

M. UTILITIES AND INFRASTRUCTURE

This section describes existing utility systems in the vicinity of the project site, discusses policies relevant to these systems, evaluates potential impacts resulting from implementation of the proposed project, and identifies mitigation measures to reduce the significance of potential impacts. The analysis examines water supply, wastewater, solid waste, energy, and telecommunications.

1. Setting

The existing conditions of utilities and infrastructure that relate to the project site are discussed in this section. A discussion of storm drainage is provided in Section IV.D, Hydrology and Water Quality, of this EIR.

a. Water System. The City of Benicia operates and manages its own water service. The City provides treated water to approximately 9,182 customers within the City for residential, commercial, industrial, and irrigation uses. The City also provides untreated water to the Benicia Valero Refinery for industrial uses.

This section describes existing water service and supply in the City of Benicia and is based on information from the City of Benicia *Urban Water Management Plan*,¹ unless otherwise noted.

(1) Water Supply. The City’s water supply comes primarily from contracts and agreements held through the State Water Project (Sacramento Delta) and the Solano Water Project (Lake Berryessa). Approximately 80 percent of the City’s water comes from the Sacramento River Delta and approximately 20 percent comes from Lake Berryessa. These and other sources of the City’s water supply are shown in Table IV.M-1 and are discussed below. In total, the City has existing entitlements for 35,675 to 36,175 acre-feet of water per year.

State Water Project. The City receives State Water Project (SWP) water through an agreement with the Solano County Water Agency (SCWA). SCWA contracts with the California Department of Water Resources (DWR) for the SWP water, and, in turn contracts with cities in Solano County to provide this supply. The City’s current contract amount is 17,200 acre-feet/year; however, under certain entitlement agreements, the City has agreed to reduce this amount to 16,075 acre-feet/year. The SWP contract runs through 2035 and is renewable.

Table IV.M-1: Water Supply Sources

Source	Contract or Water Rights (acre-feet/year)
State Water Project (SWP)	16,075
Water Rights Settlement	10,500
Lake Herman	500-1,000 (average annual yield)
Vallejo Agreement (Solano Project)	1,100
Total	28,175–28,675

Note: The City may also recover a total of 7,500 acre-feet from the Mojave Banking and Water Exchange during dry years

Source: Benicia, City of, 2005. *Urban Water Management Plan, Final Report*. December.

Water Rights Settlement. The “Area of Origin” Water Rights Settlement with DWR provides the City with 10,500 acre-feet/year of water from the Sacramento River that is not

¹ Benicia, City of, 2005. *Urban Water Management Plan, Final Report*. December.

designated as SWP water. This is a permanent allocation of water supply. The Settlement Agreement runs through 2035 and is renewable under the same terms as the SWP.

Lake Herman. Lake Herman is located in the hills between the cities of Benicia and Vallejo and has a storage capacity of 1,800 acre-feet. The average yield of the Lake Herman watershed is 500 to 1,000 acre-feet/year, with no yield in dry years. Water in the reservoir comes from Sulphur Springs Creek, which contains a high sulphur content. Although it can be treated for satisfactory domestic use, the mineral content of Lake Herman water is too high to use in industrial wash processes; it is therefore used as an emergency water supply for the City. The lake primarily serves as terminal storage for excess supply delivered to the City through the North Bay Aqueduct (NBA).

Vallejo Agreement (Solano Project Water). The City currently has an active water purchase agreement with the City of Vallejo. The agreement was first executed in 1962 and has been amended twice. The second amendment extended the agreement to 2025 and it is assumed that the agreement will be renewed. The agreement allows the City to purchase up to 1,100 acre-feet/year of Vallejo's allotment of Solano Project Water from Lake Berryessa.

Mojave Banking and Water Exchange. As a member of the SCWA, the City is entitled to participate in a banking and water exchange program with the Mojave Water Agency. According to the agreement, SCWA (or its members) can exchange two units of SWP water for a future return of one unit of SWP water to be provided at the Delta by Mojave. In wet years the City sends SWP water to be "banked" in the Mojave groundwater basin. The City currently has delivered a total of 15,000 acre-feet to Mojave and can recover a total of 7,500 acre-feet.

