, reliable, and cost-effective wastewater collection and treatment facilities.” Additionally, the City applies conditions of approval, enters into development agreements, and applies development impact fees to ensure that proposed development will pay for and establish required sewer improvements, both for individual site and (in a proportional manner) the overall system.

The Barstow Code Article VII: Fees and Charges details sewer service charges for residential and industrial users and monitoring and inspection charges. These user fees cover operation and maintenance costs and set aside adequate reserves for capital upgrades and improvements.

The proposed General Plan also includes Policies H-3.4 and PFS-1.5 that promote the maintenance and provision of needed capital improvements that are essential to quality of life, and encourage monitoring, maintaining, and making improvements as necessary to ensure safe, reliable, and cost-effective wastewater collection and treatment facilities. Policies LU-2.3, LU-2.5, and LU-2.6 note that approval of future developments would only occur when necessary infrastructure and services would be available and provided prior to or concurrent with occupancy, require new development to pay its fair share for necessary infrastructure, services, and on-site and off-site capital improvements, and require new development to employ special assessment districts and other financing mechanisms for improvements to and expansions of existing public services and infrastructure (including capital costs and ongoing operations and maintenance), when necessary to maintain fiscal neutrality. Therefore, the proposed General Plan would not result in a determination by the wastewater treatment provider that the WWTF would not have adequate capacity to serve development under the proposed General Plan in addition to the provider’s existing commitments and impacts would be less than significant.

Impact 5.17-3: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.17-3: General Plan: Mitigation Measures: No mitigation required.

Impact 5.17-3: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

Construction

BIG’s wastewater generation during the construction phase would be from the construction workers; see **Appendix 5.17 BIG-1** for further details. Based on a maximum daily count of 8,188 construction workers, approximately 31 temporary portable water closets would be utilized during the construction phase

consistent with CCR § 3364 which provides requirements for the availability of restroom facilities for employees and construction workers. Each portable wash station would have capacity for 60 gallons of wastewater. Wastewater generated during BIG's construction phase would be transported to the WWTF by septic trucks once a week during the 34-month construction period. BIG's daily construction-related wastewater generation is estimated to total approximately 265 gallons (31 portable stations carrying 60 gallons emptied per seven days), or less than 0.01 million gallons. This would constitute approximately less than 0.01 percent of the WWTF's unused capacity of 2.2 mgd. Therefore, BIG construction activities would not result in a determination by the wastewater treatment provider, which would serve BIG that it has inadequate capacity to serve BIG's projected construction-related generation in addition to their existing commitments. A less than significant impact would occur, and no mitigation is required.

Operations

BIG operational wastewater generation would be from transload warehouse center and rail yard employees, and the rail yard wash bays and track pans; see **Appendix 5.17 BIG-1** for further details. Rail yard wastewater would be collected and treated with an oil water separator before being discharged to the wastewater system. The wash bay would service the electric hostlers required for the intermodal facility and transload warehouse center operations. The wastewater from this bay would be collected and treated with an oil water separator before being discharged to the wastewater system. Per the WSA, it is anticipated that this would contribute approximately 6,000 gpd. Track pans would be utilized on repair tracks that would be exposed to rainfall events resulting in collection and treatment with an oil water separator. The track pans are anticipated to contribute approximately 8,300 gallons to wastewater during a 100-year 24-hour storm event. The crane maintenance pads that would be utilized would also be exposed to rainfall events resulting in collection and treatment with an oil water separator, although partially covered beneath canopies (**Appendix 5.17 BIG-1**).

Table 5.17-23: Estimated Operational Wastewater Generation – BIG summarizes BIG's estimated operational wastewater generation and indicates it would total approximately 181,190 gpd (approximately 0.18 mgd). It is noted that BIG's wastewater generation does not take credit for any existing wastewater generation from the existing land uses that would be removed; see **Table 5.17-23: Estimated Operational Wastewater Generation – BIG**. BIG wastewater would be conveyed to and treated at the WWTF, which is owned and operated by the City. As previously mentioned, the WWTF has a permitted ADWF capacity of 4.5 mgd, a design peak flow of 7.7 mgd, and a daily average flow rate of 2.3 mgd. Because BIG would not result in a notable increase in wastewater generation, BIG would not impact the WWTF's capacity. Therefore, BIG operations would not result in a determination by the wastewater treatment provider, which would serve BIG that it has inadequate capacity to serve BIG's projected operational generation in addition to their existing commitments. A less than significant impact would occur, and no mitigation is required.

