City of Porterville

2020 URBAN WATER MANAGEMENT PLAN

DRAFT FINAL | January 2022

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Anthony M. Cemo,
January 26, 2022,
State of California, PE 87929.

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Abbreviations

°F	degrees Fahrenheit
AB	State Assembly Bill
ac-ft	acre-feet
ADMMF	average day maximum month flow
AFY	acre-feet per year
AWIA	America's Water Infrastructure Act of 2018
AWWA	American Water Works Association
BMP	Best Management Practices
Carollo	Carollo Engineers, Inc.
CCR	Annual Consumer Confidence Report
CD	compact disc
CII	commercial, industrial, and institutional
CIMIS	California Irrigation Management Information System
CIP	Capital Improvement Plan
City	City of Porterville
CUWCC	California Urban Water Conservation Council
CV	Central Valley
CVP	Central Valley Project
CWC	California Water Code
DAC	disadvantage communities
DAFT	dissolved air flotation thickeners
DMM	demand management measures
DPR	direct potable reuse
DRA	Drought Risk Assessment
DWR	California Department of Water Resources
ERP	Emergency Response Plan
ETGSP	Eastern Tule Groundwater Sustainability Plan
ETo	evapotranspiration
FKC	Friant-Kern Canal
gpcd	gallons per capita day
GSA	Eastern Tule Groundwater Sustainability Agency
IMP	Integrated Master Plan
in	inch
MCL	maximum contaminant level
MDD	maximum day demand
MFR	multi-family residential

MG	million gallons
mg/L	milligrams per liter
mgd	million gallons per day
MHI	median household income
MJLHMP	Multi-Jurisdictional Local Hazard Mitigation Plan
MOU	Memorandum of Understanding
PID	Porterville Irrigation District
PVPUD	Porter Vista Public Utilities District
RRA	risk and resilience assessment
RUWMP	Regional Urban Water Management Plan
RWFS	Recycled Water Feasibility Study
SB	Senate Bill
SCC	DWR Success Lake
SFR	single-family residential
SGMA	Sustainable Groundwater Management Act
SID	Saucelito Irrigation District
TPDID	Tea Pot Dome Irrigation District
UDB	urban development boundary
USBR	United States Bureau of Reclamation
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
UWMPA	Urban Water Management Planning Act
WSCP	water shortage contingency plan
WUE	Water Use and Efficiency
WWTF	wastewater treatment facility

Chapter 1

INTRODUCTION AND LAY DESCRIPTION

1.1 Lay Description

The City of Porterville (City) 2020 Urban Water Management Plan (UWMP) provides the City with a reliable water supply management plan to describe their past, present, and future water system supply, and demand performance. The 2020 UWMP presents a thorough understanding of the City's existing system demand and supply sources and includes baseline supply and demand conditions to better prepare the City to strategically manage future environmental challenges. These challenges can include, but certainly are not limited to climate change, decrease in water supplies, natural hazards, and water quality variability. This plan also considers future planning preparation for changes in land-use, population growth, infrastructure developments, and government regulations. This document serves to be a general synopsis of the City's water system and supply sources and to consider its system characteristics given both environmental variability and the ever-changing dynamic of the City.

1.2 Background and Purpose

The California Water Code (CWC) requires urban water suppliers within the state to prepare and adopt UWMPs for submission to the California Department of Water Resources (DWR). The UWMP, which must be filed every five years, must satisfy the requirements of the Urban Water Management Planning Act (UWMPA) of 1983, including amendments that have been made to the Act. The UWMPA requires urban water suppliers servicing 3,000 or more connections, or supplying more than 3,000 acre-feet (ac-ft) of water annually, to prepare a UWMP.

The purpose of the UWMP is to maintain efficient use of urban water supplies, continue to promote conservation programs and policies, ensure that sufficient water supplies are available for future beneficial use, and provide a mechanism for response during water drought conditions. This document, which was prepared in compliance with the CWC, and as set forth in the 2020 Urban Water Management Plan Guidebook for Urban Water Suppliers (March 2021) established by the DWR, constitutes the City 2020 UWMP.

This 2020 UWMP was prepared in compliance with the UWMPA (CWC §10610 et seq.) and the Water Conservation Bill of 2009 (Senate Bill [SB] X7-7) by Carollo Engineers, Inc. (Carollo). Contact information for the City and Carollo Engineers is included in the Contact Sheet provided at the beginning of this document.

The City recognizes the importance of maintaining a high-quality reliable water supply. Although water is a renewable resource, it is limited. A long-term reliable supply of water is essential to protect the local and state economy. The main focus for the City is to provide high quality water, maximize the efficient use of water, and promote conservation.

1.2.1 Previous Urban Water Management Plan

The City previously prepared an UWMP in 2015, which was approved and adopted on February 20, 2018. Following adoption, the 2015 UWMP was submitted to and formally approved by the DWR. The 2020 UWMP report serves as an update to the 2015 UWMP and pulls extensively from that report. References used in the writing of this report as well as the 2015 UWMP can be found in Appendix C.

1.3 Urban Water Management Planning and the California Water Code

The CWC sections applicable to UWMPs are summarized in the sections below.

1.3.1 Urban Water Management Planning Act

In 1983, State Assembly Bill (AB) 797 modified the CWC Division 6 by creating the UWMPA. Several amendments to the original UWMPA, which were introduced since 1983, have increased the data requirements and planning elements to be included in the UWMPs.

Initial amendments to the UWMPA required that total projected water use be compared to water supply sources over the next 20 years, in 5-year increments. DWR guidelines also suggest projecting through a 25-year planning horizon to maintain a 20-year timeframe until the next UWMP update has been completed.

Other amendments require that UWMPs include provisions for recycled water use, demand management measures (DMMs), and a water shortage contingency plan (WSCP). The UWMPA requires a WSCP which meets the specifications set forth therein. Recycled water was added in the reporting requirements for water usage and figures prominently in the requirements for evaluation of alternative water supplies when future projections predict the need for additional water supplies. Each urban water purveyor must coordinate the preparation of the WSCP with other urban water purveyors in the area, to the extent practicable. Water suppliers must also describe their water DMMs that are being implemented or are scheduled for implementation.

In addition to the UWMPA and its amendments, there are several other regulations that are related to the content of the UWMP. In summary, the key relevant regulations are:

- AB 1420: Requires implementation of DMMs/Best Management Practices (BMP) and meeting the 20-by-2020 targets to qualify for water management grants or loans.
- AB 1420: Requires a plan to quantify and report on distribution system water loss.
- AB 1420: Provides for water use projections to display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans, when that information is available and applicable to an urban water supplier.
- AB 1465: Requires water suppliers to describe opportunities related to recycled water use and stormwater recapture to offset potable water use.
- Amendments SB 610 (Costa, 2001) and AB 901 (Daucher, 2001): Require counties and cities to consider information relating to the availability of water to supply new large developments by mandating the preparation of further water supply planning (Daucher) and Water Supply Assessments (Costa).
- SB 1087: Requires water suppliers to report single-family residential (SFR) and multi-family residential (MFR) projected water use for lower income areas separately.

- Amendment SB 318 (Alpert, 2004): Requires the UWMP to describe the opportunities for development of desalinated water, including but not limited to, ocean water, brackish water, and groundwater, as long-term supply.
- AB 105 (Wiggins, 2004): Requires urban water suppliers to submit their UWMPs to the California State Library.
- SB X7-7: Requires development and use of new methodologies for reporting population growth estimates, base per capita use, and water conservation. An agency can choose from four methods to establish their interim (2015) and year 2020 water conservation targets.
- AB 2067: Requires water suppliers to provide narratives of water DMMs.
- SB 1036: Provides for an urban water supplier to include certain energy-related information, including, but not limited to, and estimate of the amount of energy used to extract or divert water supplies.
- AB 2409: Requires urban water suppliers to analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains separately from swimming pools and spas.

1.3.2 New Requirements to the Water Code since the 2015 UWMPs

The major new requirements to the CWC since 2015 UWMPs are summarized in Table 1-1.

Table 1.1 Applicable Changes to the Water Codes Since 2015 UWMPs

Topic	Summary
Five Consecutive Dry-Year Water Reliability Assessment	The Legislature modified the dry-year water reliability planning from a "multiyear" time period to a "drought lasting five consecutive water years" designation.
Drought Risk Assessment	The Drought Risk Assessment (DRA) requires a Supplier to assess water supply reliability over a five-year period from 2021 to 2025 that examines water supplies, water uses, and the resulting water supply reliability under a reasonable prediction for five consecutive dry years.
Seismic Risk	Requires Suppliers to specifically address seismic risk to various water system facilities and to have a mitigation plan.
Water Shortage Contingency Plan	Supplier must provide a standalone document that provides an action plan for a drought or catastrophic water supply shortage. The WSCP includes requirements that are more prescriptive than previous UWMPs.
Groundwater Supplies Coordination	Water Code now requires Suppliers' 2020 UWMPs to be consistent with Groundwater Sustainability Plans, in areas where those plans have been completed by Groundwater Sustainability Agencies.
Lay Description	Suppliers to include a lay description of the fundamental determinations of the UWMP, especially regarding water service reliability, challenges ahead, and strategies for managing reliability risks. This section of the UWMP could be viewed as a go-to synopsis for new staff, new governing members, customers, and the media, and it can ensure a consistent representation of the Supplier's detailed analysis.

1.3.3 Water Conservation Act of 2009 (SB X7-7)

Beginning in 2016, retail water suppliers are required to comply with the Water Conservation Act of 2009 requirements in SB X7-7 in order to be eligible for State water grants or loans. Refer to Chapter 5 for detailed information on SB X7-7.

1.4 Report Organization

This UWMP contains ten chapters, followed by appendices that provide supporting documentation for the information presented in the report. The chapters are briefly described below:

- Chapter 1 – Introduction and Lay Description. This chapter presents a lay description and the purpose of this UWMP stressing the importance and extent of the water management planning efforts.
- Chapter 2 – Plan Preparation. This chapter provides information on the process for developing the UWMP as well as coordination efforts with appropriate local agencies and discusses the measures used to solicit public participation during the development of the UWMP.
- Chapter 3 – System Description. This chapter presents a description of the water purveyor's service area and its characteristics including climate, population, and other demographic factors.
- Chapter 4 – Customer Water Use. This chapter presents a description of the water purveyor's current and projected water uses within the service area in five-year increments.
- Chapter 5 – Conservation Target Compliance. This chapter presents information on the water purveyor's compliance with the 2020 per-capita water conservation mandate. Demonstrate that the 2020 target adopted in the 2015 UWMP was met in 2020. This chapter provides analyses and calculations associated with the water conservation target pursuant to SB X7-7.
- Chapter 6 – System Supplies. This chapter presents a description of the water purveyor's current and projected potable and non-potable water supply sources including information on the usage groundwater and an overview of usage of recycled water. This chapter includes information on the water purveyor's future considerations of a recycled water system.
- Chapter 7 – Water System Reliability. This chapter presents the reliability of the water purveyor's water system. This includes a discussion on future water reliability. In addition, there is an analysis of supply availability in a normal, single dry year and in five consecutive dry years. This chapter also includes the DRA.
- Chapter 8 – Water Shortage Contingency Planning. This chapter includes an urban water shortage contingency analysis that includes stages of action to be undertaken in the event of water supply shortages; prohibitions consumption reduction methods and penalties; actions to be taken during a catastrophic interruption of service; and a mechanism for measuring water use reduction.
- Chapter 9 – Demand Management Measures. This chapter communicates the water purveyor's efforts to promote conservation and to reduce demand. The chapter includes narratives on each DMM.
- Chapter 10 – Plan Adoption, Submittal, and Implementation. This chapter describes the steps taken to adopt, submit, and implement the UWMP and make it publicly available.

Chapter 2
PLAN PREPARATION

This section includes specific information on how the UWMP was developed, including efforts in coordination and outreach.

2.1 Basis for Plan Preparation

CWC 10617 requires that urban water suppliers with 3,000 or more service connections or supplying 3,000 or more ac-ft of water per year prepare an UWMP every five years.

> *10617 "Urban water supplier" means a supplier, either publicly, or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually. An urban water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers. This part applies only to water supplied from public water systems…*

2.1.1 Public Water Systems

> *California Health and Safety Code 116275 (h) "Public Water System" means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.*

To demonstrate the basis of reporting, the Public Water Systems services by the City are listed in Table 2.1. As listed in Table 2.1, the City of Porterville served 1 public water system with a total of 17,063 connections and supplied a total of 3,647 million gallon (MG) (11,192 acre-feet per year [AFY]) in year 2020.

