

## BACKGROUND REPORT



# PUBLIC UTILITIES

.....  
providing efficient  
and reliable public  
utility services  
requires coordination  
with planned growth  
to power our  
community's future

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## **Section 1. Introduction**

### **1.1 Description of Public Utilities Background Report**

The purpose of the Public Utilities Background Report is to support the City of Isleton's update to the Public Utilities Element of the General Plan. This Background Report presents existing conditions and trends specific to distribution of power, natural gas, water, and communications as well as collection of wastewater and stormwater drainage in the City of Isleton. The report will also be a resource for future planning projects, studies, and reports associated with other element updates.

## **Section 2. Plans, Policies, and Regulatory Environment**

The plans, policies, and regulatory environment detailed in this section are broken down by Federal, State, and Regional and Local oversight. They all play a role in the future development of utility infrastructure and facilities in the City of Isleton.

### **2.1 Federal Regulations and Agencies**

#### **2.1.1 Title 16, Chapter 46, Public Utility Regulatory Policies**

In 1978, the US Congress adopted statutes governing public utilities, but more specifically governing electric utilities. The purposes of Chapter 46, Title 16 of the Code of Laws of the US (USC), are to encourage (1) conservation of energy supplied by electric utilities; (2) the optimization of the efficiency of use of facilities and resources by electric utilities; and (3) equitable rates to electric consumers. (16 USC Ch. 46 Section 2611)

#### **2.1.2 US Environmental Protection Agency**

The US Environmental Protection Agency (USEPA) has set national safety standards for drinking water since 1974.

### **2.2 State Regulations and Agencies**

#### **2.2.1 California Government Code**

California Government Code [Section 65302\(b\)](#) provides the overarching framework for the Public Utilities Element, which provides additional detail as required by state law for a circulation element

to a general plan. Specifically, the Public Utilities Element must provide the general locations and extents of existing and proposed local public utilities and facilities, correlated with the Land Use Element of the plan. In addition, California Government Code Section 65302(a) requires general plans to identify the distribution and general location and extent of the uses of the land for solid and liquid waste disposal facilities and other categories of public uses of land, such as utility infrastructure and facilities.

### 2.2.2 OPR Guidelines

The Governor's Office of Planning and Research (OPR) was created by statute in 1970 and is part of the Office of the Governor. OPR serves the Governor and his Cabinet as staff for long-range planning and research and constitutes the comprehensive state planning agency (California Government Code Section 65040) OPR is required by state law to adopt and periodically revise the state General Plan Guidelines (GPG) for the preparation and content of general plans for all cities and counties in California. The GPG serves as the "how to" resource for drafting a general plan (Governor's Office of Planning and Research, 2020) The OPR guidelines were last updated comprehensively in 2017.

Per the GPG, general plans must identify the location and necessity of public utilities and facilities. Relevant utilities include water, wastewater, stormwater systems, communications, electric vehicle charging stations, electricity, and natural gas. These facilities relate directly to the land uses planned in the Land Use Element; consequently, the Public Utilities Element should consider not just "right sizing" such infrastructure to serve only that growth that is actually planned, but also placing infrastructure in areas that maximize efficiency and minimize impacts to the community.

"Dig once" policies can help ensure efficiencies and reduce costs for utilities infrastructure. The underlying premise of a "dig once" policy is to coordinate utility line and facility construction with unrelated civil works projects, such as coordinating roadway and sewer construction projects, to create a usable infrastructure for future network provisioning. The goal and emphasis should be on impacting rights-of-way as few times as possible. While not always feasible, coordinating among circulation infrastructure agencies may help reduce costs and impacts on the local community. In identifying existing infrastructure and planning for future needs, local governments should work closely with any relevant service providers, including water districts, private utility providers, and others.

Regarding planning for broadband internet, both state and federal governments are implementing various funding programs that serve the goal of expanding access to unserved and underserved areas. Within California, the California Public Utilities Commission (CPUC) manages the California Advanced Services Fund (CASF), which invests hundreds of millions of dollars annually in broadband deployment. The state also created the California Emerging Technology Fund (CETF), which was designed to be a public-purpose venture capital fund. Dig once policies can substantially



reduce costs for providing broadband service to communities. For example, if conduit construction was promoted along ongoing civil work projects, fiber deployment costs drop by \$30,000 to \$100,000 per mile. On average, 60 to 90 percent of network deployment costs come from civil works as opposed to equipment and maintenance.

### 2.2.3 California Department of Water Resources

The California Department of Water Resources (DWR) implements the California Water Code and manages California's water resources, systems, and infrastructure, including the State Water Project (SWP). This agency plans for future water needs and climate change impacts to water supplies based on scientific solutions, in addition to constructing and maintaining facilities, generating power, informing and educating the public on water issues, restoring natural habitats, providing recreational opportunities, and preventing and responding to floods, droughts, and catastrophic events. DWR is also responsible for regulating the use of groundwater, which accounts for at least one-third of all water use in California including in the City of Isleton.

## 2.3 Regional and Local Regulations, plans, and Agencies

### 2.3.1 Delta Plan

The State created the Delta Stewardship Council (Council) in 2009 to help achieve the State-mandated coequal goals for the Delta<sup>1</sup>. The Council prepared and adopted the Delta Plan in 2013. The Delta Plan is the comprehensive, long-term management plan for the Delta to further the coequal goals. The Delta Plan is enforceable through regulatory authority in the Delta Reform Act that requires city and county land use decisions to be consistent with the Delta Plan, and the Council can overturn land use decisions that are inconsistent with the Plan.

The Delta Plan designates the area outside the city limits as agriculture. Acceptable and recommended growth strategies for these areas includes agriculture, tourism, agritourism, nature-based recreation, and other resilient land uses that do not conflict with the Delta Plan.

<sup>1</sup> Coequal goals' means the two goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.' (CA Water Code §85054)

### 2.3.2 Brannan-Andrus Levee Maintenance District (BALMD)

The islands of Brannan, Andrus, and Lower Andrus are represented by individual reclamation districts, each with its own elected Board of Trustees. The reclamation districts (RD) surrounding the City of Isleton include RD2067, RD317 and RD407, as displayed in Figure 2-1. These agencies operate the drainage pump facilities and oversee maintenance of the primary drainage canals around Isleton. Recognizing that the levees of these three districts are interconnected and impact

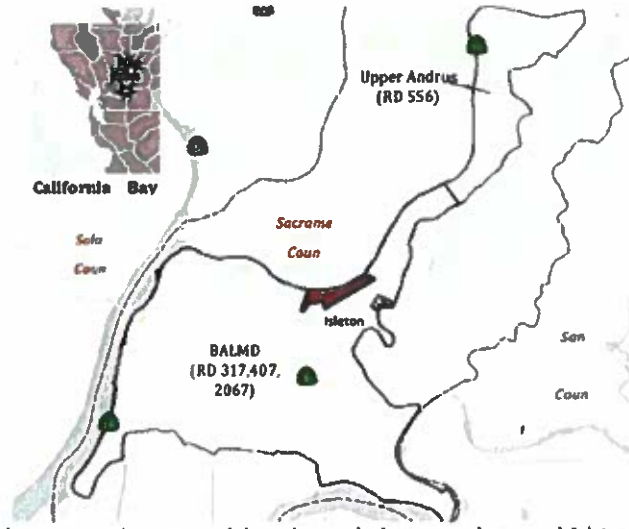


Figure 2-1 Reclamation Districts

each other, the oversight and maintenance of the levees protecting the three areas were legislatively vested in a single entity known as Brannan-Andrus Levee Maintenance District (BALMD).