Table 5.17-23: Estimated Operational Wastewater Generation – BIG					
Description	Unit	Total Count	Generation Rate (gpd)	Generation (gpd)	Generation (mgd)
Industrial ¹	1 employee	5,373	30 gpd	161,190	0.16
Rail Effluent	Lump sum	1		20,000	0.02

Total BIG	181,190	0.18
Notes: GPD = gallons per day; Based on the Light Industrial Land Use Type		
Source: Appendix 5.17 BIG-1: Utility Assessment Technical Report		

Impact 5.17-3: BIG: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.17-3: BIG Mitigation Measures: No mitigation required.

Impact 5.17-3: BIG Level of Significance After Mitigation: No significant impact would occur.

Impact 5.17-4 *Would the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Proposed General Plan

Construction and Operations

Under the proposed General Plan, the population is anticipated to increase by 6,617 housing units and 10,820 employees. As shown in **Table 5.17-24: Solid Waste Increase: Proposed General Plan**, this level of growth would result in an increase in solid waste of approximately 97 tons per day, or 35,405 tons per year. These numbers are conservative because, with continued recycling and waste reduction programs implemented by the City and Burrtec Waste Industries, the waste generation volume is expected to reduce over time.

Table 5.17-24: Solid Waste Increase: Proposed General Plan				
Category	Increase Due to Proposed General Plan	Solid Waste Generation Rate	Increase in Solid Waste (tons per day)	Increase in Solid Waste (tons per year)
Residents	6,617 DUs	12.23 lbs./ household/day	40	14,600
Employees	10,820 employees	10.53 lbs./ employee/day ¹	57	20,805
Total			97	35,405
Notes: DU = dwelling unit; Lbs. = pounds; ppd – pounds per day ¹ Table 5.17-14 and Table 5.17-25 for the BIG analysis include an industrial solid waste generation rate of 8.93 lbs./employee/day. This table conservatively assumes that all employees generate 10.53 lbs./employee/day. Employees in a commercial setting generate more solid waste than industrial employees.				
Source: CalRecycle 2024.				

The increase of 97 tons per day for proposed General Plan buildout in 2048 would be about 9.3 percent of the current residual capacity of 1,306 TBD at the Barstow Sanitary Landfill. This estimate conservatively assumes that all of the generated waste is landfilled. Waste generated in the City is diverted from landfill disposal through recycling and composting. Although CalRecycle does not provide the recycling rate for Barstow, the State as a whole diverted 42 percent of total waste in 2020 (CalRecycle, 2021). As such, even if all solid waste is landfilled, the proposed General Plan would not generate solid waste in excess of the capacity of the landfill that serves the City.

With continued compliance with the applicable regulations, leading to increased recycling and waste diversion, and adherence to the proposed General Plan policies, such as Policy PFS-1.8, which promotes a solid waste management system that meets or exceeds State recycling and waste diversion mandates, anticipated rates of solid waste disposal from the proposed General Plan would be less than significant concerning permitted landfill capacity. In addition, the City is below the CalRecycle target disposal rates of 8.9 ppd per resident and 30.6 ppd per employee and meets the regulatory requirements of AB 939.⁵ Therefore, implementation of the proposed General Plan would not generate solid waste in excess of State and local standards, or in excess of the capacity of the landfill, or otherwise impair the attainment of solid waste reduction goals, and the impact is less than significant.

Impact 5.17-4: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.17-4: General Plan: Mitigation Measures: No mitigation required.

Impact 5.17-4: General Plan: Level of Significance After Mitigation: No significant impact would occur.