(2) Water Treatment Facilities. The City of Benicia owns and operates its own Water Treatment Plant (WTP) located adjacent to the project site near Lake Herman Road. Untreated water from the City's supply sources is conveyed to the WTP. The treatment plant currently has a capacity of 12 million gallons per day (mgd). Incoming raw water is subject to primary and secondary levels of treatment. Primary treatment includes coagulation, flocculation, and sedimentation. Secondary treatment includes filtration and chlorinated disinfection. Treated water is stored in reservoirs at the WTP site for delivery to the distribution system.

During the winter months, particularly after heavy rains, raw water from the Sacramento River conveyed through the aqueduct is very turbid with high total organic compound concentrations and low alkalinity. The WTP has not been able to treat this water effectively unless it is blended with Lake Berryessa water. The WTP is currently being modified to increase its reliability, flexibility, and redundancy so that it can effectively treat 12 mgd throughout the year. The current modifications provide additional sedimentation facilities, provide more flexibility to operate the filters, meet disinfection requirements, comply with future water quality regulations, and restore treated water storage capacity for more flexibility.

(3) Recycled Water. The City and the Benicia Valero Refinery are currently partnering to supply recycled water to the refinery. Upon completion, the project will divert a large fraction of the City's treated wastewater to the refinery for industrial uses on a year round basis. Construction of the recycled water facilities is scheduled to be completed in 2009, with delivery of recycled water commencing by 2010. The project would supply approximately 2,240 acre-feet/year of recycled water to the refinery, thereby reducing the refinery's consumption of potable water.

(4) Water Conveyance System. The City's raw (untreated) water supply comes primarily from two surface water bodies, Lake Berryessa and the Sacramento Delta. Water from these sources is conveyed to the WTP where it is treated and then conveyed to customers throughout the City.

Raw Water Conveyance. State Water Project water is conveyed to the City through the North Bay Aqueduct (NBA) from the Sacramento River. The NBA, which is operated remotely by DWR, is an underground pipeline that runs from Barker Slough in the Delta to Cordelia Forebay, just outside of Vallejo. The size of the underground pipeline varies from 72 inches at Barker Slough to 54 inches at Cordelia Forebay. From the Cordelia Forebay, water is pumped to Napa County, Vallejo and Benicia. The pump station has a total capacity of 20.7 mgd. A 30-inch line extends from the Cordelia Forebay and connects to the City's 36-inch raw water transmission line.

When raw water from the NBA is unavailable or of poor quality due to high turbidity and organic content, the City obtains its water from the City of Vallejo. This water is conveyed from Lake Berryessa through the Putah South Canal Terminal Reservoir. During these periods, the City operates the Cordelia Pump Station to take water from the Canal and deliver it to the City's WTP through a 24-inch diameter pipeline. The City's portion of the Cordelia Pump Station has a capacity of 10.8 mgd and is manually operated by the City during these periods.

Surplus flow not needed at the WTP is diverted by gravity to Lake Herman through a 33-inch/24-inch diameter pipeline, then into a 30-inch pipeline that drains to Lake Herman. There is also a 16-inch drain line to the collection system. During emergencies when water from the NBA or the Putah South canal is not available, the City pumps water from Lake Herman back to the WTP through the Lake Herman Pump Station. The pumps station's capacity is 9.6 mgd.

Treated Water Conveyance. The treated water distribution system consists of three main pressure zones. The zones are served by five storage reservoirs, three pumping stations, and eight active pressure-reducing valve (PRV) stations. The water distribution pipeline system is composed of 4-inch to 36-inch diameter pipelines.

The project site does not currently receive water and would require the extension of new water distribution facilities. Existing 12-inch, 16-inch, 24-inch, and 30-inch pipelines are located beneath Industrial Way and Park Road.

b. Wastewater (Sanitary Sewer) System. The City of Benicia provides wastewater collection, treatment, and disposal services. This section describes the existing wastewater treatment facilities and collection system within the City.