Table 2.1 Retail Only: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
5410010	City of Porterville	17,063	3,647
	Total	**17,063**	**3,647**

2.2 Individual Planning and Compilance

This UWMP reports solely on the City's service area, as shown in Table 2.2. The City has notified and coordinated with appropriate regional agencies and constituents as identified in Table 2.5

Table 2.2 Plan Identification

Select Only One	Type of Plan	Name of RUWMP or Regional Alliance, *if applicable*
☒	Individual UWMP	
	☐ Water Supplier is also a member of RUWMP	
	☐ Water Supplier is also a member of a Regional Alliance	
☐	Regional Urban Water Management Plan (RUWMP)	

2.3 Calendar Year and Units of Measure

> *CWC 1608.20 (a) (1) Urban retail water suppliers…may determine the targets on a fiscal year or calendar year basis.*

The City is reporting on a calendar year basis and therefore, 2020 data includes the months of January to December 2020. Table 2.3 indicates the City type of reporting year, and the units of measure for reporting water volumes throughout the 2020 UWMP.

Table 2.3 Supplier Identification

Type of Supplier (select one or both)	
☐	Supplier is a wholesaler
☒	Supplier is a retailer
Fiscal or Calendar Year (select one)	
☒	UWMP tables are in calendar years
☐	UWMP tables are in fiscal years
Units of Measure Used in UWMP (select from drop down)	
Unit	MG

2.4 Coordination and Outreach

The UWMPA requires that the UWMP identify the water agency's coordination with appropriate nearby agencies. The City coordinated its efforts with relevant agencies and parties to ensure that the data and issues discussed in the plan are presented accurately. These agencies are listed in Table 2.5.

2.4.1 Wholesale and Retail Coordination

Retail agencies that receive a water supply from one or more wholesalers are required to provide wholesalers with projected water demand from that source, in five-year increments for 20 years. The City does not purchase or receive potable water from a wholesaler. Therefore, Table 2.4 is Not applicable.

Table 2.4 Retail: Water Supplier Information Exchange

The retail Supplier has informed the following wholesale supplier(s) of projected water use in accordance with Water Code Section 10631.
Wholesale Water Supplier Name (Add additional rows as needed)
Not Applicable

2.4.2 Coordination with Other Agencies and the Community

> *10620 (d)(2) Each urban water supplier shall coordinate the preparation of its plan with other appropriate agencies in the area including other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.*
>
> *10642. Each urban water supplier shall encourage the active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan…*

The City solicited participation from other agencies, organizations, and the community for the preparation of the 2020 UWMP. Table 2.5 summarizes how the UWMP preparation was coordinated.

Table 2.5 Coordination with Appropriate Agencies

Coordinating Agencies	Notified of UWMP Update	Commented on the Draft	Attended Public Meetings	Was Contacted for Assistance	Was Sent a Copy of the Draft Plan	Was Sent a Notice of Intention to Adopt	Not Involved No Information
Porterville ID	X				X		X
Terra Bella ID	X				X		X
Saucelito ID	X				X		X
Lower Tule ID	X				X		X
Vandalia ID	X				X		X
Porter Vista Public Utilities District	X				X		X
Tea Pot Dome ID	X				X		X
Tulare County	X				X		X
Tule River Association	X				X		X
Eastern Tule GSA	X				X		X

2.4.3 Notice to Cities and Counties

CWC 10621 (b) requires that agencies notify cities and counties to which they serve water that the City's UWMP is being updated and reviewed.

> *10621(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before the public hearing on the plan required by Section 10642, notify a city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.*

The City of Porterville only provides water within their urban development boundary (UDB). Even though the City does not provide water supply to other cities, counties, or districts, outside the water service area the City has provided formal written notification to the list of agencies in Table 2.5 that the City's UWMP was being updated. In accordance with the UWMPA, this notification was provided at least 60 days prior to the public hearing of the plan. Electronic copies of the final UWMP will be provided to the parties notified no later than 30 days after its submission to DWR. Appendix D contains copies of outreach documents.

Notices were published informing interested parties that the draft 2020 UWMP was available for review. Pursuant to California Code Section 6066, a notification of the time and place of the public hearing was published in the local newspaper on February 1st, 2022 and February 8th, 2022. A notice was also posted on City's website. Copies of these notifications are included in Appendix D.

The Final Draft 2020 UWMP was presented to the Porterville City Council as a discussion item on February 15th, 2022 for a public hearing followed by adoption by resolution. This hearing provided an opportunity for the City's customers, residents, and employees to learn and ask questions about the current and future water supply of Porterville. A copy of the associated documentation is included in Appendix B.

Chapter 3

SYSTEM DESCRIPTION

The UWMPA requires that the UWMP include a thorough description of the water system, service area, and various aspects of the area served including climate, population, and other demographic factors.

> *10631. (a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.*

3.1 General Description

The City of Porterville is located in central California on the east side of the San Joaquin Valley. The City is adjacent to the Sequoia National Forest and the Sierra Nevada Foothills in Tulare County. Porterville is approximately 70 miles southeast of the City of Fresno and 50 miles north of the City of Bakersfield. Figure 3-1 depicts the City of Porterville's Regional Location Map. The City is bisected by the Tule River which is sourced by precipitation from the Sierra Nevada Mountains. Operation of the Tule River is regulated by the U.S. Army Corps of Engineers Success Dam located approximately five miles east of the City. During wet years, floodwaters are controlled by Success Dam. The Central Valley Project's (CVP) Friant Kern Canal conveyance facility passes the City on its western boundary. This canal is sourced from the San Joaquin River Watershed and is managed by the Friant Water Authority. The City does not receive surface water from the Canal. The City limits encompass the Porterville Municipal Airport, the Sports Complex, and various agricultural land for treated wastewater management to the southwest of the City proper. The city uses recycled water as a means of treated wastewater effluent disposal for unrestricted agricultural irrigation to select parcels near the airport, see section 6.6 in Chapter 6. This area is also served by the City water system. Additionally, the Porterville Developmental Center or also known as the State Hospital directly east of the City is included in the City limits, however, receives its water supply from on-site wells. The Developmental Center receives sewer service from the City.

The City is a part of the Eastern Tule Groundwater Sustainability Agency (GSA) which also includes, Porterville Irrigation District, Saucelito Irrigation District, Teapot Dome Water District, Vandalia Water District, Terra Bella Irrigation District, Kern-Tulare Water District, and Tulare County.

East Porterville is an unincorporated section of the City that historically has only partly been serviced by the City's public water distributions system. Recent drought conditions have led to an emergency water shortage for East Porterville residents resulting in reduced groundwater elevation causing wells to run dry. The City and DWR have implemented a program to connect parts of East Porterville residents to the City's water distribution system over the span of a few years. The City began this program in 2016 and connected approximately 725 connections

between 2016 and 2020. East Porterville is currently within the City's 2030 General Plan UDB and Sanitary Sewer Service is still managed by the Porter Vista Public Utilities District, but is treated at the City's waste water treatment facility.

3.1.1 Description of Transmission, Treatment, and Distribution Facilities

The City of Porterville drinking water supply is solely from groundwater wells. As mentioned, the City does not receive any surface water from the Tule River or the Friant Kern Canal. The City does not participate in any surface drinking water exchanges with the local water agencies included in the Eastern Tule GSA. The City's groundwater supply is extracted using 36 active wells scattered throughout the water service area that pump directly into the water distribution system, however a few of these wells are on standby for high demands. Extracted groundwater is chlorinated at the wellheads to provide disinfectant residual in the distribution system. In total, Porterville's water service area encompasses 11,904 acres, or approximately 18.6 square miles. The City has approximately 276 miles of water distribution pipeline ranging from sizes 4- to 16-inches in diameter. Figure 3.2 shows the City's water service area, wells, and water transmission main layout.

3.2 Service Area Climate

> *10631(a). A plan shall… Describe the service area of the supplier, including … climate…*
>
> *10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning… while accounting for impacts of climate change.*

The City's service area climate is a semi-arid, Mediterranean environment with cold winters, warm summers, and moderate rainfall. The City experiences generally dry weather conditions throughout the year with rain occurring through the months of November through April. Average monthly evapotranspiration (ETo) rates, rainfall, and temperature are summarized in Table 3.1.

Table 3.1 Climate Characteristics

Month	Standard Monthly Avg. ETo(1) (in)	Monthly Avg. Rainfall(2) (in)	Min Monthly Avg. Temp(2) (°F)	Max Monthly Avg. Temp(2) (°F)
January	1.24	2.21	35.50	56.90
February	1.96	2.06	38.40	63.80
March	3.41	1.94	41.10	69.50
April	5.10	1.14	44.90	76.70
May	6.82	0.44	50.40	85.10
June	7.80	0.11	56.10	93.00
July	8.06	0.01	61.40	99.10
August	7.13	0.02	59.50	97.30
September	5.40	0.18	54.80	91.50
October	3.72	0.55	47.10	80.70
November	1.80	1.18	38.90	67.50
December	0.93	1.79	35.20	57.50
Annual	**53.37**	**11.63**	**46.94**	**78.22**

Notes:
(1) California Irrigation Management Information System (CIMIS) Station 169 Porterville. Represents Monthly average ETo from August 2000 to February 2019, Zone 12.
(2) Source: Western Regional Climate Center Lindsay (044957). Represents monthly average from December 1913 to June 2016.