Barstow International Gateway

Construction

The property acquisitions needed to accommodate BIG's proposed improvements would include as many as 108 dwelling units and approximately 93,724 square feet of non-residential (commercial and industrial) land uses. Property acquisitions would result in the removal of these land uses and all improvements on the respective properties. Construction of the proposed BIG improvements would also generate construction debris. BIG's construction and demolition debris is anticipated to include steel, wood products, drywall and plaster, brick and clay tile, asphalt shingles, concrete, and asphalt concrete, among others. Construction debris is also anticipated to include materials found in the general waste stream such as cardboard from packaging, various plastics (PVC pipe, packaging, etc.), glass, and yard wastes from site work and clearing. Therefore, BIG construction activities would increase solid waste generation and demand for disposal services over existing conditions. However, BIG construction activities would be subject to compliance with CALGreen Section 5.408.1, which requires a 65 percent diversion rate of nonhazardous construction and demolition waste.

After construction solid waste has been separated and 65 percent diverted, the balance would be transferred to the Barstow Sanitary Landfill, which has a daily maximum throughput of 1,500 tpd and a remaining capacity of approximately 68 million cubic yards. BIG construction would not generate solid waste in excess of existing solid waste conveyance capacities from nearby landfills, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. The solid waste generated by construction, when compared to operational waste generation would be negligible, since all BIG construction activities would be subject to compliance with Barstow Code and County regulations. A less than significant impact would occur in this regard, and no mitigation is required.

Operations

⁵ In 2023, Barstow's disposal rates were 6.2 ppd per resident and 18.8 ppd per employee.

Table 5.17-25: Estimated Future Solid Waste Generation – BIG below summarizes BIG’s operational solid waste generation for Horizon Year 2048 and indicates it would total approximately 76,000 lbs./day.

Table 5.17-25: Estimated Future Solid Waste Generation – BIG				
Use	Quantity	Generation Rate	Solid Waste Generation (lbs./day)	Solid Waste Generation (tons/day)
Rail Yard (Industrial)	1,125 employees	8.93 lb./employee/day	10,046	5.02
Transload Warehouse Center (Industrial)	4,248 employees	8.93lb./employee/day	38,256	19.1
Total			48,302	24.15
Source: <i>Estimated Solid Waste Generation Rates</i> . CalRecycle. https://www2.calrecycle.ca.gov/wastecharacterization/general/rates . Accessed November 11, 2024.				

BIG’s operational solid waste generation of approximately 24.15 tpd would constitute approximately 3 percent of Barstow Sanitary Landfill’s 1,500-ton daily throughput. The Barstow Landfill has a remaining capacity of approximately 71.5 million cubic yards. Based on the daily solid waste estimates for BIG, there is sufficient capacity in the Barstow Landfill to accommodate BIG. Although CalRecycle does not provide the recycling rate for Barstow, the State as a whole diverted 42 percent of total waste in 2020 (CalRecycle 2021). As such, even if all solid waste is landfilled, BIG would not generate solid waste in excess of the capacity of the landfill that serves the City. Furthermore, BIG would comply with regional and state regulations requiring the diversion of 50 percent of refuse for the purpose of recycling per AB 1826. With continued compliance with the applicable regulations, leading to increased recycling and waste diversion, and adherence to the proposed General Plan policies, such as Policy PFS-1.8, which promotes a solid waste management system that meets or exceeds State recycling and waste diversion mandates, anticipated rates of solid waste disposal from BIG would be less than significant concerning permitted landfill capacity. Notwithstanding, area landfills have substantial capacity and are projected to be available for waste disposal throughout BIG’s lifetime. The San Bernardino County Public Works – Solid Waste Management Department confirmed that the County would have sufficient capacity to accommodate BIG (County, 2024).

BIG does not propose uses which would generate waste at high levels. As well, no uses associated with BIG directly conflict with solid waste reduction plans in their design or intended use. Therefore, BIG operations would not generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. A less than significant impact would occur, and no mitigation is required.

Impact 5.17-4: BIG: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.17-4: BIG Mitigation Measures: No mitigation required.

Impact 5.17-4: BIG Level of Significance After Mitigation: No significant impact would occur..