(1) Wastewater Treatment Facilities. The City of Benicia Wastewater Treatment Plant (WWTP) is located at the intersection of East 5th Street and East G Street. The WWTP has a design capacity of 4.5 mgd. Current average dry weather flow is approximately 3 mgd. The maximum short-term hydraulic capacity to handle peak wet weather flows at the WWTP is approximately 30 mgd. The WWTP provides secondary level treatment for domestic, commercial, and industrial wastewater. Untreated wastewater enters the WWTP from two main gravity sewer pipelines and a third wet weather gravity interceptor pipeline.

Wastewater entering the WWTP is screened to remove larger objects and is then subject to primary sedimentation, solids treatment, and secondary sedimentation to remove small particles and contaminants. The effluent is then disinfected prior to discharge to the Carquinez Strait.

(2) Collection System. Facilities for conveying wastewater from the City to the Treatment Facility consist of 150 miles of gravity pipelines and force mains, and 24 lift stations. The majority of the collection system pipelines range in size from 4 to 30 inches in diameter, with approximately 50 percent of the system consisting of pipe greater than 6-inches in diameter. Reports utilized in this analysis include the *Benicia Business Park Sewer Collection Analysis*, published by Brown and Caldwell on October 16, 2006 and *Benicia Business Park Sewer Alignment Review*, published by Stetson Engineers on June 26, 2006.²

Gravity sewer lines in the vicinity of the project site are located parallel to Industrial Way and Park Road. These pipes range from 8- to 15-inches in size. These two lines connect to the Park/Industrial Lift Station (referred to as the PILS). This pump station has a designed operating point of 1,200 gallons per minute (gpm) and a total dynamic head (TDH) of 62 feet. The actual operating range of each pump is estimated to be approximately 550 gpm. The PILS is designed to accommodate the phasing in of additional capacity. In addition to the PILS, there are five other pump stations that contribute flow to the force main: Industrial lift station, Tiresshop lift station, Bayshore lift station, Wharf lift station, and Benicia Industries lift station. These pump stations, with the exception of the Tiresshop lift station, contribute negligible flows to the force main system. The force main system includes parallel force mains, one 8 inches in diameter and the other 12- to 14-inches in diameter. The force main system runs from the PILS to within 1,400 feet of the WWTP. The force main empties into a 24-inch gravity sewer line, which transports wastewater to the WWTP. The existing Peak Wet Weather Flows (PWWF) and system capacity for these systems, based on the Sewer Study prepared by Brown and Caldwell in 2006, are shown in Table IV.M-2. The Benicia Public Works Department does not fully agree with the data presented in Table IV.M-2 and the conclusions of Brown and Caldwell in regard to existing system capacities and operational limits. Based on Public Works Department maintenance and operations records, the existing sewer collection system (including the existing pump station and force main systems) functions adequately and is serviceable according to Public Works Department maintenance and operations records.

Table IV.M-2: Existing Flows and System Capacity^a

		Existing PWWF (gpd)	Existing Capacity (gpd)	Percent of Capacity
Industrial/Park Gravity Sewer	East Fork	446,000	2,016,000	22
	West Fork	1,113,000	865,000	130
Park/Industrial Lift Station		2,685,000	1,728,000	155
Park/Industrial Force Main		4,221,000	2,200,000	192
24-inch Gravity Sewer		4,393,000	7,051,000	62

^a System capacity is based on PWWF which is a combination of base flow, groundwater infiltration and rainfall dependent infiltration and inflow.

Source: Brown and Caldwell, 2006.

² Brown and Caldwell, 2006. *Benicia Business Park Sewer Collection System Analysis*. October 16. Stetson Engineers, 2006. *Benicia Business Park Sewer Alignment Review*. June 26.

c. **Solid Waste.** The following section describes Benicia's non-hazardous and hazardous waste disposal services and capacity, as well as the City's solid waste regulatory context.