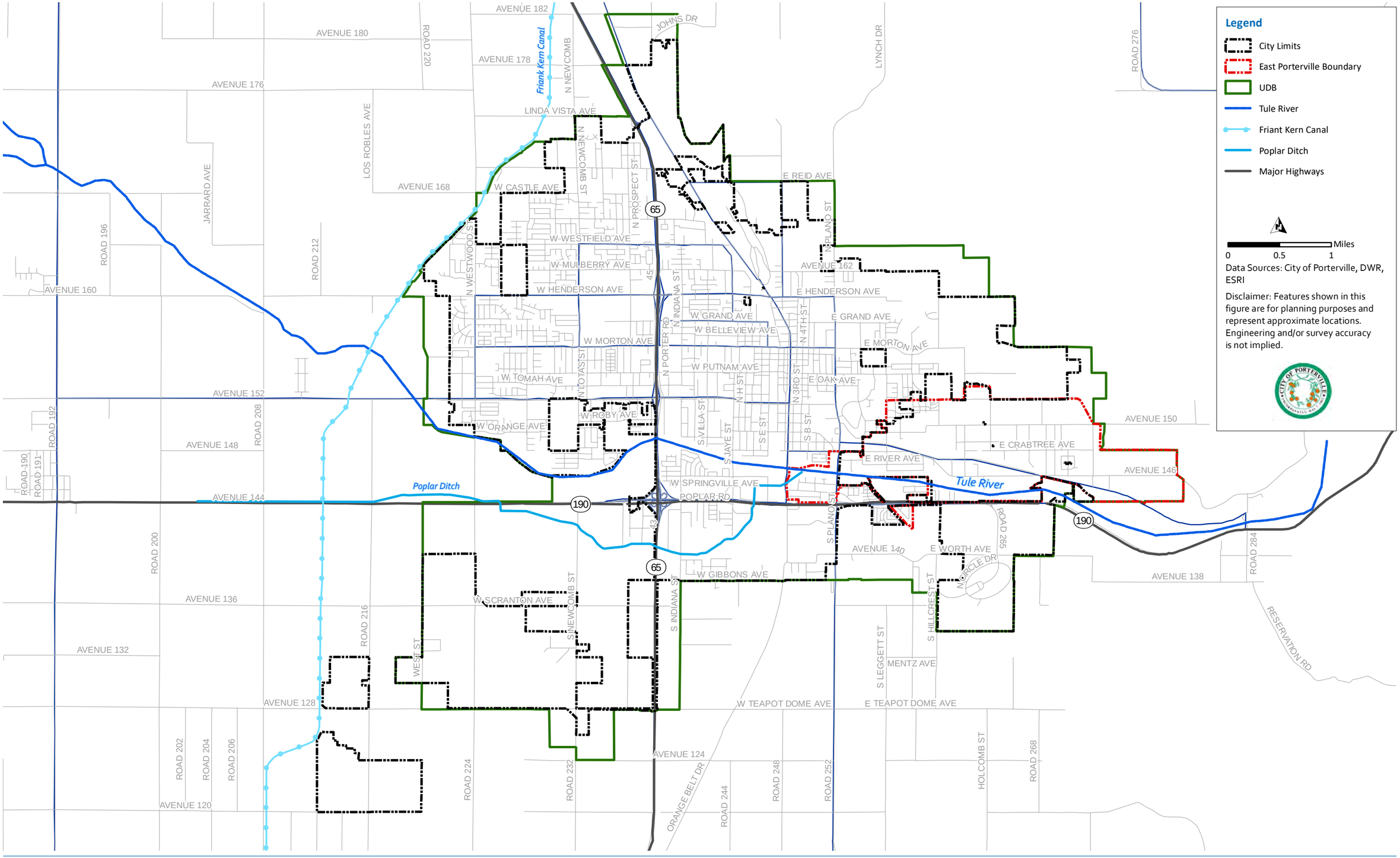

Figure 3.1 Porterville Regional Location Map

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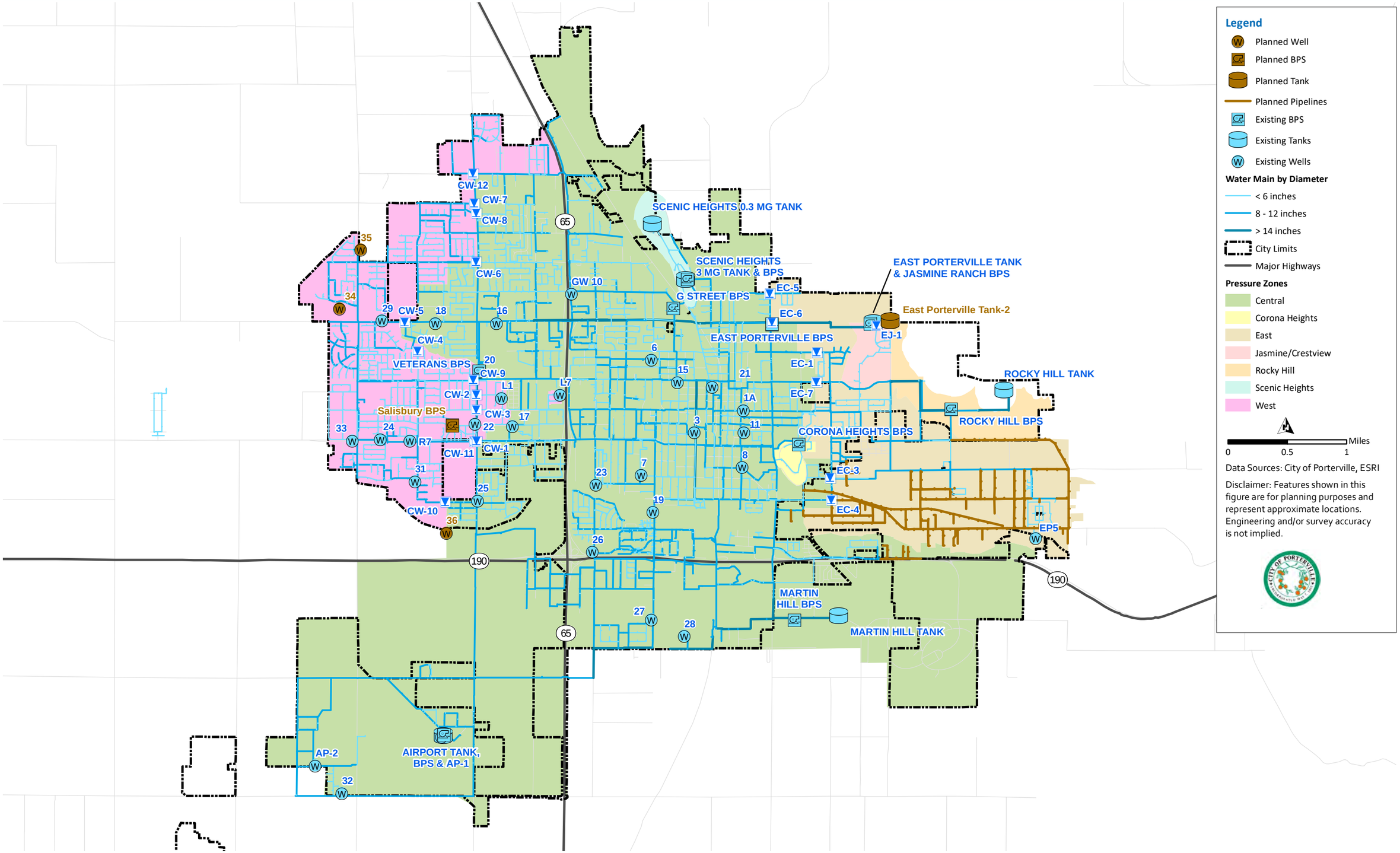

Legend

- Planned Well
- Planned BPS
- Planned Tank
- Planned Pipelines
- Existing BPS
- Existing Tanks
- Existing Wells

Water Main by Diameter

- < 6 inches
- 8 - 12 inches
- > 14 inches
- City Limits
- Major Highways

Pressure Zones

- Central
- Corona Heights
- East
- Jasmine/Crestview
- Rocky Hill
- Scenic Heights
- West

Miles
0 0.5 1

Data Sources: City of Porterville, ESRI

Disclaimer: Features shown in this figure are for planning purposes and represent approximate locations. Engineering and/or survey accuracy is not implied.

Figure 3.2 Porterville Water Distribution System

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As shown in Table 3.1, the City's service area's average monthly temperature ranges from about 47 to 78°F. Total annual values of ETo and precipitation are 53.37 inches and 11.62 inches, respectively. Records show that the average monthly precipitation ranges from 0 to 2 inches with most of the precipitation typically occurring from November through April.

3.3 Climate Change

Climate change in California has the potential to increase temperature, reduce snowfall and extend periods of severe drought. Porterville is located in the Tulare Lake Hydrologic Region which encompasses roughly 17,000 square miles in the southern San Joaquin Valley. In this region, the following climate effects are likely expected in the future:

- Crops affected by reduced winter chill hours, increasing extreme heat days, and increasing evapotranspiration therefore requiring more irrigation.
- Loss of snowpack reduces reliability of surface water and replenishment of local supplies, resulting in greater demand for groundwater.
- Higher likelihood of extreme wet and dry years.
- Increased frequency of flooding in low-lying areas.
- Average annual maximum temperatures likely to increase 5 to 9 degrees F by the year 2100.

These climate change affects all have potential to impact the water supply of the City. The groundwater aquifers in the Central Valley are generally recharged through a combination of precipitation through rainfall and percolation through the various rivers and canals sourced from the Sierra snow melt. With a decrease in groundwater recharge and increase in average temperatures and overall demand, a perfect storm of low supply and increased use limits the availability of groundwater for all users in the Valley.

The City of Porterville is completely reliant upon groundwater for its drinking water supply. The City is surrounded by agricultural land varying in citrus, vegetable, nut, and grain crops which receive water from either an irrigation district supplied from the Friant-Kern Canal or a private agricultural well. Groundwater levels have dropped significantly over the last drought period as outlined in the Eastern Tule Groundwater Sustainability Plan (ETGSP). With a significant reduction in surface water allocations most farmers and surrounding communities were left with no choice but to utilize the groundwater supply for agricultural use.

Drought conditions initially cause increase in demand with increase temperatures and reduced precipitation. The diurnal pattern of demand over an average year peaks in the hotter months for landscape irrigation, recreation, and agricultural uses. Over-pumping leaves the City's groundwater supply and pumping effectiveness quite vulnerable to significant reductions in groundwater elevations from a rise in demands. The City does not have an alternative supply of water therefore drastic reduction in groundwater elevation creates an extremely vulnerable condition which puts the City at risk. Effects of drought have already occurred nearby to the community of East Porterville which experienced emergency water shortage issues during the last major drought event between 2013 and 2017 and required State intervention. The overall hydrologic dynamic of the City and surrounding area's drinking water supply are exposed to the effects and changing conditions set upon by climate change.

The following chapters will present a more detailed approach on the City's efforts to develop a more reliable and diverse source of water and to address excessive groundwater pumping to eliminate over drafting conditions in the future:

- Chapter 4: Customer Water Use
- Chapter 5: Conservation Target Compliance
- Chapter 6: Water Supply Characterization

3.4 Service Area Population and Demographics

> *10631(a). Describe the service area of the supplier, including current and projected population …The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available.*

This section summarizes historical, current, and projected population trends in the Porterville. Population projections are essential to the planning process and form the basis for most planning decisions, yet projecting future growth is far from an exact science given the complex set of variables that can affect the rate of growth. Typically, projections are developed by taking past patterns and combining them with assumptions to obtain an estimate of future growth rates. These projections serve to provide the City insight on the type and quantity of future growth as well as guidance regarding future planning activities; therefore, such planning activities can only be as effective as the ability to anticipate population growth. The general Porterville water service population consists mainly of full-time residents and has a very small transient population that commute into the City service area for work or travel.

3.4.1 Service Area Population

The water service population from 2001 to 2010 was taken from the City's 2015 UWMP. At the time, the growth rate was calculated at approximately 2.5 percent. Historical population growth rates have been approximately 2.2 percent on average which is shown in Figure 3-3. The water service populations for the 2020 UWMP was calculated using an acceptable modification of the DWR population. The DWR population tool resulted in an abnormally high persons per connection of 4.98. To reflect current population growth, the 2010 persons per connection of 4.39 was used as an acceptable modification per the population tool guidelines. The resulting water service population, shown in Figure 3.3, is estimated at 74,907. The Population Tool results are included in Appendix K. Table 3.2 shows the current and projected water service population for the City.

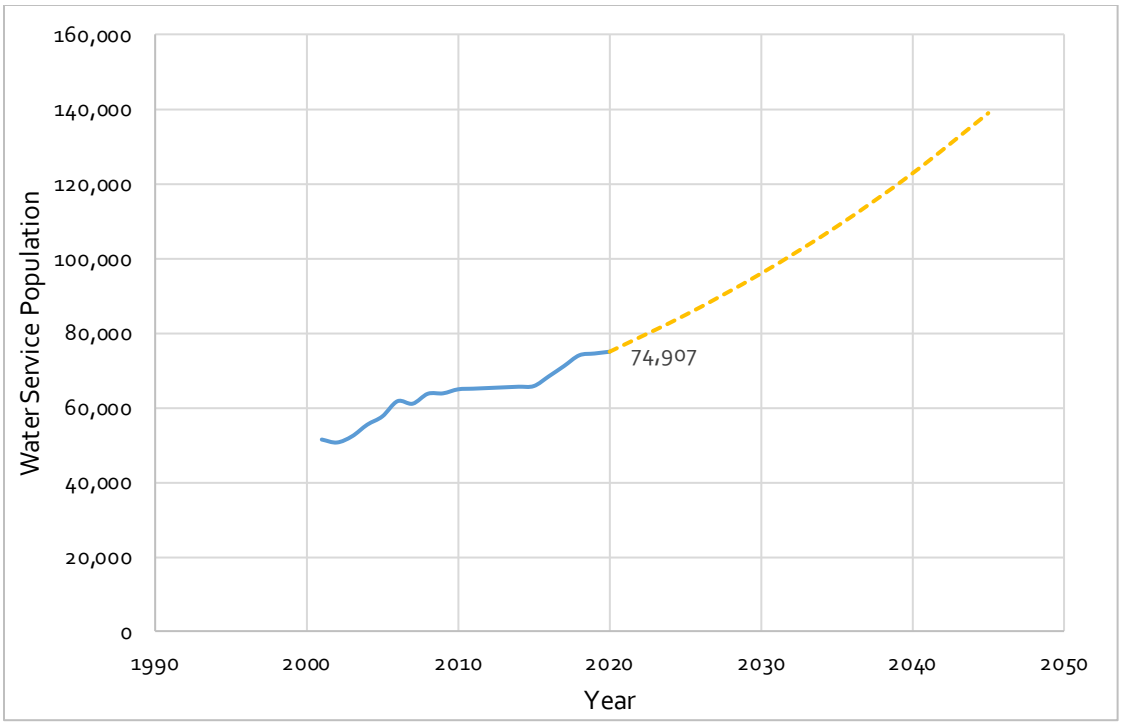

Figure 3-3 Historical and Projected Water Service Population

Table 3.2 Retail: Population – Current and Projected

	2020	2025	2030	2035	2040
Population Served	74,907	87,901	99,452	112,521	127,307

Notes:
(1) Growth rate set at 2.5 percent, consistent with City's 2020 IMP.