### 2.3.3 Central Valley Regional Water Quality Control Board

The Regional Water Quality Control Board (RWQCB), Central Valley Region, regulates surface water pollution (wastewater discharge and stormwater runoff), dredging, and filling. RWQCB issues permits and requires monitoring for all activities that could impair the beneficial use of the receiving waters. Future development in the City of Isleton that includes activities or discharges that affect California's surface, coastal, or ground waters will be required to go through the permitting process with the Central Valley Regional Water Quality Control Board.

### 2.3.4 Sacramento LAFCo

Sacramento LAFCo exercises both regulatory and planning functions. While annexations are a regulatory act overseen by LAFCo, the Commission's major planning task is the establishment, periodic review, and update of SOIs for the various governmental bodies within their jurisdictions. As





described by California Government Code Section 56076, the SOI is "a plan for the probable physical boundaries and service area of a local government agency as determined by the commission." In establishing, amending, or updating a SOI, a LAFCo must consider and make written determinations with regards to certain factors found under Section 56425(e).

### 2.3.5 Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento region. Its members include the counties of El Dorado, Placer, Sacramento, Sutter, Yolo, Yuba and the 22 cities within. SACOG provides transportation planning and funding for the region and serves as a forum for the study and resolution of regional issues.

## Section 3. Public Utilities Existing Conditions

This section provides an overview of existing public utilities serving the Isleton community.

### 3.1 Drinking Water Distribution

Drinking water is supplied to the City of Isleton by California American Water, a private water company. The water system consists of wells, pumps, water treatment equipment, water storage, distribution piping, fire hydrants, valves, and other equipment. See Figure 2 for an overview of water utility infrastructure. The Isleton water system is served by three wells located within the geographic region of the Isleton service area that pump groundwater from local aquifers.

To maintain drinking quality in the Isleton water distribution system, California American Water uses treatment technologies to filter out dirt and organic matter and to remove naturally occurring arsenic, iron, and manganese from the pumped groundwater. The water is chlorinated to ensure that it meets bacteriological quality standards before being distributed through water mains for residential and commercial use throughout the city (Figure 2). (California American Water, 2022)

Results of water quality testing in 2022 show that Isleton's drinking water is fully compliant with state and federal drinking water requirements. (*Id.*) In 2003, California American Water completed an assessment of the drinking water sources in the Isleton system to identify potential sources of contamination. Although not associated with any chemicals detected during regular testing, Isleton's sources are considered most vulnerable to sewer collection systems; automobile gas stations, chemical and petroleum processing or storage, dry cleaners; landfills and dumps; metal plating, finishing, or fabricating, confirmed leaking underground storage tanks (LUST), and runoff from irrigated crops. (*Id.*)

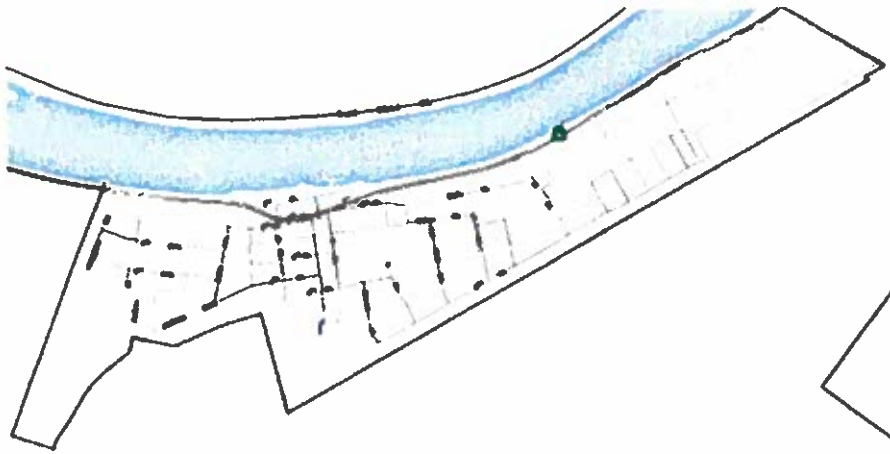


Figure 2: Existing Water Utility Infrastructure and Facilities

### 3.2 Wastewater Disposal

The City of Isleton collects, treats, and disposes of wastewater originating from residential, commercial, and industrial land uses within the city limits, in addition to accepting wastewater from the Oxbow Marina Recreational Facility on a contractual basis. The city owns, maintains, and operates all wastewater facilities connected to the collection and treatment system within the service area. System components are identified in Figure 3.

The Isleton WWTF receives wastewater from the nearby Oxbow Marina Recreational Facility, but the city is not responsible for any operations or maintenance of Oxbow's collection or conveyance system. Based on historical flow logs, Oxbow Marina discharges approximately 12,000 gallons per day (gpd) to the WWTF. There is an agreement between Oxbow and the City of Isleton for the acceptance of this wastewater, but there is not an agreed upon maximum flow.

Oxbow Marina consists of a boat holding tank pump-out station, public restrooms, club house, office, and 95 mobile homes. Wastewater is pumped to the WWTF via a six-inch force main which runs along the toe of the Georgiana Slough levee. The force main enters the WWTF near the headworks, is metered and then discharged into the primary aeration pond. Operation and maintenance of the Oxbow Marina collection system, lift station, and force main is the responsibility of the Oxbow Marina Recreational Facility.