(1) **Non-Hazardous Solid Waste.** Allied Waste Management (formerly Pleasant Hill Bayshore Disposal) is the local franchise collector for residential recyclables, yard waste, garbage, and commercial refuse in the City of Benicia. Open market recycling services are also available for businesses. Services include: office waste paper; cardboard; newspaper; mixed recyclables and green waste collection.

Non-hazardous solid waste is taken to the Keller Canyon Landfill in unincorporated Pittsburg. The landfill handles construction, demolition and mixed municipal waste. The landfill had a capacity of 68,279,670 cubic yards in 2001 and a permitted throughput³ of 3,500 tons per day.⁴ The landfill is estimated for closure in the year 2030; however this date is subject to future review and revision.

(2) **Hazardous Solid Waste.** The City's hazardous wastes are disposed of at the Kettleman Hills Facility, which is operated by Chemical Waste Management, Inc. The Kettleman Hills Facility is located in the San Joaquin Valley along Interstate 5, approximately midway between San Francisco and Los Angeles.⁵ The facility is approved to manage hazardous materials under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and permitted under the Toxic Substances Control Act (TSCA) and the Resource Conservation and Recovery Act (RCRA). The facility accepts municipal solid waste, non-liquid industrial waste, contaminated soils, ash, grit and sludge. The Kettleman Hills Facility had a remaining capacity of 3,374,415 cubic yards as of September 2001 and has an estimated closure date of December 31, 2010 based on a permitted throughput of 1,400 tons per day.⁶

(3) **Assembly Bill (AB) 939.** The California Integrated Waste Management Act of 1989 (AB 939) requires local cities and counties to adopt an Integrated Waste Management Plan (IWMP) to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. All solid waste management in Solano County is governed by the adopted Countywide IWMP. As part of AB 939, all California cities and counties were required to divert 50 percent of solid waste from landfills through the implementation of various strategies, including source reduction, composting, recycling, and yard waste programs by the end of year 2000. The City successfully exceeded this requirement by diverting 62 percent of solid waste in the year 2000. The most recent reporting information shows that the City continues to exceed this requirement; in 2004 (the year for which the most recent information is available) the Countywide IWMB approved diversion rate for the City was 61 percent.

³ Permitted throughput is the maximum permitted amount of waste a landfill can handle and dispose of in one day. This figure is established in the current solid waste facilities permit issued by the Integrated Waste Management Board.

⁴ California Integrated Waste Management Board, 2006. Facility/Site Summary Details Keller Canyon Landfill. <http://www.ciwmb.ca.gov/swis/detail.asp>. October 10.

⁵ Waste Management, Inc., 2003. *CWM Kettleman Hills Landfill*. Website: www.wm.com.

⁶ California Integrated Waste Management Board, 2006. Facility/Site Summary Details, Kettleman Hills Landfill. <http://www.ciwmb.ca.gov/SWIS/detail.asp>. October 10.

The Countywide IWMB estimates an average waste generation rate of 10.5 pounds per employee per day for commercial uses⁷ and 9 pounds per employee per day for industrial uses.⁸

d. Telecommunications. AT&T provides telephone and digital subscriber line (DSL) internet services and Comcast provides cable television and internet services to the City. Both of these service providers are privately owned and operated and recover the costs of operation, maintenance, and capital improvement through connection and user fees, which are collected from customers. These services are currently available near the project site.

The California Public Utilities Commission (CPUC), which regulates California's telecommunication industry, requires that local phone service providers anticipate and serve new growth. To meet this requirement, local phone service providers continually upgrade their facilities and infrastructure, adding new facilities and technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the City.

e. Electricity and Gas. The Pacific Gas & Electric Company (PG&E) provides electricity and natural gas service to customers in Benicia. PG&E charges connection and user fees for all new development, in addition to sliding rates for electrical and natural gas service based on use. These services are currently available adjacent to the project site.⁹ Regulatory requirements related to electricity and gas is discussed below.

Title 24, Part 6, of the California Code of Regulations, entitled "Energy Efficiency Standards for Residential and Nonresidential Buildings," specifies requirements to achieve the State's minimum energy efficiency standards. The standards apply to new construction of both residential and nonresidential buildings, and regulate energy consumed for heating, cooling, ventilation, water heating and lighting. Compliance with these standards is verified and enforced through the local building permit process.