3.4.2 Other Social, Economic, and Demographic Factors

> *10631. Describe the service area of the supplier, including… other social, economic and demographic factors affecting the supplier's water management planning.*

Porterville is located in a rural area that depends on an independent water management strategy that solely services the City. DWR defines disadvantage communities (DAC) as regions whose annual median household income (MHI) is less than 80 percent of the Statewide annual MHI. The City of Porterville is mostly within the California's DAC boundary as shown in Figure 3-4. Most of the City's water service population identifies to be within a DAC. The current Statewide MHI is $71,228 and per 2019 census data, the median household income for Porterville residents is $43,823.

Implemented in 2020 as a result of the COVID-19 pandemic, California legislation was passed that requires the City to provide a payment plan for outstanding utility bill balances since the deferral of water shutoff as a result of non-payment was not allowed during the pandemic. Otherwise, the City does not provide utility bill payment assistance.

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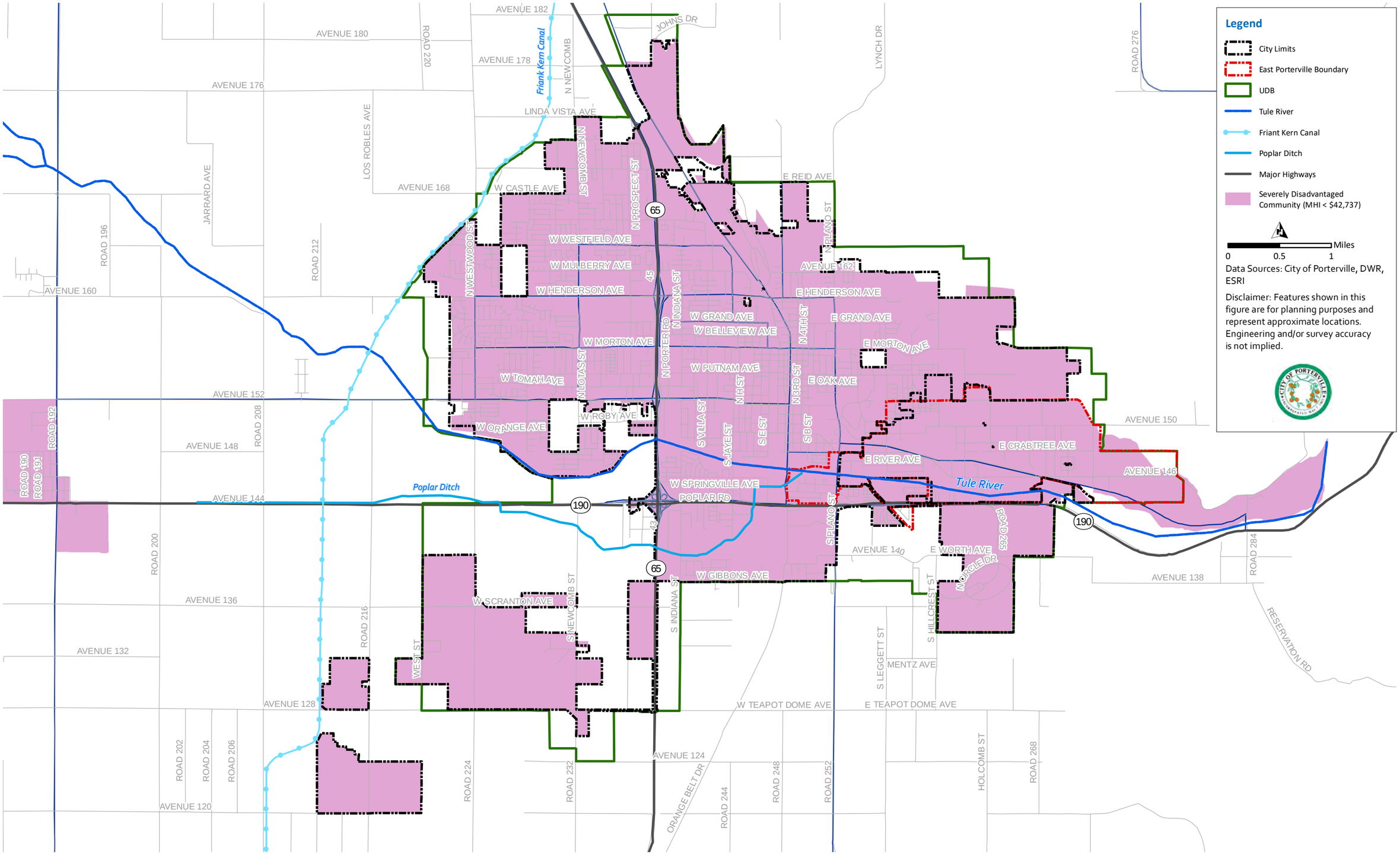

Figure 3.4 Disadvantaged Communities

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3.5 Land Uses within Service Area

> *10631(a). The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities…*

The City of Porterville Urban Development Boundary (UDB) is defined in its 2030 General Plan which has a total area of approximately 17,183 acres. The City service area falls within the City limits and few areas outside of the limits, such as the East Porterville area, which is still within the UDB. The UDB extends from Lake Success to the Friant Kern Canal as its western border and from Avenue 182 to the airport as its north and south limits. Land use information presented in this UWMP is based on the City's 2030 General Plan.

3.5.1 Land Use and Existing Service Area

Figure 3.5 shows the City's existing land use map. Table 3.3 provides a summary, by land use, of the amount of developed and underdeveloped land within the existing service area.

As shown in Table 3.3, there are approximately 6,482 acres of developed and underdeveloped land within the service area (excluding right-of –ways such as streets, highways, and railroads). Within the service area, 3,782 acres (58 percent) are classified as residential, 608 acres (9 percent) are classified as commercial, and 399 acres (6 percent) are associated with Industrial. The remaining mixed use and others make up the remaining 1,692 acres (26 percent). The East Porterville land use area shown in Figure 3.3 is generally single family residential with a few commercial and public intuitional classified parcels throughout. This area comprises of approximately 1,704 total acres.

Table 3.3 Water Service Area Land Use[1][2]

Land Use Category	Developed	Underdeveloped	Total
Residential			
Rural Residential	13	11	24
Very Low Density Residential	63	5	68
Low Density Residential	2,550	286	2,836
Low Medium Density Residential	33	61	94
Medium Density Residential	431	108	539
High Density Residential	198	23	221
Commercial			
Neighborhood Commercial	14	9	23
Retail Centers	183	30	214
Professional Office	77	7	84
General and Service Commercial	211	15	226
Downtown Retail	62		62
Industrial			
Industrial	223	20	243
Industrial Park	63	92	156
Mixed Use			
Commercial Mixed Use	62	2	63
Downtown Mixed Use	45	8	53
Other			
Public Institutional (Excl. Airport)	380	11	391
Education	367	19	386
Parks and Recreation	238	22	260
Agriculture Rural Conservation	26	0	26
Other (Unknown)	63	3	66
Airport	447	0	447
East Porterville	-	-	1,704
Total	**5,751**	**731**	**8,186**

Notes:
(1) Land use areas based on an aerial analysis of the City's current service area.
(2) The land use totals in this table exclude the area associated with East Porterville/Porter Vista PUD

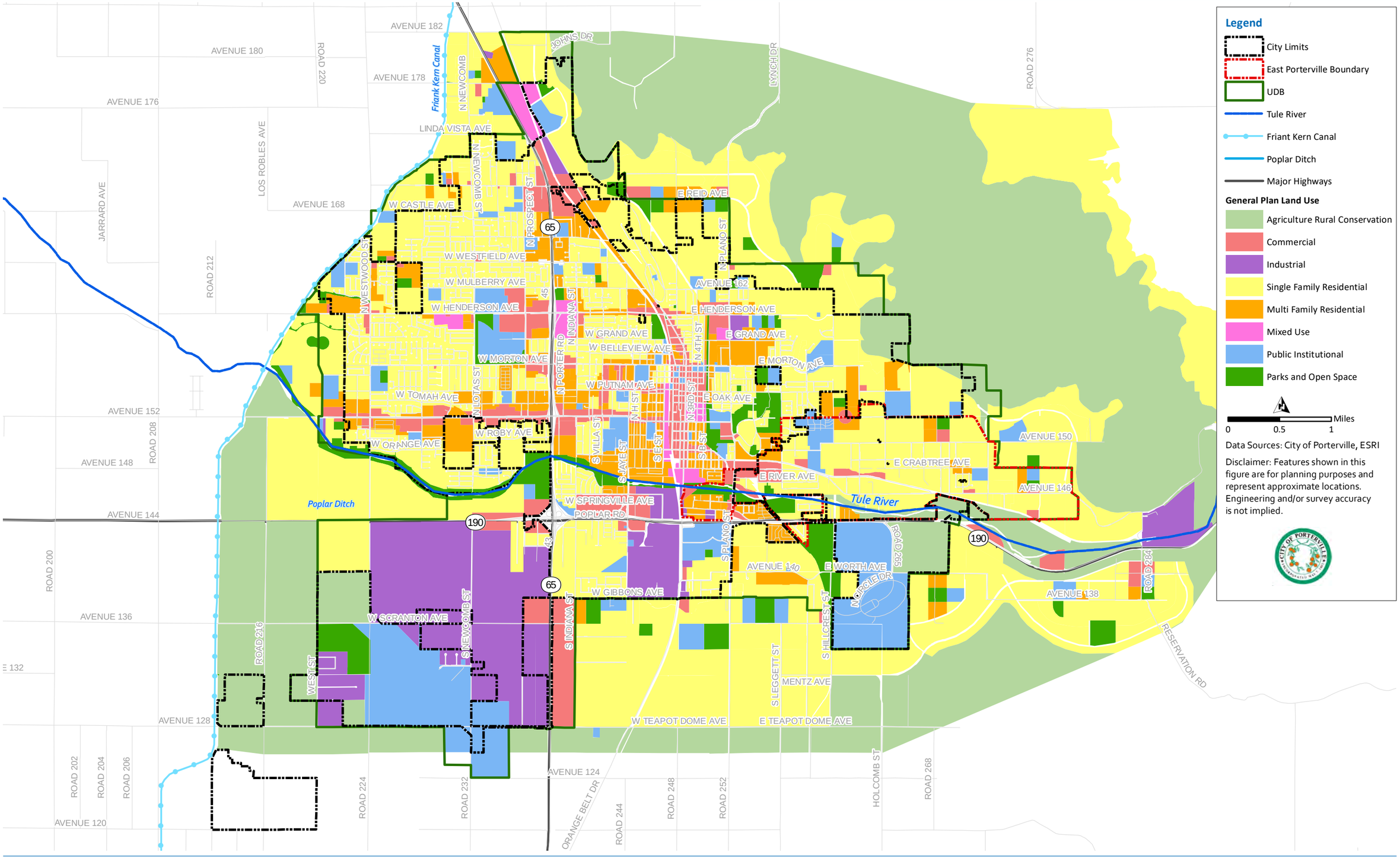

Figure 3.5 General Plan Land Use

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Chapter 4

CUSTOMER WATER USE

The UWMPA requires that the UWMP identify the quantity of water supplied to the agency's customers including a breakdown by user classification. This section describes the water system demands and water demand projections.

4.1 Non-Potable Versus Potable Water Use

This chapter covers potable and raw water demand. Recycled water is addressed comprehensively in Chapter 6.4.

4.2 Past, Current, and Projected Water Use By Sector

> *10631(d). (1) For an urban retail water supplier, quantify, to the extent records are available, past, and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following…*
>
> *(2). The water use projections shall be in the same five-year increments described in subdivision (a).*
>
> *(4)(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.*
>
> *(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following: (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections. (ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.*

Water demands served by the City are primarily residential (includes SFR and MFR), commercial, industrial, and institutional (CII), and landscape irrigation. Of the City's 17,063 connections, 16,814 of them are metered. The City classifies meters (2020) into the following categories:

- Single Family Residential.
- Multi-Family Residential.
- Commercial/Institutional.
- Industrial.
- Landscape Irrigation.
- Other.
- Agricultural Irrigation.

The actual demands for potable and non-potable water are presented in Table 4.1 for the 2020 calendar year. Conservation efforts between 2015 and 2020 indicate that the City is using less water than originally anticipated in the 2015 UWMP. The 2020 projections in the 2015 UWMP, show an anticipated potable water demand of 4,857 MG. The 2020 actual use, shown in Table 4.1, is 1,210 MG (3,713 AF) or 25 percent less than the 2020 projected demand. The combination of continued below average and inconsistent precipitation, general water conservation mindset, and metering has decreased typical potable water consumption to approximately 130 gallons per capita per day (gpcd). Moving forward, the City's per capita water usage is expected to increase with population growth and favorable hydrologic conditions. The City utilizes the 179 gpcd as a conservative approach for planning purposes in their water, sewer, storm drain integrated master plan (IMP) and other studies.