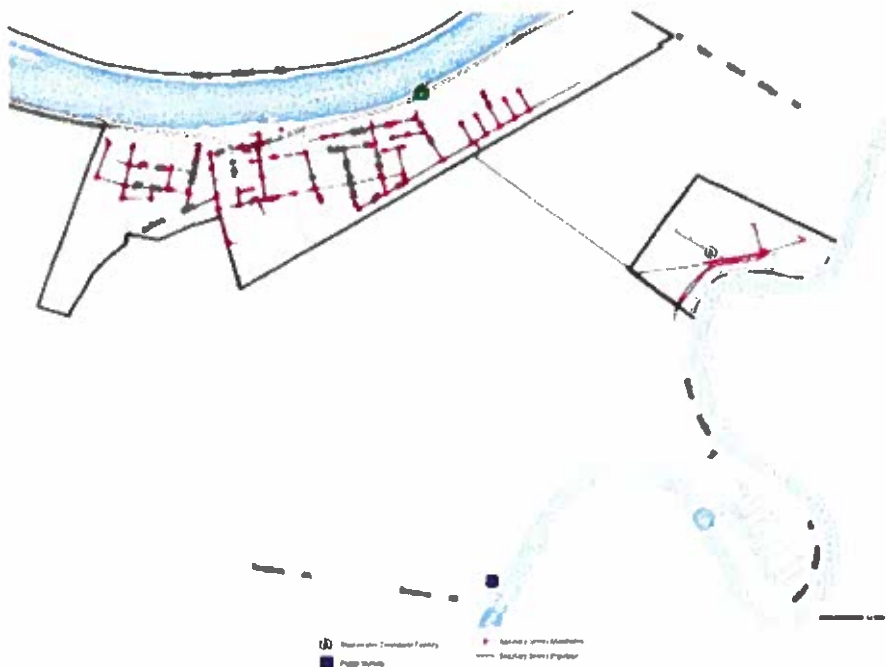
Isleton is currently operating under Order 90-186, adopted in 1990, for its waste discharge requirement and a cease and desist order (CDO) Number R5-2012-0006. The CDO was issued due to capacity problems and wastewater spills at the treatment facility. Under the CDO monitoring and reporting program, the city is required to monitor the wastewater collection and disposal system and produce reports monthly, quarterly, and annually. Once it is demonstrated that the city's wastewater treatment facility (WWTF) has enough on-site storage to contain the design flow for a 100-year storm event plus two feet of additional protection (i.e., freeboard), the CDO can be lifted.

Isleton's wastewater collection system consists of approximately 21,107 linear feet of six- to 12-inch gravity-fed sewer mains and approximately 81 manholes. The system generally flows north to south and then east to west. Approximately half of the sewer pipes have been replaced or rehabilitated since construction of the original system; the remaining pipes are assumed to be from the early 1900s. Overall, the pipes in the collection system have adequate capacities under various flow conditions to support existing and future development in the city.

The city's pump station conveys wastewater from the collection system to the WWTF located along Georgiana Slough southeast of the city. Influent from the collection system first runs through a 60-inch grinder manhole near the entry of the pump station, then into a 7,759-gallon wet well containing two chopper pumps which then pump 1,100 gallons per minute (gpm) to the WWTF. However, several nonfunctional or missing components in the pump station contribute heavily to sludge accumulation in the WWTF ponds and also require 24-hour staffing during rainstorms and high flow events. During these events, the city must sometimes rent pumps in order to keep up with flows and reduce the likelihood of sanitary sewer overflows. To accommodate future development, the pump station and pumps may need to be upsized in addition to other needed improvements.

From the pump station, wastewater is sent to the WWTF via approximately 4,300 linear feet of eight- to ten-inch force main. The force main was replaced and upsized in 2010, which provided additional capacity but reduced velocities below the standard of three feet per second and, consequently, allows flows to back up into the force main during high flow events.

The City of Isleton's WWTF utilizes a lagoon treatment system consisting of one primary seven-acre aeration pond equipped with four aerators and two facultative stabilization ponds which are operated in series. After treatment, effluent is gravity-fed to six disposal ponds that span more than 24 acres and use percolation and evaporation for final disposal. One of the treatment ponds has ongoing sludge accumulation and dead zone issues and does not currently operate as designed. The pond also does not meet the two-foot freeboard requirement, but the other treatment ponds are operating within freeboard and design parameters. During the wet season, the disposal ponds have a lower disposal rate due to reduced percolation from high groundwater and reduced evapotranspiration due to cloudy weather.



**Figure 3: Existing Wastewater Utility Infrastructure and Facilities**

Isleton has consistently struggled with maintaining sufficient capacity at the WWTF during the wet season and spills during extremely wet years. Historically during the wet season, the Isleton WWTF has violated the two-foot freeboard requirement. Both the treatment and storage ponds lack sufficient capacity to contain the permitted flow of treated effluent of 0.43 gpd during a 100-year storm event without spilling or violating the freeboard and, in the past, there are times when the City has spilled into an irrigation ditch that runs along the northern side of the facility. These repeated violations resulted in issuance of the CDO. Loss of pond capacity is primarily due to the settling of the pond berms over time. Capacity is also lost from inflow and infiltration (I&I) of groundwater and stormwater.

Based on previous studies, it is likely that groundwater is sometimes flowing into the percolation ponds rather than treated effluent percolating out. As such, the disposal ponds are the main limiting



factor for achieving the maximum permitted flow. I&I is also a primary issue in other components of the wastewater system. The gravity sewer mains and manholes in the collection system are the primary source of I&I, overall. Many pipes have leaky joints that allow groundwater to enter the system. In addition, catch basins, uncovered cleanouts, and down spout connections are a direct connection for inflow of stormwater. Mitigating excessive I&I will be key in providing wastewater collection and treatment capacities adequate to accommodate future growth.

### 3.3 Stormwater Drainage

Storm water drainage consists of a traditional above ground curb and gutter collection system and some underground facilities. The conveyance of stormwater within the urbanized portions of the City of Isleton is predominantly overland flow; although, much of the city street system has curb and gutter to direct flow. Some areas in the city also have drop inlets and underground storm drains for conveyance of runoff. Where curb, gutter, and drop inlets are missing, drainage occurs by gravity flow to the lowest points along the street system, roadside ditches, and adjacent parcels. Ultimate disposal of stormwater is to major drainage ditches south of town.

The roadside ditches in Isleton are managed by Reclamation District 407 (RD 407), which has jurisdiction over Andrus Island and the City of Isleton. The Brannan-Andrus Levee Maintenance District oversees multiple reclamation districts including RD 407. Most of the roadside ditches in Isleton run along the southern part of town, near 6th Street and Jackson Boulevard. The water travels through a series of ditches that lead to a pump station on the Georgiana Slough.

The reclamation districts (RD) surrounding the City of Isleton include RD2067, RD317 and RD407, as displayed in Figure 2-1. These agencies operate the drainage pump facilities and oversee maintenance of the primary drainage canals around Isleton. The Brannan-Andrus Levee Maintenance District (BALMD) is responsible for oversight and maintenance of the levees protecting the three RD areas. RD407 within BALMD oversees dewatering for land areas encompassed by the Sacramento River, RD556 cross levee, Georgiana Slough, Terminus Road, and the historical meander line of Jackson Slough.