2. City of Benicia General Plan

Applicable utilities and infrastructure-related General Plan goals, policies, and one program are presented below.

Land Use and Growth Management

- *Growth Management Goal 2.4:* Ensure that development pays its own way.
 - *Growth Management Program 2.4.A:* Monitor development to ensure it does not overburden the City's infrastructure.

⁷ Integrated Waste Management Board, 2006. *Estimated Solid Waste Generation Rates for Commercial Establishments*. Website: www.ciwmb.ca.gov/WasteChar/WasteGenRates/Commercial.htm. October 10.

⁸ Integrated Waste Management Board, 2006. *Estimated Solid Waste Generation Rates for Industrial Establishments*. Website: www.ciwmb.ca.gov/WasteChar/WasteGenRates/Industrial.htm. October 10.

⁹ Lua, Keith, 2006. Service Planner, Pacific Gas & Electric Company. Personal communication with LSA Associates, Inc. October 4.

Community Services

- *Water Goal 2.36:* Ensure an adequate water supply for current and future residents and businesses.
 - *Water Policy 2.36.1:* Approve development plans only when dependable and adequate water supply to serve the development is assured.
- *Water Goal 2.40:* Ensure adequate wastewater treatment capacity to serve all development shown in the General Plan.
 - *Water Policy 2.40.1:* Approve changes in land use designations for new development only if adequate wastewater treatment capacity is assured.
- *Recycling Goal 2.42:* Enhance the recycling of solid waste.

3. Impacts and Mitigation Measures

This section discusses potential impacts to infrastructure and utility systems that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate. Less-than-significant impacts to infrastructure and utilities are discussed first, followed by significant impacts.

a. Significance Criteria. The proposed project would have a significant impact on the City's infrastructure and utility systems if it would:

- Increase water demand such that there would not be sufficient water supplies available to serve the project from existing entitlements and resources, or would require new or expanded entitlements;
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects;
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it does not have adequate capacity to service the project's projected demand in addition to the provider's existing demand;
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Violate applicable federal, State, and local statutes and regulations related to solid waste.

b. Less-than-Significant Impacts. The proposed project would result in the following less-than-significant impacts to utilities and infrastructure.

(1) Water Supply. California Senate Bill 610 (SB 610) requires that water retailers must demonstrate whether their water supplies are sufficient to meet the projected demand of certain large development projects. In accordance with SB 610, the City prepared a Water Supply Assessment (WSA)¹⁰ for the proposed project. The WSA relies in part on information provided by development projections included in the City's *Urban Water Management Plan*, which includes development of the business park. The *Urban Water Management Plan* assumes that the business park development would comprise 33 acres of commercial development and approximately 264 acres of light industrial

¹⁰ CDM, 2005. *Water Supply Assessment for Benicia Business Park*. December.

and flex space (which refers to buildings which may be suitable for office, commercial or light industrial use). The proposed project would include approximately 35 acres (857,000 square feet of building space) of commercial uses and 280 acres (4,443,440 square feet of building space) of industrial uses. Although the proposed project would exceed the City’s projected water demand for the proposed project, the slight increase in development acreage would not affect the conclusions of the WSA.¹¹

Table IV.M-3 compares the City’s water supply and demand for 2005 to 2025 for a normal year, single dry year, and multiple dry years. The WSA determined that the City has adequate existing water supply sources to meet the future water supply needs of the City under all conditions, including development of the proposed project and all other existing and planned future uses anticipated by the General Plan.¹²

Table IV.M-3: Supply and Demand (Acre-Feet/Year)

	2005 ^b			2020, 2025 and Later ^c		
	Normal Year	Single Dry Year	Multiple Dry Year	Normal Year	Single Dry Year	Multiple Dry Year
Supply from All Sources ^a	21,670	18,937	17,354	25,357	20,684	19,550
Demand	11,897	11,897	11,897	13,527	13,527	13,527
<i>Surplus of Supply</i>	<i>9,773</i>	<i>7,040</i>	<i>5,457</i>	<i>11,830</i>	<i>7,157</i>	<i>6,023</i>

^a City supply sources include the State Water Project.