Table 4.1 Retail: Demands for Potable and Non-Potable Water – Actual

Use Type	2020 Actual		
	Additional Description	Level of Treatment When Delivered	Volume
Single Family Residential		Drinking Water	2,025
Multi-Family Residential		Drinking Water	390
Commercial and	Institutional	Drinking Water	448
Industrial		Drinking Water	10
Landscape		Drinking Water	223
Losses		Drinking Water	403
Other		Drinking Water	148
Agricultural Irrigation		Drinking Water	0
Total			**3,647**

Table 4.2 contains the projected potable water demands from 2025 through 2040. The demand projections are based on the growth projections from the City's IMP. From the IMP, it was determined the methodology for future water demand projections includes a combination of projection population, per capita demand rates, water demand factors (by land use), and land use designations. The future demands, the baseline per capita demand, was applied to the projected population to estimate infill and new development. Additionally, for undeveloped land, the future demands were calculated by applying water demand factors to the designated land use acreage within the UDB. Table 4.2 are only general estimates of projected use and may vary significantly based on future development and water conservation measures taken by each customer sector.

Table 4.2 Retail: Use for Potable and Non-Potable Water – Projected

Use Type	Additional Description	Projected Water Use Report to the Extent that Records are Available			
		2025	2030	2035	2040
Single Family Residential		3,182	3,607	4,074	4,621
Multi-Family Residential		612	694	784	889
Commercial and	Institutional	704	798	901	1,022
Industrial		16	18	20	23
Landscape		351	398	449	509
Losses		232	263	297	337
Other		634	719	811	920
Agricultural Irrigation		0	0	0	0
Total		**5,731**	**6,497**	**7,337**	**8,322**

The City's total water demands for potable and recycled water are based on the figures presented in Table 4.1, Table 4.2, and Table 6.4. These demands are summarized in Table 4.3. As discussed in chapter 3, currently, the City uses recycled water as a means of treated wastewater effluent disposal for restricted agricultural irrigation. Within the next five years, the City plans to provide recycled water for unrestricted agricultural irrigation to nearby irrigation districts for beneficial use as described in Chapter 6.

Table 4.3 Retail: Total Gross Water Use (Potable and Non-Potable)

Year	2020	2025	2030	2035	2040
Potable Water, Raw, Other Non-Potable	3,647	5,731	6,497	7,337	8,322
Recycled Water Demand	1,556	2,230	2,522	2,854	3,227
Optional Deduction of Recycled Water Into Long-Term Storage	1,556	2,230	2,522	2,854	3,227
Total Water Use	**3,647**	**5,731**	**6,497**	**7,337**	**8,322**

4.3 Distribution System Water Losses

10631(e)(1) Quantify, to the extent records are available, past, and current water use, over the same five-year increments described in subdivision (a), and projected water use, identifying the uses among water use sectors, including, but not necessarily limited to, all of the following uses:

(J) Distribution system water loss

10631(d)(3)(A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34

Distribution system water losses ("real" losses) are the physical water losses from the water distribution system and the supplier's storage facilities, up to the point of customer consumption. The City distribution system losses are quantified using the American Water Works Association (AWWA) Method Guidance "Water Resources Water Audit Manual." The distribution system water loss for the most recent 12-month period available (2020 calendar year) is reported in Table 4.4.

Table 4.4 Retail: 12 Month Water Loss Audit Reporting

Reporting Period Year	Volume of Water Loss(1) (MG)	Volume of Water Loss (AF)
01/2016	310	952
01/2017	353	1083
01/2018	405	1242
01/2019	366	1124
01/2020	337	1035.5

Notes:
(1) Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.

As shown in Table 4.4 and reported in the AWWA water audit (Appendix E), the City had approximately 1,035.5 AFY of water loss in their latest 2020 report. The system losses for the five preceding years were:

- 2016 – 951.8 AFY of water loss.
- 2017 – 1082.5 AFY of water loss.
- 2018 – 1242.2 AFY of water loss.
- 2019 – 1123.8 AFY of water loss.
- 2020 – 1035.5 AFY of water loss.

The average total Water loss between 2016 and 2020 is approximately 1004 AF or 327 MG.

4.4 Estimating Future Water Savings

"Passive" savings are water savings from codes, standards, ordinances, or transportation and land use plans. As shown in Table 4.5, future water savings are not included in the total water use projections (Table 4.2) and lower income household demand projections are included in the total water use projections (Table 4.2 and Table 4.3).

Table 4.5 Retail Only: Inclusion in Water Use Projections

Are Future Water Savings Included in Projections?	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc. utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections?	Yes

4.5 Water Use for Lower Income Households

The UWMPA requires that the UWMP identify planned low-income housing developments within the agency's service area and develop demand projections for those units. A lower income household is defined as one with an income below 80 percent of area MHI, adjusted for family size.

> *10631.1(a). The water use projections required by Section 10631 shall include projected water use for single-family and multifamily residential housing needed for lower income households, as defined in Section 50079.5 of the Health and Safety Code, as identified in the housing element of any city, county, or city and county in the service area of the supplier.*

The 2015 UWMP calculated water use for low-income housing based on the City's 2015 Housing Element report referenced in the 2030 General Plan. The low-income forecasted demands were based on a usage of 3.39 persons per occupied household. Since then, 2020 Census data report that the City of Porterville has a 27.5-percent of person to be in poverty. DWR Drought and Water Shortage Risk for self-supplied communities identify Porterville to have a 28.4 percent of persons in the area living at or below federal poverty standards. Using the IMP planning level per capita demand and the 2020 SB7x7 Target demand of 179 gpcd, the total estimated 2025 to 2040 projected water use for lower income households is shown in Table 4.6. Percent of persons in poverty were averaged from historical data from Tulare County Census data.

Table 4.6 Retail Only: Inclusion in Water Use Projections

Year	2025	2030	2035	2040
Projected Low-Income Water Usage	1,395	1,578	1,785	2,020
Units (MG)				

4.6 Climate Change Considerations

Recent affects in climate change have drastically altered the water consumption standards and behaviors of the entire state of California. The Central San Joaquin Valley in particular has been significantly affected by the most recent California drought and continues to face abnormally warm seasons, severe weather changes, reduced snowpack, and less frequent rainfall events. Coupled with population growth, the increased demand and decrease supply poses a problem that can potentially impact a City's growth and increase infrastructure vulnerabilities and risks. As stated in Section 3.3, Groundwater levels have dropped significantly over the last drought period as outlined in the ETGSP. With a significant reduction in surface water allocations most farmers and surrounding communities were left with no choice but to utilize the groundwater supply for agricultural use. The City has been successful at facing the adversity of climate change by reducing potable water consumption and adaptation strategies (water supply diversification), actively participating in groundwater recharge efforts through treated wastewater effluent management, surface water allocations, and investigating the feasibility of diversifying and expanding their drinking water supply.

Since approximately 2008, the City's per capita demand has gradually decreased with significant reductions beginning in 2013. Demands in 2013 peaked at 179 gpcd and have reduced to 130 gpcd on average in 2015 and have remained consistent through 2020. The City of Porterville's 2015 UWMP shows a projected total gross water use in 2020 to be 4,857 MG in Table 4.2. The City's 2030 general plan aims to reduce the groundwater pumping to match the safe yield of the groundwater basin. Similarly, as part of the Eastern Tule GSA, the City plans to reduce groundwater usage by diversifying their supply portfolio as well as implement additional groundwater recharge in the future. Table 4.3 in this 2020 UWMP shows a total gross water use potable water use to be 3,647 MG, which is a net change of 1,210 MG when compared to the Projected 2020 gross water use of 4,857 MG. The projected total gross water use in comparison to the 2015 UWMP was adjusted based on the 2020 actual value. The significant drop in total

gross projections takes into consideration that the standard practice of domestic water consumption and the implementation of conservation efforts set by the City. Water use reduction efforts throughout the city has promoted a conservation culture which in turn has decreased total usage over time. Available rebates for high efficiency plumbing, installation of water meters on new and existing services, water waste audits, landscape rebates and selection, and a more conscientious effort by citizens has proved to reduce total usage and ultimately decrease projections over the next 20 years.

Climate change has already impacted various communities nearby and the City of Porterville itself. Porterville has taken many steps in preparation to progress forward in reducing current and future climate change impacts to their water system through conservation strategies and by having the foresight to augment their water supply portfolio. The City continues to investigate means to reduce water consumption and loss, improve infrastructure, and create the ability to both augment and diversify their existing water supply.

Chapter 5

CONSERVATION TARGET COMPLIANCE

The UWMPA requires that the UWMP identify the baseline water demand, urban water use target, and interim urban water use target for the City. In the 2015 UWMP these water use targets were determined per the DWR Methodologies. The daily per capita water use, expressed in gpcd, is the total water use within the service area divided by the population. These targets are necessary to judge compliance with the 2020 use reductions set forth in the Water Conservation Bill of 2009 (SB X7-7).

The purpose of this section in the 2020 UWMP is to determine whether the City has met the 20 percent conservation mandate. All SB X7-7 forms are included in Appendix F.

5.1 2015 UWMP Baseline and Targets

A supplier may update the baseline and target water use if there were changes to their distribution area. Porterville's distribution area has not changed since 2015. Therefore, the baseline and target gpcd values from the 2015 UWMP are utilized in this UWMP to determine compliance with the 2020 target. In the 2015 UWMP, a 10-year baseline and a 5-year baseline were calculated to establish the minimum criteria for the Porterville's water use reduction targets. The 2015 UWMP identifies that the 10-year baseline range (2001 to 2010), and 5-year baseline range (2003 to 2007) are 195 and 199 gpcd, respectively. These tables are included in Table 5 of the SB X7-7 Verification Forms of the 2015 UWMP (Appendix C). The City's water use target for 2020 is 179 gpcd, see section 5.1.5.3.

5.2 Service Area Population

> *10608.20. (e) An urban retail water supplier shall include in its urban water management plan due in 2010… the baseline per capita water use,…along with the bases for determining those estimates, including references to supporting data.*
>
> *(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.*
>
> *10644. (a)(2) The plan… shall include any standardized forms, tables or displays specified by the department.*

The 2020 service area population was provided by the DWR Population Tool. This population is shown in table 3-1 and was used to calculate the 2020 target per capita demand. The population in the 2015 UWMP to develop the baseline target was determined using the DWR Population tool as shown in Table 2 of the SB X7-7 Verification Forms. The 2020 service area population is reported in Table 3 of the SB X7-7 Verification Forms.

5.3 Gross Water Use

> *10608.12 (g) "Gross Water Use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:*
> *(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier*
> *(2) The net volume of water that the urban retail water supplier places into long term storage*
> *(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier*
> *(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.*

"Gross Water Use" is the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier with certain acceptable exclusions. Gross water use is reported for each year in the baseline periods as well as 2020, the compliance year, in Table 4 of the SB X7-7 Verification Forms (Appendix F). The annual gross water values are the "total water into the system" reporting in the City's Public Water System Statistics reports. This reflects the volume of water entering the system. These values do not account for losses in the distribution system.

5.4 Baseline Daily Per Capita Water Use

The baseline daily per capita water use in each of the baseline years is calculated in Table 5 of the SB X7-7 Verification Form included in the 2015 UWMP (Appendix C) by dividing annual gross water use by annual service area population.

5.5 Baselines and Targets Summary

The Water Conservation Act of 2009 (SB X7-7) governs water conservation in California and requires water suppliers to increase water efficiency by decreasing per-capita consumption by a State mandated 20 percent by the year 2020.

As mentioned above a supplier may update the baseline and target water use if there were changes to their distribution area. Since there has been no change in water service area, the baseline and target gpcd values from the 2015 UWMP are utilized in this UWMP to determine compliance with the 2020 target.

Using the 10-year baseline, the City's water use target for 2020 must be 20 percent less than the baseline volume, resulting in 156 gpcd and a 2015 interim water use target of 187 gpcd to measure progress. Based on the 2015 UWMP, the gross water usage was 130 gpcd, which was below the interim water use target. Furthermore, Section 5.5.1 discusses the methodology in calculating the actual 2020 water use target.