### 3.4 Broadband Internet

In Isleton, only 60 percent of households are estimated to have an internet subscription, compared to 85 percent of households in California. (ACS, 2014-2018) There are very few areas of Isleton that have adequate broadband at the 2020 benchmark speeds of 100 megabits per second (Mbps) download. According to the Federal Communication Commission's (FCC) 2022 coverage mapping, Isleton's downtown core has full fixed broadband coverage at 25 Mbps download or greater. (FCC, 2022)

Households and businesses have no fiber optic options, only one (and in some cases no) digital subscriber line (DSL) provider option, limited fixed wireless options which are entirely dependent on place of residence or business, and two satellite options. Broadband quality and access challenges are exacerbated by limited provider investment and physical terrain barriers (Delta Protection Commission; Valley Vision, 2019)

### 3.5 Cellular Telephone and Data Service

Cellular voice and data service coverage in Isleton is provided by three of the nation's four largest mobile wireless carriers: Verizon, T-Mobile, and AT&T Mobility. According to the FCC's 2021 coverage mapping, all three providers have voice coverage throughout the city limits, where customers can expect to make and receive mobile voice calls and send and receive text messages over the network. For data service, only Verizon and AT&T have full fourth generation (4G) long-term evolution (LTE) coverage in Isleton while T-Mobile's data coverage is lacking in several areas, including the downtown core (see Figure 4). (FCC, 2021) 4G LTE data coverage areas represent where customers can expect to receive 4G LTE broadband internet service on their data-capable cellular device at a

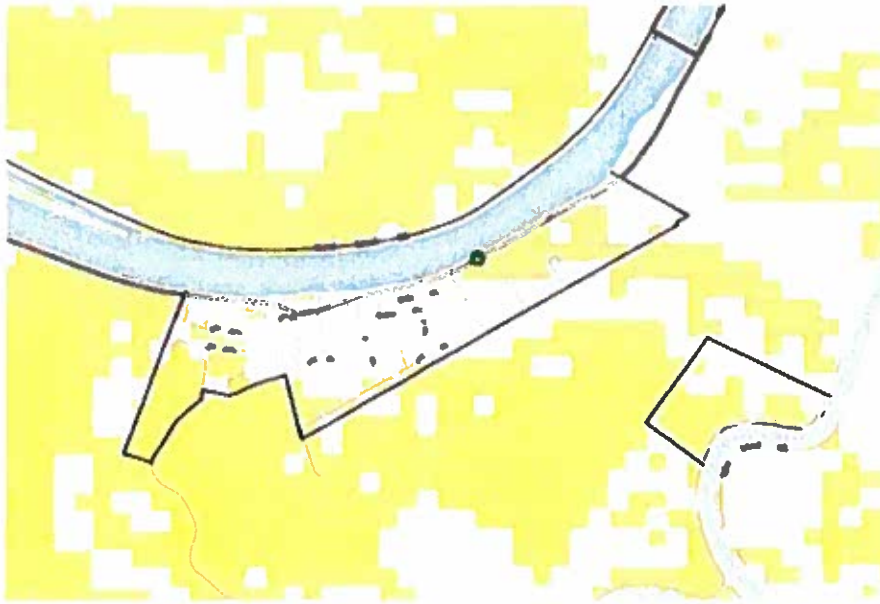


Figure 4: T-Mobile Cellular Data Coverage (4G LTE)





minimum user download speed of five megabits per second (5 Mbps) and a user upload speed of one megabit per second (1 Mbps).

### 3.6 Electric and Natural Gas Service

Pacific Gas and Electric (PG&E) provides electricity and natural gas to city residents and commercial and industrial customers. All areas within the city limits have access to electricity and natural gas service.

### 3.7 Solid Waste Collection

The City of Isleton contracts with Cal-Waste Recovery Systems for once-a-week residential and commercial garbage, garden and yard waste, and recycling services. Cal-Waste Recovery Systems schedules a citywide bulk waste pick up for all Isleton residents once a year.

## Section 4. Changes to Public Utilities

This section details the changes between the 2000 General Plan and 2040 General Plan affecting existing and future public utilities.

### 4.1 Changes to Land Use

The need for new, or improvements to existing, public utilities relates directly to planned land uses. The General Plan Land Use Diagram, part of the Land Use Element, is much like the zoning map. The Land Use Diagram defines desired growth in the City of Isleton by outlining allowable types of development, and it determines which land uses will be allowed on properties within the city limits and at what densities or intensities. The General Plan is broad in nature, while the Zoning Code implements the General Plan through detailed development regulations, such as specific types of uses and building standards.

The 2000 General Plan Land Use Diagram (Figure 4-1) provides three basic land use categories of residential density including low, medium, and high; two land use categories for commercial land use including a mixed use and commercial; one category for industrial use; one category for public or semi-public use; and one category for conservation or open space use. The proposed 2040 General Plan Land Use Diagram includes new land use designations with associated density and lot area requirements, as displayed in Figure 4-2, and also reflects proposed changes in underlying land uses since the adoption of the 2000 General Plan.

The 2040 General Plan Land Use Diagram includes the following land use categories:

- **Six residential categories of very low density, low density, medium density, high density, village mixed use, and downtown mixed use;**
- **Three commercial categories of village mixed use, downtown mixed use, and commercial;**
- **One industrial category;**
- **One public or semi-public category;**
- **One parks and open space category.**