^b 2005 supply does not include recycled water deliveries. Recycled water supply will be available starting in 2010, so it is included in the buildout supply.

^c Buildout is anticipated to occur by 2020. Therefore, demands in 2025 and later are expected to be the same as 2020.

Source: CDM, 2005. *Water Supply Assessment for Benicia Business Park*. December.

In addition, the City’s WTP has adequate capacity to meet the demands of the proposed project.¹³ The City’s master planning for the WTP and the distribution system that conveys treated water to customers have taken into account future demand, including the demand of the proposed project.¹⁴ Service to the proposed project would require additional storage and pumping capacity and extension of treated water distribution facilities to and within the project site. Potential impacts of the proposed project associated with extension of water supply infrastructure are discussed below.

(2) Wastewater. Although implementation of the proposed project would result in an increase in the demand for wastewater treatment, storage, and disposal, this demand would not result in dry weather wastewater flows that exceed existing or planned capacity of the WWTP.

Calculated PWWF for the proposed project would be 1.59 mgd.¹⁵ PWWF for the proposed project could adversely affect the capacity of the existing collection system. Under peak conditions, the 24-

¹¹ Roberts, Michael, 2006. Senior Civil Engineer, City of Benicia Public Works Department. Written communication with LSA Associates, Inc. February 7.

¹² CDM, 2005. op. cit.

¹³ Ibid.

¹⁴ CDM, 2005. op. cit.

¹⁵ Brown and Caldwell, 2006. *Benicia Business Park Sewer Collection System Analysis*. October 16.

inch gravity sewer line would be slightly overloaded, but this would not warrant a pipeline replacement or relief sewer. The 24-inch gravity sewer line would have sufficient capacity through General Plan and project buildout. In addition, the east fork of the Industrial Park gravity sewer is in good condition and would have sufficient capacity through General Plan buildout with the proposed project. The proposed project would require new infrastructure. There should be limited to no inflow/infiltration into the infrastructure constructed as part of the project due to wet weather flows and wet weather flows should not increase beyond what the development would contribute in dry weather.

However, the proposed project would require the extension of wastewater infrastructure onto the site, as well as upgrades to the west fork of the Industrial Park gravity sewer system, the PILS, and to the existing force mains to increase overall system capacity. Expansion of existing facilities is discussed below in the significant impacts analysis.

(3) Solid Waste. As described above, the CIWMB estimates an average waste generation rate of 10.5 pounds per employee per day for commercial uses¹⁶ and 9 pounds per employee per day for industrial uses.¹⁷ The proposed project would result in an estimated total of 857,000 square feet of commercial development, which would generate approximately 1,857 jobs (see Table IV.B-2 in Section IV.B, Population, Employment, and Housing). Proposed industrial development would include 4,443,440 square feet, generating approximately 5,823 jobs. Commercial employees would generate approximately 19,500 pounds per day of solid waste, while industrial employees would generate approximately 52,400 pounds per day of solid waste. This would amount to an estimated total of 71,900 pounds per day (32 tons per day) generated by the proposed project at buildout. This represents less than 1 percent of the total daily permitted throughput for the Keller Canyon Landfill. The amount of operational solid waste generated by development of the proposed project would not exceed the capacity of Keller Canyon Landfill. Therefore, the proposed project would have a less-than-significant impact on landfill capacity.

In addition, Allied Waste Management would provide commercial and industrial recycling services, thereby reducing the solid waste generated by proposed development. The design and location of on-site recycling bins would be subject to City review and approval prior to issuance of building permits.

(4) Energy and Telecommunications. As described above, development of the proposed project would occur in an area that is currently serviced by electricity, natural gas, telephone, cable, and internet infrastructure located along local streets. Development of the proposed business park with commercial and industrial uses is anticipated in the City's General Plan, as well as by the utility providers who coordinate future service demands with the City. As such, development of the proposed project is anticipated and, as a result, would have a less-than-significant impact on electricity, gas, telecommunications, cable, and internet services.