Table 5.1 Baselines and Targets Summary

Baseline Period	Start Year	End Year	Average Baseline gpcd(1)	Confirmed 2020 Target(1)
10-15 year	2001	2010	195	179
5 Year	2003	2007	199	

Notes
(1) All values are in gpcd

5.5.1 Target Methods and Target Confirmation

> *10608.22. Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivisions (b) of Section 10608.12. This section does not apply to an urban retail water supplier with a base daily per capita water use at or below 100 gallons per capita per day.*

Four target methods have been developed, and identify the specific steps water suppliers shall follow to establish these targets. A brief description of each method, as well as the water use calculated using each methodology is included below, however the City utilized Method 3 to calculate their 2020 target, which is consistent with the 2015 UWMP.

5.5.1.1 Method 1 – 80 Percent of Base Daily Per Capita Water Use

Method 1 requires an urban water supplier to first determine the base daily per capita use. In order to determine the target using Method 1, 80 percent of the base daily per capita use 10-year base period) is calculated. Based on the 10-year baseline daily per capita use of 195 gpcd determined previously, the target use for Method 1 is 156 gpcd.

5.5.1.2 Method 2 – Performance Standards

Method 2 requires water suppliers to use baseline CII, indoor residential, and landscaped area water use to calculate a water use target. Based on the nature of the data required to determine a target using Method 2, it is not feasible for the City to use this methodology.

5.5.1.3 Method 3 – 95 Percent of Hydrologic Region Target

Method 3 requires water suppliers to use the hydrologic region target to calculate a water use target for 2020. In order to determine the target using Method 3, 95 percent of the region-specific conservation goal is calculated. Based on a target of 188 gpcd for the Tulare Lake Region, the Method 3 target is 95 percent of the target resulting in 179 gpcd.

5.5.1.4 Method 4 – Savings by Water Sector

Method 4 identifies water savings obtained through identified practices and subtracts them from the base daily per capita water use value identified for the water supplier. The water savings identified that can be used to reduce the base daily per capita water use value include:

- Indoor residential use savings.
- Metered savings (not applicable since City is fully metered).
- CII savings.
- Landscape and water loss savings.

To calculate the CII savings, a retail water supplier must have data for the entire baseline period used in the base daily per capita water use calculation. The City does not have metered CII usage data for the entire baseline.

5.6 2020 Compliance Daily Per Capita Water Use

> *10608.12(e) "Compliance daily per-capita water use" means the gross water use during the final year of the reporting period…*
>
> *10608.20 (e) An urban retail water supplier shall include in its urban water management plan due in 2010 . . . compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.*

Compliance daily per-capita water use means the gross water use during the final year of the reporting period. Water suppliers are required to calculate their actual 2020 water use (2020 calendar year) and evaluate whether their per capita 2020 target use was met. Refer to Table 5.2 and SB X7-7 Table 9 for 2020 compliance. The City met the 2020 target of 179 gpcd in the year 2020 with an actual per capita water use of 133 gpcd. If consumption rates begin to rise, the City must implement additional conservation and/or efficiency measures to maintain below this target.

Table 5.2 2020 Compliance

Actual 2020 gpcd	Optional Adjustments to 2020 GPCD Enter "0" if no adjustment is made					2020 confirmed target gpcd(1)	Did Supplier Achieve Targeted Reduction for 2020?
	Extraordinary Events	Economic Adjustment	Weather Normalization	Total Adjustments	Adjusted 2020 gpcd		
133	0	0	0	0	133	179	Yes

Notes:
(1) All values are in gpcd.

Chapter 6

SYSTEM SUPPLIES

The UWMPA requires that the UWMP include a description of the agency's existing and future water supply sources for the next 20 years. The description of water supplies must include detailed information on surface water, groundwater, the groundwater basin, potential opportunities for desalination of groundwater and seawater, and detailed information on the agency's imported water.

6.1 Water Supply Overview

The City water supply is strictly from extracted groundwater. The City has 36 active groundwater wells that are located throughout the City limits that pump directly to the distribution system or to various water storage tanks. Figure 3-2 displays the City's distribution system, water storage tanks, and active groundwater wells.

6.2 Purchased or Imported Water

The City of Porterville does not import or purchase any raw or potable water for their public distribution system. The City has a total surface water allocation of approximately 2,039 ac-ft (664 MG). The City has acquired surface water rights in the amount of 468 shares from the Pioneer Water Company which is equivalent to approximately 1.5 ac-ft per share resulting in 236.5 MG. Additionally, the City has acquired approximately 14.5 ac-ft (4.7 MG) from Porter Slough Ditch Company and 1,300 ac-ft (423.6 MG) from Porterville Irrigation District. When available, the City purchases surface water supplies from nearby irrigation and water districts and utilizes for groundwater recharge. The City has been using their surface water allocation to augment their existing groundwater supply and to create a drought buffer during excessive extraction periods. Figure 6.1 shows the volume of surface water the City has used for groundwater recharge over the last ten years.

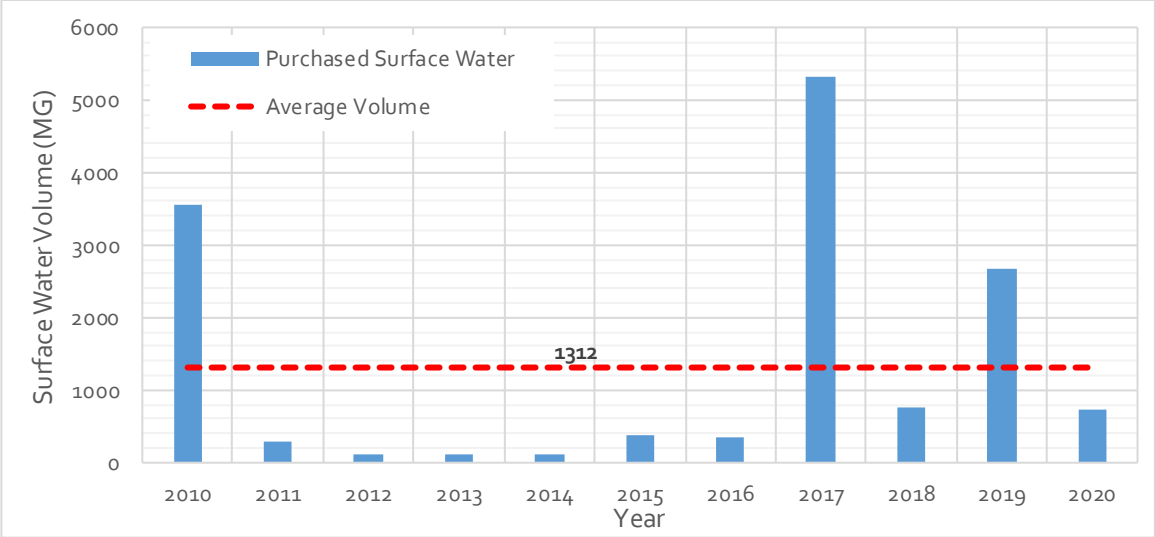

Figure 6.1 Purchased Surface Water Volume, MG (2010 – 2020)

6.3 Groundwater

The City of Porterville drinking water supply is solely from groundwater extraction wells. The City's groundwater supply is extracted using 36 active wells scattered throughout the water service area that pump directly into the water distribution system and surrounding above ground water storage tanks. Extracted groundwater is chlorinated at the wellheads to provide disinfectant residual in the distribution system.

6.3.1 Basin Description

> *10631 (b) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:*
>
> *(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater.*

The City's groundwater system is supplied from the east side of the Tule Sub-basin. The Tule sub-basin sits on a series of overlapping alluvial fan sedimentary deposits sourced from runoff from the Sierra Nevada mountain range east of the City. Near the City, the natural waterways that promote supply to the groundwater basin are Deer Creek and the Tule River. Tule River flow is managed by Lake Success for flood control and recreation at Lake Success located just east of the City. As described in the ETGSP, The Tule Subbasin consist of permeable sand and gravel layers, interbedded with low permeability silt and clay lenses. The transmissivity of the aquifer soils near the Tule River are high from loose soil river deposits. DWR records indicate that the groundwater elevation is approximately 300 feet below ground surface.

6.3.2 Groundwater Management

> *10631 (b) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:*
>
> *(1) A copy of any groundwater management plan adopted by the urban water supplier… or any other specific authorization for groundwater management.*

Porterville is part of the Eastern Tule GSA which in part has outlined various projects and management actions that are to be taken by the City and the surrounding water purveyors to meet the groundwater sustainable yield goals set in the GSP. The adopted ETGSP is attached to this plan in Appendix G.

6.3.3 Overdraft Conditions

> *10631 (b)(2) For basins that have not been adjudicated, (provide) information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current official departmental bulletin that characterizes the condition of the groundwater basin, and a detailed description of the efforts being undertaken by the urban water supplier to eliminate the long-term overdraft condition.*

The Eastern Tule GSP, outlines that historically, the Tule Subbasin has been subject to overdraft conditions by excessive groundwater pumping. Per the GSP, overdraft is estimated to be approximately 61,000 acre-feet/year for the region within the ETGSA boundary. The ETGSP presents the need for a sustainable yield in order to address overdraft conditions in the future for the entire region. The Eastern Tule GSA has outlined management actions that are to be taken by the City and the surrounding water purveyors to meet the groundwater sustainable yield goals set in the GSP. The sustainable goals are intended to balance average annual inflows and outflows of water in the groundwater basin by 2040 so that negative change in storage does not occur after 2040 ultimately avoiding undesirable and potentially catastrophic conditions of the groundwater subbasins. The current sustainable yield for the City is calculated as 1.01 ac-ft/acre of the City's UDB. The City's extraction volume within its native sustainable yield and total precipitation allocation is approximately 17,355 AFY which is about 5,655 MG. The sustainable yield is subject to revision every year due to current drought conditions, groundwater use and supply management measures. These measures ultimately seek to achieve the following criteria:

- Increase available water supplies.
- Optimize existing water supplies.
- Decreased consumptive use of non-sustainable groundwater supplies to mitigate overdraft.
- Groundwater levels sustained to sustainable management criteria quantified in this Plan.
- Reduction or cessation of subsidence near critical infrastructure.
- Stabilized water quality for agronomic and municipal beneficial uses.
- Funding for local water management.
- Improved collection and management of water related data within the Agency.

The implementation of projects and management actions are expected to provide a collective benefit for not only the City but the surrounding users. In general project types and management actions that are considered to be implemented in the future fall under four groups:

1. Water Supply Optimization: Optimizing efficiencies in existing surface water or groundwater operations.
2. Surface Water Development: Developing new surface water supplies.
3. Managed Aquifer Recharge and Banking: Developing recharge and groundwater banking projects.
4. Agricultural Land Retirement: Projects related to fallowing agriculture land.

The project and management action categories provide a roadmap in reaching a sustainable water resource utilization on a regional basis which ultimately trickles down to the individual user. The GSP will develop improved practices in distributing, integrating, exchanging, recharging, and managing water supplies to create a sustainable environment for groundwater resources for the City and the surrounding areas.

6.3.4 Historical Groundwater Pumping

> *10631 (b) …If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information shall be included in the plan:*
>
> *(3) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.*

The City of Porterville has historically relied on groundwater wells to supply its drinking water distribution system. The City has 36 active wells that are currently in service and are located throughout the City. Before 2014, the City's groundwater demand was much higher than it is today. For example, the groundwater supplied to the City averaged 4,150 MG between 2002 and 2014 and an average of 3,378 MG between 2015 and 2020. The severe drought of 2011 - 2017 drastically increased the City's conservation efforts ultimately leading to a decrease in groundwater pumping. The City's groundwater supply is summarized in Table 6.1.

Table 6.1 Retail: Groundwater Volume Pumped

☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
☑	All or part of the groundwater described below is desalinated.					
Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Add additional rows as needed						
Alluvial Basin	Tule Subbasin	3,222	3,345	3,515	3,422	3,647
Total		**3,222**	**3,345**	**3,515**	**3,422**	**3,647**

6.4 Surface Water

The City of Porterville does not import or purchase any raw surface water from the nearby Friant-Kern Canal or from adjacent irrigation district for their public drinking water distribution system. The City does have surface water allocations from the Pioneer Water Company, Porter Slough Ditch Company, and Porterville Irrigation District which they use for groundwater recharge or recharge credits as water is available.

6.5 Stormwater

The City of Porterville's storm water collection system is a separated from the sanitary sewer collection system. The City stormwater collection system conveys captured runoff to retention/recharge basins or directly to flood channels that run throughout the City. There are two scales of stormwater which are potentially relevant to the City's water supply portfolios, the first is the hydrological dependent surface water supplies from runoff in the region. The second is the volume of stormwater captured in the City's collection system. The benefit of stormwater in the grand scheme of the City's water supply portfolio is minimal, therefore it is not further evaluated in their assessment and the City does not reuse stormwater for their potable water supply.