# CITY OF ISLETON GENERAL PLAN 2000

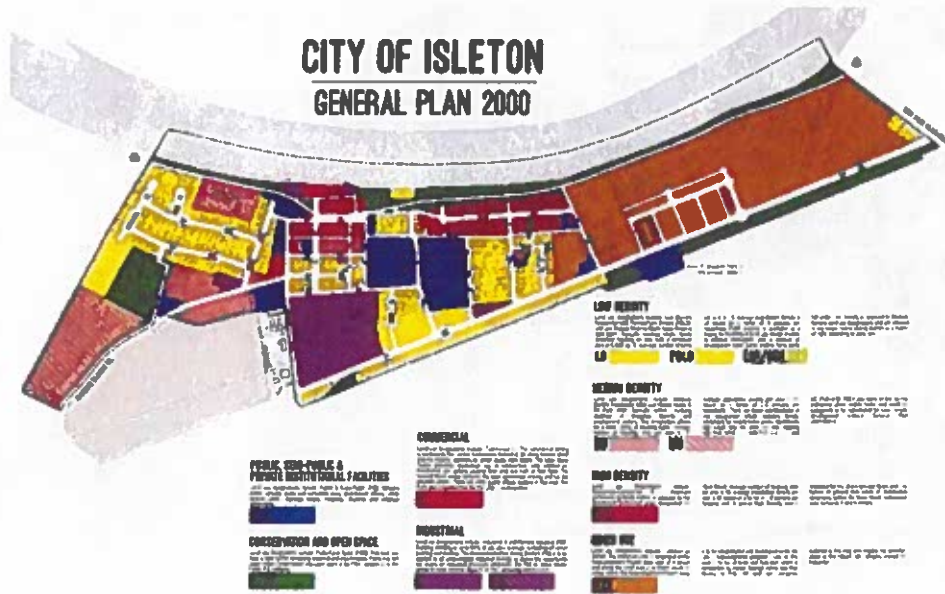


Figure 6-1 2000 General Plan Land Use Diagram

# CITY OF ISLETON

## 2040 GENERAL PLAN

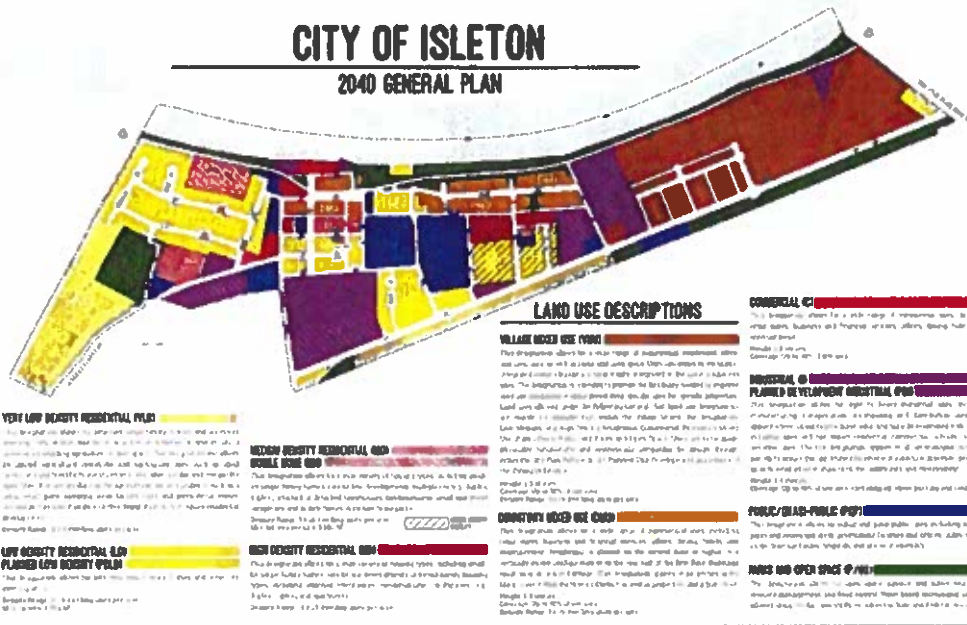


Figure 4-3 2040 General Plan Land Use Diagram



### 4.1.1 2040 Land Use Build Out Analysis

A build out analysis estimates the amount of future development that can occur if vacant parcels are developed to their potential under current development regulations. A residential and commercial capacity analysis are components of the build out analysis that estimate how many people the city can anticipate to grow by if vacant residentially designated parcels get built out and how much square footage of commercial space the city can anticipate if commercially designated land gets built out. An in-depth build out analysis for the 2040 General Plan is included in the Land Use Element and associated Land Use Background Report.

Land use build out was analyzed for the 2040 General Plan based on the 2040 Land Use Diagram, displayed in Figure 4-2. The results of the build out analysis are capacity tables for both residential and commercial land uses, which are included in the Land Use Background Report.

The 2040 General Plan residential buildout capacity for the City of Isleton includes two parcels designated low-density residential, one parcel designated planned low-density residential, six parcels designated very low-density residential, five parcels designated medium-density residential, and 82 parcels designated village mixed use. High-density land use designations were not considered because there are currently no vacant parcels in the city within a high-density land use classification. For the 96 vacant parcels analyzed, a total residential build out capacity of 362 to 480 dwelling units is estimated, translating to 925 to 1,224 persons. It is important to note that the maximum residential build out for the 2040 General Plan has less population capacity than the 2000 General Plan build out analysis due to changes in land use classifications for several properties, including from medium to low-density residential in one area medium-density residential to planned development industrial for another.

The commercial capacity for the city includes 82 parcels that are designated village mixed use and four parcels that are designated planned industrial. For the 86 vacant parcels analyzed, a total commercial build out capacity of 3,743,970 square feet is estimated.

The updated build out analysis for the 2040 General Plan has implications for multiple elements of the General Plan, including the Public Utilities Element. The analysis for future public utilities will consider changes in land use classifications as presented on the 2040 Land Use Diagram and how the distribution of those land uses impact infrastructure and facility needs.

## 4.2 Wastewater Disposal

The city's wastewater collection, treatment, and disposal systems will need to be improved and expanded to accommodate future build out conditions under additional pressures from climate change, including hardening the systems against future flood events. Expansion of Isleton's

wastewater collection system may require a secondary level of treatment with discharge to areas approved by the Central Valley Regional Water Quality Control Board. Based on recommendations in the 2023 Wastewater Master Plan, there are several capital improvement projects that would significantly improve functionality and capacity of the system. Such wastewater system upgrades might include:

- **Collection System Improvements:** Remove illicit connections; abandon and replace older, damaged pipes and manholes and those exhibiting excessive I&I; and stormwater drainage system improvements to reduce direct connections to the wastewater system.
- **Headworks and Pump Station Improvements:** Screen out large solids and reduce solids reaching the WWTF to maintain treatment and disposal capacity in the ponds; install security fencing and video surveillance in the corporation yard to reduce theft and vandalism; evaluate the pump station wet well for storage capacity, pump capacity, and time to overflow; reinstate the existing comminutor, Parshall flume, and bar screen or install new appurtenances in the pump station; and procure emergency backup resources such as a generator and portable trailer mounted pump.
- **WWTF Improvements:** Rebuild treatment and disposal pond berms to their design elevations and reinforce with erosion and pest controls; replace flow monitoring equipment and NEMA control panel; upgrade sensors, controls, telemetry, and backup generator to provide operational efficiencies and reliability; and install new aerators, evaporators, and blower.

Long-term planning activities, potentially including regionalization and land application, are also recommended in the 2023 Wastewater Master Plan in order to serve the City of Isleton's distant future needs, although, a feasibility study would need to be completed to determine which alternative is most feasible and appropriate. Regionalization to connect Isleton's wastewater system with the nearby City of Rio Vista's could benefit the city, neighboring parcels outside city limits, and potentially the surrounding delta ecosystem. This project would likely include a force main, pump station, and piping under the Sacramento River to transport effluent between Isleton and Rio Vista. Land application to acquire additional acreage around the WWTF could benefit the city by adding more capacity to hold treated effluent during the wet season.

### 4.3 Stormwater Drainage

Because the city's stormwater drainage and wastewater collection systems are connected, periods of heavy rainfall have the potential to overwhelm the WWTF and lead to overloading the system. To address ongoing problems with stormwater inflow and infiltration into the wastewater collection system, several improvements to the drainage system are recommended in the 2023 Wastewater Master Plan. Such improvements include removing illicit connections; abandoning and replacing older, damaged pipes and manholes and those exhibiting excessive inflow and infiltration, and



reducing direct connections between the drainage and wastewater systems. In addition, stormwater drainage and runoff resulting from future development and redevelopment should be managed to minimize impacts on the WWTF



# PUBLIC UTILITIES



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## SECTION 2. Public Utilities Element

The Public Utilities Element focuses on the movement of energy, water, sewage, and communications through Isleton. Other public facilities and buildings are discussed in the Land Use Element. This element sets forth specific goals, policies, and implementation actions to guide the development and maintenance of infrastructure for the city through 2040. Based on guidelines in the California Government Code, this Public Utilities Element highlights Isleton's existing utilities infrastructure and facilities as well as planned improvements.