¹⁶ Integrated Waste Management Board, 2006. *Estimated Solid Waste Generation Rates for Commercial Establishments*. Website: www.ciwmb.ca.gov/WasteChar/WasteGenRates/Commercial.htm. October 10.

¹⁷ Integrated Waste Management Board, 2006. *Estimated Solid Waste Generation Rates for Industrial Establishments*. Website: www.ciwmb.ca.gov/WasteChar/WasteGenRates/Industrial.htm. October 10.

c. **Significant Impacts.** The proposed project would result in the following significant impacts related to the extension of infrastructure onto the project site.

(1) **Water Distribution.** The proposed project would result in the following significant impacts related to water distribution.

Impact UTIL-1: Implementation of the proposed project would require the extension of water supply distribution facilities to service proposed uses. (S)

As discussed above, the project site does not currently receive water and would require the extension of new water distribution facilities. Existing 12-inch water mains are located beneath Industrial Way and Park Road. Water would be provided to the project site by new pumping facilities and two new tank reservoirs on a separate pressure zone system from the City of Benicia. Each water supply tank would have a capacity of 1 million gallons and would be located in the northern open space portions of the site, one west, and one east of, the existing WTP. Treated water pumping facilities would be located at the intersection of the proposed "I" Court and "A" Boulevard.

Water lines of 12 to 15 inches in diameter would be installed throughout the site (see Figure III-6). Development and construction of the proposed project would occur in five phases, with the installation of utilities, including water distribution facilities, required to serve the phase under construction.

The proposed project would be subject to the City's standard Conditions of Approval relating to the extension of water services, including the assessment of fees for the costs of on-site and off-site improvements required to serve the project. The following mitigation measure would ensure that potential impacts related to the extension of water distribution facilities onto the site are reduced to a less-than-significant level:

Mitigation Measure UTIL-1: Construction of water supply infrastructure shall be subject to the following measures:

- The main AH water storage and pumping facilities as required by the Benicia Public Works Department to provide domestic and fire service ~~serve the proposed project~~ shall be constructed and operational before the first phase of development begins. The main connections shall be sized to serve the whole development and not upsized with each phase.
- All on-site water infrastructure improvements required to serve each phase of development shall be constructed in the initial year of development of that phase.
- The sponsor shall obtain City approval for each phase of development, including development of individual projects. Development plans for individual projects shall only be approved when a dependable and adequate water supply is available to serve new development.
- The two new tanks shown on the project plans are located at different elevations, which would require two separate pressure zones. ~~The City shall require the plans to be modified so that only one new pressure zone is required for the project site.~~ Pressure-reducing valve stations and zone valves shall be required to allow ~~this~~ the new zones to connect to the City's existing Zone 1 system in an emergency. (LTS)

Impact UTIL-2: Implementation of the proposed project would result in construction activities with the potential to adversely affect the City's water supply transmission line and reservoir.
(S)

Project construction, including grading, would occur in the vicinity of a 24-inch raw water pipeline that serves the Lake Herman pump station and a 30-inch treated water line serving the City. Disruption of either of these facilities could result in a temporary shutdown of the City's water supply. An extended shutdown of the water supply would require emergency actions to reduce demands on the system. Implementation of the following mitigation measure would ensure that potential impacts to the City's water supply distribution system are reduced to a less-than-significant level:

Mitigation Measure UTIL-2: Construction activities for the proposed project shall be subject to the following measures:

- Final design of the proposed project shall specify the appropriate depths at which grading and construction activities would be allowed in order to ensure the safety of the City's water supply and distribution system.
- Water lines shall be rerouted or redundant lines installed by the sponsor if necessary to avoid impacts to the City's water supply distribution system.
- No work shall be performed within 30 feet of the centerline of the City's water line until after improvement plans prepared by a registered engineer are submitted for review and approval by the City and a permit is issued by the City.
- Prior to issuance of a City permit, contingency plans shall be submitted for review and approval by the City to address a potential accident during construction resulting in damage to the line.
- The sponsor shall require that all construction activities are undertaken with the necessary precautions to avoid impacts to the City's water distribution system. (LTS)

(2) Wastewater Distribution. The proposed project would result in the following significant impact related to wastewater distribution.