6.6 Wastewater and Recycled Water

The UWMPA requires that the UWMP address the opportunities for development of recycled water, including the description of existing recycled water applications, quantities of wastewater currently being treated to recycled water standards, limitations on the use of available recycled water, an estimate of projected recycled water use, the feasibility of said projected uses, and practices to encourage the use of recycled water.

6.6.1 Recycled Water Coordination

> *10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.*

The City of Porterville 2020 Recycled Water Feasibility Study (RWFS) outlines various alternatives to provide recycled water for beneficial use to the surrounding area. The City has been coordinating with local irrigation and water districts investigating the potential demand for recycled water produced from the City's wastewater. The feasibility study concluded that the City's most beneficial use of recycled water was to provide three adjacent irrigation districts: Porterville Irrigation District (PID), Tea Pot Dome Irrigation District (TPDID), and Saucelito Irrigation District (SID) with tertiary treated disinfected recycled water to be used for unrestricted agricultural irrigation in exchange for surface water allocations. The City in turn plans to initiate the preliminary development of producing an advanced treatment recycled water facility in the near future as part of their Alternative Compliance Project for the California Central Valley (CV) Salts Program.

6.6.2 Wastewater Collection, Treatment Systems, and Disposal

> *10633. (a) (Describe) the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.*

The City of Porterville currently collects sanitary sewer from the City service area shown in Figure 3-1. The City owns and maintains approximately 2,728 manholes, 24 lift stations, 9,880 feet of force mains and 48.4 miles of gravity sewer pipes. The City also receives and treats wastewater from the Porter Vista Public Utilities District (PVPUD) from East Porterville.

The City of Porterville owns and operates the wastewater treatment facility (WWTF) which receives and treats all wastewater from residential, commercial, and industrial discharges within the City as well as from the Porterville State Hospital and the PVPUD. The WWTF is located west of the town center on the corner of N. Prospect St. and W. Morton Avenue near Veteran's Park. The City's WWTF was built in 1954 with a capacity of 1.8 million gallons per day (mgd) and upgraded to 4.0 mgd in 1978 to provide capacity for future growth and for the addition of existing developments which previously depended on individual disposal systems (septic tanks). In 1994 the WWTF was expanded to increase the average day maximum month flow (ADMMF) from 4.0 mgd to 8.0 mgd.

The City's WWTF Waste Discharge Requirement Order No. R5-2008-304 restricts the monthly average daily discharge to 5.3 mgd. The 2020 wastewater flows from the City's service area is summarized in Table 6.2. As shown in Table 6.2, the City contributed a total of 1,712 MG (4.69 mgd) of wastewater flow into the WWTP in 2020.

Table 6.2 Retail: Groundwater Volume Pumped

☑	There is no wastewater collection system. The supplier will not complete the table below.						
100	Percentage of 2020 service area covered by wastewater collection system (optional)						
	Percentage of 2020 service area population covered by wastewater collection system (optional)						
Wastewater Collection			Recipient of Collected Wastewater				
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2020	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party?	
City of Porterville	Metered	1,712	City of Porterville	City of Porterville Wastewater Treatment Facility	Yes	No	
Total Wastewater Collected from Service Area in 2020:		**1,712**					

The existing WWTF provides activated sludge secondary treatment. The primary treatment process starts with the influent wastewater from the sewer collections system to the headworks which screens out large debris such as rags, trash, and other obstructions. Screened wastewater is pumped from the headworks pump station and through a Parshall flume to measure flow and then to an aerated grit chamber to collect smaller grit-like particles in the system. From the aerated grit chambers wastewater is sent to the primary clarifiers allowing additional solids to settle and sum to float to the surface.

Following primary treatment process, wastewater is conveyed to the aeration basins where the activated sludge process begins. From the aeration basins, wastewater is then sent to the secondary clarifiers allowing the mixed liquor from the aeration basins to settle and it's either returned to the aeration basins or wasted to the dissolved air flotation thickeners (DAFT) for sludge thickening.

6.6.3 Wastewater Treatment and Discharge within Service Area

After the secondary treatment process, treated wastewater effluent is pumped to the reclamation area through a 4.5 miles pipeline to the southwest area of town center near the Porterville Municipal Airport where it is applied on the effluent irrigation areas or percolated into the ground via percolation basins. Sludge from the DAFT and primary clarifiers is sent to the anaerobic digester for processing to produce methane gas. From the digester, treated sludge is pumped from the biosolids transfer station located adjacent to the anaerobic digesters through a 4.5 mile pipeline to the sludge drying beds located near the City Municipal Airport. Once dry, biosolids are applied on the effluent irrigation areas as directed in the City's Biosolids Management Plan and annual Biosolids pre-application. Table 6.3 identifies the volume of treated wastewater either recycled or disposed of within the service area.

Table 6.3 Retail: Wastewater Treatment and Discharge within Service Area in 2020

☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.										
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number (optional)	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2020 Volumes				
							Wastewater Treated	Discharged Treated Wastewater(1)	Recycled Within Service Area(2)	Recycled Outside of Service Area	Instream Flow Permit Requirement
City of Porterville Wastewater Treatment Facility	City of Porterville Percolation Ponds and Reclamation Area	Adjacent to and southwest of the Porterville Airport	5D540107001	Land disposal	Yes	Secondary, Undisinfected	1,556	626	930	0	0
						Total	**1,556**	**626**	**930**	**0**	**0**

Notes:
(1) Discharged Treated Wastewater volume is identified as water that is discharged to the City's groundwater percolation basins.
(2) Recycled within Service Area volume is water that is used as agricultural irrigation to City owned farmland

6.6.4 Recycled Water System Description

10633. (c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use.

The City currently has a total of 880 acres available for biosolids application which includes a total of 630 acres within the reclamation area with the remaining 250 acres located in the City-owned dry-farmed area adjacent to the airport. Therefore, a total of 630 acres are available to receive effluent for irrigation and biosolids application. The City also utilizes approximately 48 acres of percolation ponds for groundwater infiltration which is also shown in. Figure 6.2 shows that average monthly effluent discharged to either the percolation ponds or the irrigation areas is approximately 130 MG. Typically, biosolid application and effluent irrigation is applied heavily during the summer months, May to September, and effluent is discharged to the percolation ponds for groundwater infiltration October through April.

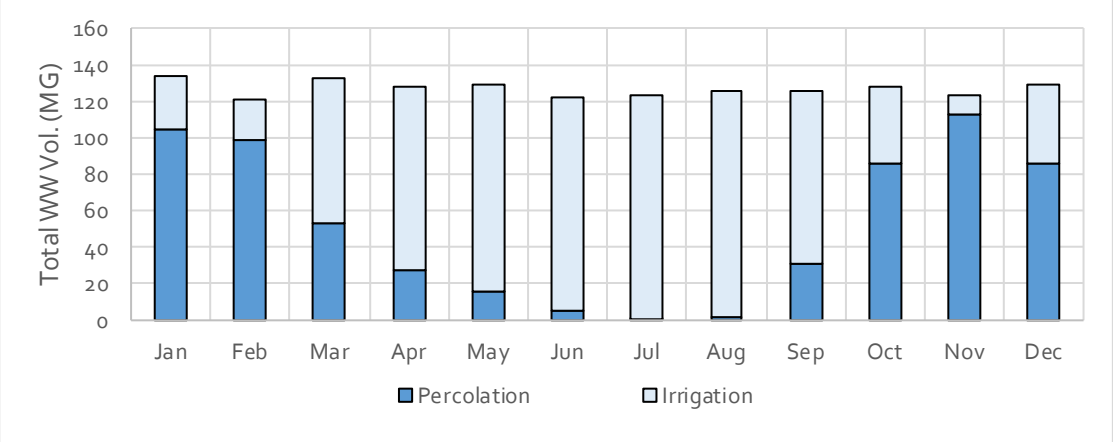

Figure 6.2 Average Treated Wastewater Effluent Discharged

6.6.4.1 Recycled Water Beneficial Uses

The range of beneficial uses of recycled water for the City are separated into five different reuse categories. Each category is listed below with a brief description in respect to the City's water system specifically.

Restricted Agricultural Reuse

Undisinfected secondary treated recycled water is discharged to City-owned agricultural property for the irrigation of fodder crops and percolation. This s the City's current recycled water program.

Unrestricted Agricultural

Water could be used to continue the City's existing recycled program as well as provide supply to districts close to the City.

Landscape Irrigation

Disinfected tertiary recycled water would be supplied to landscape irrigation users for domestic, commercial, and municipal properties within the vicinity of the existing WWTP or a recycled water distribution line.

Potable Reuse by Groundwater Replenishment

Recycled water meeting Title 22 requirements for advanced treatment beyond disinfected tertiary standards would be used for groundwater recharge by surface spreading in recharge basins. Groundwater percolation provides an environmental buffer with adequate retention time until groundwater is extracted using City's municipal wells.

Direct Potable Reuse

Potable reuse by raw water augmentation of the City's drinking water supply by comingling highly purified recycled water with surface water in a proposed surface water treatment plant. There is no environmental buffer to direct potable reuse, rather an engineered storage of the purified recycled water.

6.6.5 Potential, Current, and Planned Uses of Recycled Water

> *10633. (b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.*
>
> *(d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.*
>
> *(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.*

As discussed in Section 6.6.4 – Recycled Water System Description, the City currently percolates undisinfected secondary treated wastewater effluent to designated groundwater infiltration basins and uses the same effluent as fodder crop irrigation heavily during the summer months. The City recently completed a 2020 Recycled Water Feasibility Study which analyzed the potential recycled water market within the City. The result of this Study has provided a recommendation for the City to provide unrestricted agricultural irrigation supply water (disinfected tertiary treated recycled water) to nearby irrigation districts (PID, TPDID, SID). The current and projected recycled water uses are summarized in Table 6.4. The projected recycled water volumes are based on the City's 2020 Recycled Water Feasibility Study.

The City plans to implement a WWTP denitrification upgrade as well as produce tertiary treated disinfected recycled water for unrestricted agricultural irrigation within the next 5 to 8 years. For this UWMP, it is assumed that by 2025 the City will be producing recycled water, however this is subject to change in the coming years. It is expected that the recycled water will be supplied to surrounding irrigation districts for distribution to customers with surface water exchange agreements in place for groundwater recharge as well as water supply augmentation via surface water treatment in the future. The recycled water feasibility study analyzed the total production of recycled water based on the 2040 projected plant effluent of 8.84 mgd (3,227 MG or 9,920 AFY). The surrounding irrigation districts who have preemptively agreed to accept recycled water would each on their own be able to consume the full amount of projected flow on a month-to-month basis, however contractual agreement negotiations have not occurred. The recycled water use projection for 2020 from the 2015 UWMP is compared to the 2020 actual use in Table 6.5. In the interim, the City's recycled water effluent volume is expected to increase with population and development growth within the UDB.

Table 6.4 Retail: Recycled Water Direct Beneficial Uses within Service Area

☐	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.

Name of Supplier Producing (Treating) the Recycled Water:	City of Porterville
Name of Supplier Operating the Recycled Water Distribution System:	City of Porterville
Supplemental Water Added in 2020 (volume)	None
Source of 2020 Supplemental Water	N/A

Beneficial Use Type	Potential Beneficial Uses of Recycled Water	Amount of Potential Uses of Recycled Water	General Description of 2020 Uses	Level of Treatment	2020	2025	2030	2035	2040
Agricultural Irrigation	Agricultural Irrigation	930	Irrigation of oats, hay, alfalfa, and corn in the summer months	Secondary, Undisinfected	930				
Other (Provide General Description)	Groundwater Percolation	626	Percolation into 50 acre ponds during winter months	Secondary, Undisinfected	626				
Agricultural Irrigation	Provide tertiary treated recycled water to surrounding irrigation districts	0	Not used in or before 2020	Tertiary	0	2,230	2,522	2,854	3,227
Total					**1,556**	**2,230**	**2,522**	**2,854**	**3,227**

Notes:

(1) Assuming implementation of recycled water treated facility utilizing 100 percent of City Treated Effluent.