### 2.1. Why is Planning for Public Utilities Important?

This element balances the need to provide efficient and reliable public utility services and infrastructure with planned growth. Public utility systems should accommodate planned growth and expected infill development while minimizing environmental degradation and complementing land use plans. Most importantly, the Public Utilities Element will ensure new growth does not overburden current infrastructure without planned improvements.



**Figure 2-1: Example Infrastructure Repair Work in Isleton**

*Source: Public Domain*

### 2.2. Statutory Requirements

State law requires a General Plan to include an element that identifies the general locations and extents of existing and proposed local public utilities and facilities. (Cal. Gov. Code § 65302(b)(1)) Relevant public utilities include water, wastewater, stormwater, telecommunications and broadband, electricity and electric vehicle charging stations, and natural gas. State law also requires that general plans include “the proposed general distribution and general location and extent of the uses of the land for... solid and liquid waste disposal facilities.” (Cal. Gov. Code §65302(a))

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## **2.3. Existing and Future Public Utilities**

This element, along with the associated Public Utilities Background Report, highlights the locations of existing public utilities infrastructure and facilities, and future improvements to utilities, to support planned growth in the City of Isleton. Public utilities in Isleton cover water distribution, wastewater collection, electric and natural gas service, solid waste collection, and internet, cellular, and cable television infrastructure.

The City of Isleton coordinates with utility providers during project entitlement and building permit process to assure the provision of these utilities. Dry utilities continue to be an access issue throughout Isleton, especially broadband internet. Another barrier to growth is Isleton continues to lack reliable cellular signal in much of the city. Like broadband, access to cellular data service is critical in today's world for connection to business, government, health, safety, and educational resources. Cellular service is provided by various companies; however, cellular signals are poor throughout most of the city.

### **2.3.1. Water Distribution**

A private water company, California American Water, supplies domestic water to the City of Isleton. The Isleton water system is served by three wells within the Isleton service area that pump groundwater from aquifers. The water system consists of pumps, water treatment equipment, water storage, distribution piping, fire hydrants, valves, and other equipment. California American Water uses drinking water treatment technologies to remove naturally occurring arsenic and manganese from the pumped groundwater. The water is chlorinated to ensure that it meets bacteriological quality standards and is distributed for residential and commercial use.

Residents report water pressure issues that are also a concern for firefighting capabilities. However, California American Water reports adequate water supplies to meet Isleton's future growth needs and the City continues to work with California American Water on pressure issues.

### **2.3.2. Wastewater Collection**

The City of Isleton provides sewage collection, treatment, and disposal for residential, commercial, and industrial customers. The city owns, maintains, and operates all wastewater facilities connected to the collection and treatment system within the service area. New private sewage disposal systems, septic tanks, and septic systems are prohibited within the city. The city also has a contractual agreement to accept wastewater from the Oxbow Marina Recreational Facility.

The Oxbow Marina Recreational Facility consists of a boat holding tank pump-out station, public restrooms, club house, office, and 95 mobile homes. Wastewater is pumped to the City of Isleton Wastewater Treatment Facility (WWTF) via a force main which runs along the toe of the Georgiana

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Slough levee. The force main enters the plant near the headworks, is metered, and then discharged into the primary aeration pond. Operation and maintenance of the Oxbow Marina Recreational Facility collection system, lift station, and force main is the responsibility of Oxbow Marina.



**Figure 2-2: Oxbow Marina Recreational Facility**

*Source: Oxbow Marina Facebook page*

As detailed in the Public Utilities Background Report, the City of Isleton's wastewater collection system consists of approximately 21,107 linear feet of gravity-fed sewer mains and approximately 81 manholes. The system generally flows north to south and then east to west. Approximately half of the sewer pipes have been replaced or rehabilitated since construction of the original system in the early 1900s and,

overall, the pipes in the collection system have adequate capacities under various flow conditions to support existing and future development in the city.

The city's pump station conveys wastewater from the collection system to the WWTF located along Georgiana Slough southeast of the city. Wastewater enters the pump station through a grinder manhole and is then temporarily held in a wet well containing two chopper pumps before being sent to the WWTF via a force main. However, several nonfunctional or missing components in the pump station contribute heavily to sludge accumulation in the WWTF ponds and also require 24-hour staffing during rainstorms and high flow events. To accommodate future development, the pump station and pumps may need to be upsized in addition to other needed improvements.

The City of Isleton's WWTF utilizes a lagoon treatment system consisting of one primary aeration pond equipped with four aerators and two facultative stabilization ponds which are operated in series. After treatment, wastewater is gravity-fed to six disposal ponds that span more than 24 acres and use percolation and evaporation for final disposal. One of the treatment ponds has ongoing issues and does not currently operate as designed, but the other treatment ponds are operating within design parameters. During the wet season, the disposal ponds have a lower disposal rate due to reduced percolation from high groundwater and reduced evapotranspiration due to cloudy weather.

Isleton has consistently struggled with maintaining sufficient capacity at the WWTF during the wet season, especially during extremely wet years. Both the treatment and storage ponds lack sufficient capacity to contain the permitted flow of treated effluent and a 100-year storm event. Loss of pond

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capacity is primarily due to the settling of the pond berms over time. Capacity is also lost from inflow and infiltration of groundwater and stormwater.

The city's wastewater collection, treatment, and disposal systems will need to be improved and expanded to accommodate future build out conditions under additional pressures from climate change, including hardening the systems against future flood events. Expansion of Isleton's wastewater collection system may require a secondary level of treatment with discharge to areas approved by the Central Valley Regional Water Quality Control Board. Based on recommendations in the 2023 Wastewater Master Plan, there are several capital improvement projects that would significantly improve functionality and capacity of the system. Such wastewater system upgrades might include collection system improvements to reduce stormwater inflow and infiltration, pump station improvements to reduce solids reaching the WWTF to better maintain capacity, and WWTF improvements to rebuild and reinforce the lagoon system. Long-term planning activities, potentially including regionalization and land application, are also recommended in the 2023 Wastewater Master Plan in order to serve the City of Isleton's distant future needs. Additional details about recommended improvements are provided in the Public Utilities Background Report and Wastewater Master Plan.