Impact UTIL-3: Implementation of the proposed project would require extension of wastewater collection lines to serve the project. (S)

The project site does not currently receive sanitary sewer service and would require on- and off-site wastewater infrastructure improvements to the collection system and to the existing PILS. The proposed project would connect to existing sewage mains at three points along East 2nd Street, including a 12-inch main at Industrial Way, a 10-inch main at Reservoir Road, and a 12-inch main at Park Road. Although improvements to off-site sewer facilities allowing for adequate wastewater treatment capacity have been identified in the Sanitary Sewer Study for the proposed project, the timing of these improvements would be critical.

Mitigation Measure UTIL-3: Construction of sewer infrastructure improvements for the proposed project shall be subject to the following measures:

- All on-site sewer infrastructure improvements required to serve each phase of development shall be constructed in the initial year of development of that phase.
- Since the ultimate commercial and industrial users of the proposed project are unknown, the City shall review each building permit application for information regarding flows and loads to ensure that wastewater flows do not exceed capacity, and to allow for the phasing of improvements. (LTS)

Impact UTIL-4: Implementation of the proposed project would exceed the capacity of the existing wastewater collection system during peak wet weather periods. (S)

As discussed above, PPWF for the proposed project would be 1.59 mgd (1,592,500 gpd). Table IV.M-4 shows existing and future (with General Plan buildout and with the proposed project) PPWF for the Industrial gravity sewer system, the Park/Industrial Force Main, and the 24-inch gravity sewer line. These flows are based on one set of flow factors (Run 3) used in the sanitary sewer analysis. These flow factors are the basis for the improvements recommended as part of Mitigation Measure UTIL-4, below.

Table IV.M-4: Existing and Future Peak Wet Weather Flows

	Current (gpd)	Buildout (gpd)	Buildout with Project (gpd)
Industrial Gravity Sewer (at PILS)	4,010,500	4,010,500	5,603,000
Park/Industrial Force Main	1,609,200	2,009,200	2,009,200
24-inch Gravity Sewer	163,680	163,680	163,680

Source: Brown and Caldwell, 2006.

The west fork of the Industrial Park gravity sewer system is in poor condition and has insufficient capacity (see Table IV.M-2). In addition, the PILS and force main require modifications to increase operating efficiency and capacity. Lift stations along the force main could be adversely affected by the proposed project and could require an upgrade. Other improvements may also be required to accommodate increased flow from the project site. Implementation of the following mitigation measure would reduce this impact to a less-than-significant level:

Mitigation Measure UTIL-4: Prior to the issuance of building permits for Phase 1 of the proposed project, the project sponsor shall fully fund and install all the required ~~on-site and~~ off-site wastewater collection improvements to serve the project. Required improvements shall consist of one of the stand-alone alternatives listed in the Benicia Business Park Sewer System Collection Analysis (October 16, 2006) prepared by Brown and Caldwell that solely serves the proposed project. Required improvements include the following:

- Replace the existing 8-inch west fork of the Industrial Park gravity sewer system with a new 18-inch sewer line.
- Replace the existing 8-inch force main with a new 16-inch force main that is cross-connected to the existing force main.
- Replace the existing PILS to operate at a new higher pressure to maximize capacity in both pipelines. Upgrade the PILS to meet the design criteria of the two pipelines.

- Increase maintenance of eastern fork of gravity sewer to reduce root intrusion and the long-term settlement of debris.
- A force main surge analysis shall be performed prior to approval of final project design. Proposed improvements to the force main shall be reviewed and approved by the City prior to installation.

Implementation of the above mitigation measure would reduce impacts to the capacity of wastewater collection facilities to a less-than-significant level. (LTS)