Impact 5.17-5 ***Would the Project comply with federal, State, and local management and reduction statutes and regulations related to solid waste?***

Proposed General Plan

Construction and Operations

As discussed under **Impact 5.17-4: General Plan**, Burrtec Waste Industries and the City of Barstow comply with all State requirements to reduce the volume of solid waste through recycling and organic waste diversion. The City's per capita disposal rates were 6.5 ppd per resident and 20.2 ppd per employee are below the CalRecycle targets of 8.9 ppd per resident and 30.6 ppd per employee. In addition, future development under the proposed General Plan would comply with CALGreen Division 4.4, Material Conservation and Resource Efficiency, which requires that at least 65 percent of nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

Potential future development would also comply with AB 341, which mandates recycling for commercial and multi-family residential land uses as well as schools and school districts. All jurisdictions in California are required to provide organic waste collection services to all residents and businesses, which began in 2022 in accordance with SB 1383. The City and Burrtec Waste Industries currently comply with all applicable federal, State, and local solid waste regulations, and solid waste, recycling, and green waste collection services are available to all residents and commercial businesses in Barstow. Therefore, the proposed General Plan would comply with all current and future regulatory requirements, and impacts would be less than significant.

Impact 5.17-5: General Plan: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.17-5: General Plan: Mitigation Measures: No mitigation required.

Impact 5.17-5: General Plan: Level of Significance After Mitigation: No significant impact would occur.

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Construction and Operations

BIG would comply with the applicable local, State, and federal regulations regarding solid waste. BIG's solid wastes would be disposed of at the Barstow Sanitary Landfill. BIG would result in solid waste generation from construction (demolition debris, broken or excess materials, packaging, and other construction waste), as well as during operations from the rail yard and transload warehouse center. Also, as concluded above, BIG would not independently result in inadequate landfill capacity. BIG would comply with the various regulations regarding solid waste. CALGreen requires that projects recycle 65 percent of construction and demolition waste. Assembly Bill 1826 and Senate Bill 1383 require that at least 50 percent of organic waste generated by landscaping services or other uses be recycled. Additionally, AB 341 requires that at least 75 percent of waste generated from construction activities be diverted to recycling centers. In any case, area landfills have substantial capacity and are projected to be available for

waste disposal throughout BIG's lifetime. Additionally, BIG would remain consistent with the Barstow Code, including Barstow Code Chapter 6.20: Solid Waste and Recyclables Collection Services, which provides specific requirements regarding solid waste collection. Therefore, BIG impacts concerning compliance with waste management regulations are considered less than significant, and no mitigation is required.

Impact 5.17-5: BIG: Level of Significance Before Mitigation: Less than Significant Impact.

Impact 5.17-5: BIG Mitigation Measures: No mitigation required.

Impact 5.17-5: BIG Level of Significance After Mitigation: No significant impact would occur.

5.17.7 SIGNIFICANT UNAVOIDABLE IMPACTS

Proposed General Plan

As concluded in **Sections 5.1** through **5.17**, the proposed General Plan's environmental effects would be reduced to less than significant through compliance with the established regulatory framework and implementation of the specified mitigation measures. However, certain impacts (i.e., concerning aesthetics, agriculture and forestry resources, air quality, cultural resources, geology, soils, and mineral resources, greenhouse gas emissions, noise and vibration, transportation, and tribal cultural resources) would remain significant despite implementation of mitigation, thus would result in significant unavoidable environmental impacts. Therefore, the proposed General Plan relocation/ construction of new or expanded water, wastewater, stormwater drainage, electric power, natural gas, and telecommunications facilities would result in a significant unavoidable impact.

Barstow International Gateway

BIG construction and operations would require relocation/construction of water, wastewater, and stormwater conveyance infrastructure and utility infrastructure. As concluded in **Sections 5.1** through **5.17**, BIG's environmental effects would be reduced to less than significant through compliance with the established regulatory framework and implementation of the specified mitigation measures. However, certain environmental impacts (i.e., concerning aesthetics, air quality, cultural resources, noise and vibration, and tribal cultural resources) would remain significant despite implementation of mitigation measures, thus would result in significant unavoidable environmental impacts. Therefore, BIG's proposed relocation/construction of water, wastewater, stormwater drainage, electric power, natural gas, and telecommunications facilities would result in a significant unavoidable impact.

5.17.8 REFERENCES

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