### **2.3.3. Stormwater Drainage**

The city's stormwater drainage infrastructure consists of a traditional above ground curb and gutter collection system and limited underground facilities. Much of the city street system has curb and gutter, as well as some drop inlets, which convey stormwater to major drainage ditches south of town. Where curb, gutter, and drop inlets are missing, drainage occurs by gravity flow to the lowest points along the street system and adjacent parcels. To address ongoing problems with stormwater inflow and infiltration into the wastewater collection system, several improvements to the drainage system are recommended in the 2023 Wastewater Master Plan. Such improvements include removing illicit connections; abandoning and replacing older, damaged pipes and manholes and those exhibiting excessive inflow and infiltration; and reducing direct connections between the drainage and wastewater systems. See the Public Utilities Background Report for additional details about recommended improvements.

Individual reclamation districts (RD) that represent the islands of Brannan, Andrus, and Lower Andrus, including districts RD2067, RD317 and RD407, operate the drainage pump facilities and oversee maintenance of the primary drainage canals around Isleton. Oversight and maintenance of the levees protecting the three RD areas are legislatively vested in a single entity known as Brannan-Andrus Levee Maintenance District (BALMD).



### 2.3.4. Broadband Internet

Broadband access is critical in today's world for connection to business, government, health, safety, and educational resources, and the City of Isleton understands the need to provide adequate internet services now more than ever with increasing demand for work-from-home employment. To improve internet access within the community, the City will continue to promote the efficient expansion of broadband infrastructure.

Access to broadband internet networks continues to challenge growth in the city and much of the greater Delta region. Fifty percent of rural housing in California lacks high-speed broadband service at 2020 benchmark speeds of 100 megabits per second (Mbps) download. In Isleton, only 60 percent of households are estimated to have an internet subscription, compared to 85 percent of households in California. (ACS, 2014-2018) There are very few areas of Isleton that have adequate broadband at the 100 Mbps level, and according to the Federal Communication Commission's (FCC) 2022 coverage mapping, the downtown core has full fixed broadband coverage at 25 Mbps download or greater. (FCC, 2022)

Households and businesses have no fiber optic options, only one (and in some cases no) digital subscriber line (DSL) provider option, limited fixed wireless options which are entirely dependent on place of residence or business, and two satellite options. Broadband quality and access challenges are exacerbated by limited provider investment and physical terrain barriers. (Delta Protection Commission; Valley Vision, 2019) The Delta Protection Commission has identified broadband access as a critical issue in the Delta and commissioned a 2019 study by Valley Vision, called Connecting the Delta: Broadband Action Plan, which identifies recommended actions to improve broadband adoption and support. The primary actions explored in greater detail in the plan are:

- Establish broadband-focused leadership for the Delta legacy communities;
- Piggyback on all infrastructure opportunities, such as CalTrans "dig once" policies and further local "dig once, climb once" policies; and
- Secure funding and resources to plan and implement projects, including public-private partnership models.

Much of the city is eligible for California Advanced Services Fund (CASE) infrastructure grants to "telephone corporations" to bridge the "digital divide" in unserved and underserved areas in the state, as shown in Figure 2-3. Also, as outlined in the CIP, the City aims to one day provide free and readily available wireless internet in the downtown area to promote foot traffic and support local shops and stores.

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### 2.3.5. Cellular Telephone and Data Service

Cellular telephone and data service is provided by various companies to the City of Isleton; however, cellular signals remain poor and unreliable in much of the city, creating a barrier to growth. Like broadband internet, access to cellular service is critical in today's world for connection to business, government, health, safety, and educational resources.

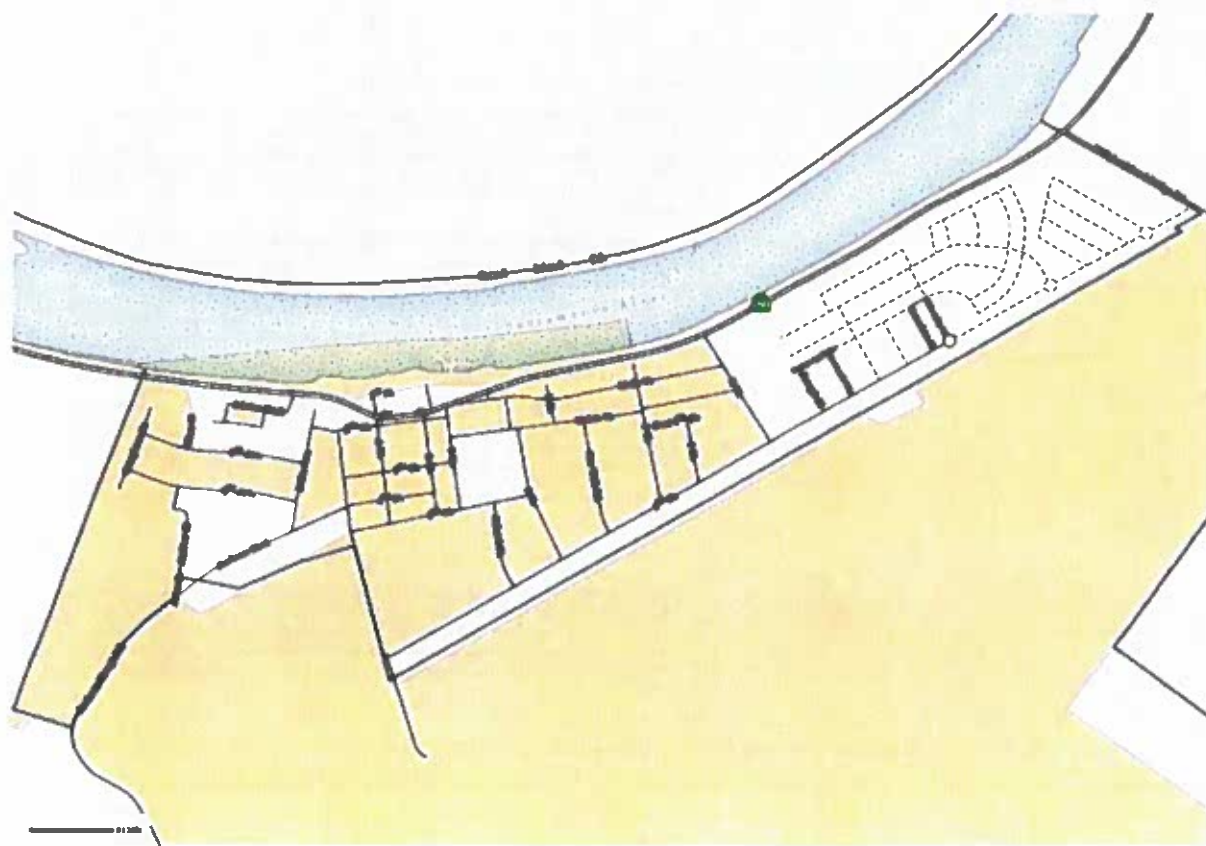
Cellular voice and data service coverage in Isleton is provided by three of the nation's four largest mobile wireless carriers: Verizon, T-Mobile, and AT&T Mobility. According to the FCC's 2021 coverage mapping, all three providers have voice coverage throughout the city limits, where customers can expect to make and receive mobile voice calls and send and receive text messages over the network. For data service, only Verizon and AT&T had full fourth generation (4G) long-term evolution (LTE) coverage in Isleton while T-Mobile's data coverage is lacking in several areas, including the downtown core. (FCC, 2021) 4G LTE data coverage areas represent where customers can expect to receive 4G LTE broadband internet service on their data-capable cellular device at a minimum user download speed of five megabits per second (5 Mbps) and a user upload speed of one megabit per second (1 Mbps).

As fifth generation (5G) wireless communication is rolled out across the nation, providing transformational speeds, low latency, and massive capacity well beyond that of 4G LTE, it will create new possibilities in mobile data that could transform Isleton. 5G is expected to revolutionize industries, make businesses more efficient, and provide immediate impact for customers by giving them access to more information faster than ever. 5G could also help enable smarter transportation systems, support artificial intelligence (AI) in public safety, and allow for expanded access and new experiences in education among other anticipated benefits.

In planning for Isleton's future growth and economic development, the City will pursue funding opportunities for infrastructure that will provide reliable cellular 4G LTE or better data coverage throughout the city.

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CAST Infrastructure Display Area



**CITY OF ISLETON**  
**GENERAL PLAN 2040**  
**CIRCULATION ELEMENT**

**California Advanced Systems Fund**

Figure 2-3: California Advanced Systems Fund

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### 2.3.6. Electric and Natural Gas Service

Pacific Gas and Electric (PG&E) provides electricity and natural gas to city residents and commercial and Industrial customers, and all areas within the city limits have access to electricity and natural gas service. PG&E offers a number of programs meant to incentivize energy conservation along with residential rebates, including rebates for the installation of certain energy saving products, free weatherization measures, appliance efficiency upgrades, and reduced rates for income-qualified households.

To promote energy conservation, the City of Isleton has adopted the most recent version of the California Building Code, which includes a section on green building regulations, referred to as the 2019 CALGreen Building Standards Code. CALGreen is the nation's first mandatory state-wide green building code, intended to encourage more sustainable and environmentally-friendly building practices, require low pollution emitting substances that can cause harm to the environment, conserve natural resources, and promote the use of energy-efficient materials and equipment.

### 2.3.7. Solid Waste Collection

The City of Isleton contracts with Cal-Waste Recovery Systems for once-a-week residential and commercial garbage, garden and yard waste, and recycling services. Cal-Waste Recovery Systems schedules a citywide bulk waste pick up for all Isleton residents once a year. Solid waste collection as well as hazardous waste management are discussed in more detail in the Safety Element.

There are no landfills or other solid waste collection or processing facilities located within the city limits.

## 2.4. Relationship to Land Use Element

The need for new or improvements to public utilities relates directly to planned land uses; therefore, the city's Public Utilities Element and the goals, policies, and actions herein are correlated with the Land Use Element, per Cal Gov Code § 65302(b)(1). As such, the City will size and locate utility infrastructure and service facilities to accommodate planned growth in Isleton, to maximize efficiency and minimize impacts on the community, and to reflect resource constraints and other broader considerations.

## 2.5. Circulation Goals, Policies, and Implementation Actions

### **GOAL PU-1 Maintain economic health and viability while making improvements to public utilities infrastructure and facilities.**

<b>POLICY-PU-1.1</b>	Promote the efficient expansion of broadband and cellular infrastructure to provide high-speed broadband internet service to residents and businesses and to promote tourism. <i>(Source: New)</i>
• <b>Action-PU-1.1.1</b>	Seek funding for broadband infrastructure improvements through California Advanced Services Fund (CASF) and other infrastructure grants to provide high-speed internet to the community's residents and businesses with the goal of download speeds of at least 100 Mbps. <i>(Source: New)</i>
• <b>Action-PU-1.1.2</b>	Identify opportunities to provide free and readily available wireless internet in the downtown area to promote foot traffic and support local shops and stores. <i>(Source: New)</i>
• <b>Action-PU-1.1.3</b>	Pursue funding for infrastructure that will provide cellular 4G LTE or better data coverage throughout the city. <i>(Source: New)</i>
<b>POLICY-PU-1.2</b>	In coordination with other utility providers, maintain and upgrade sewer, water, and electrical utilities within the city to reduce operational costs, modernize services, increase efficiency, and accommodate appropriate future growth. <i>(Source: New)</i>
• <b>Action-PU-1.2.1</b>	In coordination with other utility providers, inventory, assess, and digitally map existing utilities within and around the city and identify needed improvements. <i>(Source: New)</i>
• <b>Action-PU-1.2.2</b>	Generate a database of upcoming public infrastructure projects (e.g., sewer, road paving) in public rights-of-way, including location, routes, and estimated timelines, and coordinate infrastructure improvements whenever possible. <i>(Source: New)</i>
• <b>Action-PU-1.2.3</b>	Ensure new development pays its fair share of the costs for new or improvements to utilities infrastructure and facilities based on anticipated impacts, including increased water supply,

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pressure, or flow demand for fire protection and increased sewage disposal need. *(Source: New)*

- **Action-PU-1.2.4** Plan for and construct improvements to the wastewater collection and treatment system, as necessary, to reduce inflow and infiltration of stormwater and to prevent soil and groundwater contamination. Design system improvements to withstand future flood conditions and sea-level rise while also efficiently accommodating anticipated growth. *(Source: New)*
  - **Action-PU-1.2.5** Update the municipal code to encourage renewable energy systems, where appropriate, and collaborate with the electric utility provider to reduce barriers and increase incentives for residential- and business-scale projects. *(Source: New)*
  - **Action-PU-1.2.6** Work with the water utility provider to encourage water conservation within the community and repair and upgrade infrastructure for efficient delivery, as necessary. *(Source: New)*
  - **Action-PU-1.2.7** The City, in coordination with the local water provider, shall deliver clean water to the community and make improvements, including to taste, odor, color, and quality. *(Source: 2000 General Plan, modified)*
  - **Action-PU-1.2.8** The City, in coordination with the local water provider, shall maintain pressurized water for adequate fire suppression at all times. *(Source: 2000 General Plan, modified)*
  - **Action-PU-1.2.9** Periodically conduct Municipal Service Reviews to evaluate utility expansions to support future growth. *(Source: New)*
  - **Action-PU-1.2.10** Seek funding to support wastewater collection and disposal system capital improvement projects to improve capacity and functionality, including those recommended in the Wastewater Master Plan. Prioritize funding to implement improvements that reduce stormwater inflow and infiltration and increase system capacities. *(Source: New)*
  - **Action-PU-1.2.11** Investigate alternatives for long-term wastewater management planning, potentially including regionalization and land application as recommended in the Wastewater Master Plan. *(Source: New)*
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