Table 6.5 2015 UWMP Recycled Water Use Projection Compared to 2020 Actual

☑	Recycled water was not used in 2015 nor projected for use in 2020. The supplier will not complete the table below.	
Use Type	2015 Projection for 2020	2020 Actual Use
Agricultural Irrigation	974	1,556
Total	974	1,556

6.6.6 Actions to Encourage and Optimize Future Recycled Water Use

> *10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier… and shall include the following:*
>
> *(g) A plan for optimizing the use of recycled water in the supplier's service area, including actions to facilitate the installation of dual distribution systems, to promote recirculating uses, to facilitate the increased use of treated wastewater that meets recycled water standards, and to overcome any obstacles to achieving that increased use.*

The use of a recycled water facility to provide a drinking water supply through either offsetting potable water use for landscape irrigation, groundwater augmentation, or surface water comingling and treating has been rejected by the City. Due to the location and reclamation limitations of the City, advanced treatment and purification is an uneconomical solution due to the discharge requirements of an advanced treatment system. Being said, as discussed in the Recycled Water Feasibility Study, the City has begun the process in developing an expanded recycled water program to create a reliable unrestricted agricultural irrigation water supply in exchange for reliable surface water right exchanges that can potentially be used for a groundwater basin or feed a surface water treatment plant in the future. Table 6.6 shows the City's near future projected recycled water production.

Table 6.6 Retail: Methods to Expand Future Recycled Water Use

☐	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
6.6.4 - 6.6.6	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use[1]
Unrestricted Agricultural Irrigation	The WWTP would be upgraded to provide disinfected tertiary recycled water. The water could be used to irrigation the City's reclamation area or supplied to neighboring irrigation districts.	2025	2,230
Total			2,230

Notes:
(1) Expected increase is not an increase from 2020 to 2025, this value is the volume of expected recycled water use in 2025.

6.7 Desalinated Water Opportunities

> *10631(d). Describe the opportunities for development of desalinated water, including, but not limited to, ocean water, brackish water, and groundwater, as a long-term supply.*

The City does not utilize any desalinated water for their domestic water supply.

6.8 Exchanges or Transfers

> *10631(d). Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.*

The UWMPA requires the UWMP to address the opportunities for development of short or long-term transfer or exchange opportunities.

6.8.1 Exchanges or Transfers

Water exchanges entail water being delivered by one water user to another water user, with the receiving water user providing water in return at a specified time or when the conditions of the parties' agreements are met. As outlined in the Recycled Water Feasibility Study, if the City is providing irrigation water supply to nearby irrigation districts, the opportunity for Friant-Kern Canal (FKC) surface water exchanges with those irrigation districts is a likely possibility. This surface water would be used to feed groundwater recharge basins or a surface water treatment plant. Presently, the City does not have any exchange agreements with adjacent irrigation districts between FKC surface water and recycled water, however negotiations are expected to begin in the near future.

6.8.2 Emergency Interties

The City does not have any emergency interties with surrounding agencies. As mentioned in Section 6.3, the City's source of water is solely from groundwater wells and does not have any supplementary drinking water supply to its system.

6.9 Future Water Projects

> *10631(f)… The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.*

As discussed in Section 6.6.5, the City intends to upgrade their existing WWTP and supporting effluent infrastructure to supply tertiary treated disinfected recycled water for unrestricted agricultural irrigation to nearby irrigation districts. This in turn will provide the opportunity for the City to enter into surface water exchange agreements with the irrigation districts surface water allocation for groundwater recharge from either the Friant Kern Canal. Ultimately this exchange enables the City to actively increase groundwater recharge efforts and potentially construct a surface water treatment plant in the future. Additionally, the City's anticipates the installation of three new wells on the west side of the UDB to provide an additional capacity up to 3.3 mgd to the potable water distribution system to reduce the supply deficit between the

maximum day demand (MDD) and the existing firm supply. The City's IMP also investigated the augmentation of their existing water supply portfolio with the addition of 12 new wells within the water service area to meet the 2040 projected future maximum day demands. The City plans to utilize these future water projects regardless or normal or consecutive drought years to expand their water system within their UDB to meet daily demands within their water service area. The City investigated the feasibility of a direct potable reuse water supply alternative in their 2020 RWFS. DPR includes combining highly treated recycled water with potable groundwater water to augment drinking water supply directly. The high cost of advanced treatment and the requirement to dispose of RO concentrate eliminated this alternative from the City's water supply portfolio alternatives. Table 6.7 presents the City's expected future water supply programs and their anticipated implementation time.

Table 6.7 Retail: Expected Future Water Supply Projects or Programs

☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.
6.6.4 - 6.6.6 & 6.9	Provide page location of narrative in the UWMP

Name of Future Projects or Programs	Joint Project with other suppliers?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier
	Y/N	Name of Agencies				
Add additional rows as needed						
Recycled Water	No	N/A	Tertiary treated disinfected unrestricted agricultural irrigation	2024 - 2025	All Year Types	0
Surface Water Exchange	Yes	Porterville Irrigation District Saucelito Irrigation District Teapot Dome Water District	Assuming a 1:1 exchange ratio of recycled water to surface water	TBD	All Year Types	1,556 – 3,227(1)
Water Supply Improvements Installation of three (3) New Wells on west side	No	N/A	Install new groundwater extraction wells within City UDB(2)	2021	All Year Types	5.1 mgd
2040 Water Supply Recommendations Installation of up to 12 new wells	No	N/A	Install up to 12 new wells to meet the 2040 future demand(2)	TBD	All Year Types	20.4 mgd

Notes:
(1) Volumes listed includes the range of flows from 2020 to 2040.
(2) Porterville Integrated Master Plan Chapter 8 – Utility System Evaluation and Proposed Improvements

6.10 Summary of Existing and Planned Sources of Water

> *10631 (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following…*
>
> *(b)(2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.*
>
> *(h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available. The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five-year increments, and during various water-year types in accordance with subdivision (f). An urban water supplier may rely upon water supply information provided by the wholesale agency in fulfilling the plan informational requirements of subdivisions (b) and (f).*

6.10.1 Description of Supplies

As discussed in Section 6.3, 6.4, and 6.5, the City's main and only source of potable water is groundwater with undisinfected secondary treated recycled water used as restricted agricultural irrigation for fodder crops as a means of groundwater recharge and effluent disposal. In the future, the City Plans to expand its water supply portfolio by upgrading their existing WWTP to full tertiary treatment with disinfection to provide recycled water for unrestricted agricultural irrigation to surrounding irrigation districts in exchange for surface water rights for groundwater recharge and/or surface water treatment.

6.10.2 Quantification of Supplies

The actual source and volume of water for the year 2020 is presented in Table 6.8. With the implementation of Sustainable Groundwater Management Act (SGMA) and the acceptance of the ETGSP, groundwater supply availability in the Tule subbasin is quantified by the City's sustainable yield. As discussed in Section 6.3.2, the sustainable yield is the volume of water the City can safely extract from the aquifer without causing excessive overdraft conditions in the future. The City's 2020 Integrated Master Plan Water Supply Assessment investigates detailed water supply portfolio alternatives the City should consider in the future in order to diversify and expand its water supply. Presently, the City's groundwater volume is equivalent to the sustainable yield calculated in section 6.3.3. The City's projected 2040 extraction volume within its native sustainable yield and total precipitation allocation is approximately 17,355 AFY (5,655 MG) which is about 2,008 MG (6,162 AF) above existing pumping conditions. The recycled water quantification is simply the treated wastewater effluent volume that is available for percolation into the City's groundwater recharge ponds. The surface water (not desalinated) is the City's total surface water allocations from adjacent irrigation districts. Chapter 7 further discusses the supply and demand balance considering the supply fluctuations from drought conditions and variations in demand.

Table 6.8 Retail: Water Supplies — Actual

Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume	Water Quality	Total Right or Safe Yield
Groundwater (not desalinated)	Tule Groundwater Subbasin	3,647	Drinking Water	5,655
Recycled Water	Disinfected Secondary Treated effluent from WWTP	1,556	Recycled Water	626(1)
Surface Water (not desalinated)	Surface Water Allocation from Irrigation Districts	728	Other Non-Potable Water	664
Total		**5,931**		**6,945**

Notes:
(1) The Total or Safe Yield for recycled row lists the amount of recycled water that was percolated by the City in 2020

The projected water supply in 5-year increments is included in Table 6.9. For the City, the available water supply is projected based on estimated future demands. As discussed in Section 6.8, the surface water exchanges are assumed to be a 1:1 volume exchange ratio of tertiary treated disinfected recycled water to Friant Kern Canal delivered surface water, therefore as shown in Table 6.9, the recycled water volume is not listed since that would not offset potable water supply but would enable a surface water exchange. All surface water will be utilized in groundwater recharge.

Table 6.9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply Report to the Extent Practicable *Reasonably Available Volume*(1)				
		2025	2030	2035	2040	2045 (opt)
Groundwater (not desalinated)	Strictly groundwater pumping using existing City wells	5,655	5,655	5,655	5,655	-
Surface water (not desalinated)	From 1:1 exchange with nearby Irrigation Districts from Surface Water and Recycled Water Exchange. Not Treated, would be available for groundwater recharge	2,230	2,522	2,854	3,227	-
Surface water (not desalinated)(2)	Purchased for groundwater percolation from PWC and PSDC	664	664	664	664	-
Total		**8,549**	**8,841**	**9,173**	**9,546**	**-**

Notes:
(1) The Reasonably Available volume was determined from the City of Porterville 2020 Integrated Master Plan groundwater Sustainable yield outlined in the ETGSP. This volume is subject to change over the coming years, however projected to 2040, remains at 5,655 MG per year or 17,355 AFY. The surface water via exchange with nearby irrigation districts is an assumed 1:1 exchange ratio with projected recycled water production volumes listed in the City's RWFS.
(2) Surface water allocation through Porter Slough Ditch Company, Porterville Irrigation District, and Pioneer Water Company

6.11 Special Conditions

This section describes any special conditions that could potentially affect the City's water supply presently or in the future.

6.11.1 Climate Change Effects

Increasing temperatures, drought conditions, and population growth will likely increase water demands for the City in the future. To augment the groundwater supply working towards both their GSP and General Plan goals, the City currently recharges treated wastewater effluent into groundwater percolation basins at their reclamation site near the municipal airport. In the future, the potential for surface water exchanges with nearby irrigation districts will add additional supply for groundwater recharge and potentially surface water treatment. Effects from climate change can potentially decrease the availability of surface water in the FKC given the allocation volumes therefore reducing the availability of surface water for the City's use and further reducing supplies To investigate the effects of climate change on the projected averages of hydrologic parameters such as precipitation, snowfall, surface runoff, and temperature, the Cal-Adapt extended drought scenario tool was used to explore possible impacts resulting from climate change.

As discussed, the City's supply is completely dependent upon seasonal hydrologic conditions via precipitation in the valley or accumulated snowpack in the Sierra Nevada mountains. Cal-Adapt Extended Drought tool displays hydrologic data projected to specific date ranges of this upcoming century. Early Century is considered 2023 to 2042 and late century 2051 to 2070. This tool explores data for two 20-year drought scenarios, earlier and latter part of the century, derived from meteorological and hydrological simulations. Cal Adapt includes projected max/min temperatures, precipitation, evapotranspiration, snow water equivalent, and runoff values for a period of an extended drought period of up to 20 years. Data from the Cal-Adapt Extended Drought Tool was analyzed to summarize the potential impacts on water supplies related to climate change with respect to historical data. In summary, the model shows the effects from climate change can likely reduce the annual precipitation averages in future. Table 6.10 shows the projected hydrologic parameters listed in the model for the City's water service area. Appendix J includes additional informational outputs from the Cal-Adapt Extended Drought Simulation Tool.

Table 6.10 Cal-Adapt Hydrologic Parameter Projections

Hydrologic Parameter	Early Century Drought (2023 – 2042)	Late Century Drought (2051-2070)	Observed Historical
Max. Temperatures (°F)	82.0	85.6	77.2
Min. Temperatures (°F)	53.1	56.3	49.0
Precipitation (inches)	7.7	7.6	11.0
Evapotranspiration (inches)	5.5	6.6	9.4
Snow Water Equivalent (inches)	0.0	0.0	0.0
Runoff (inches)	0.5	0.5	0.8

6.11.2 Regulatory Conditions and Project Development

As discussed with the implementation of SGMA and the ETGSP, the City must strive to extract groundwater within their sustainable yield volume. Presently, the City is well beneath the quantified sustainable yield volumes and plans to expand groundwater production efforts for system reliability and augmentation to meet existing and future maximum day demands. Additionally, as development within the City continues, all new water service connections will require meters to monitor consumption and demands.

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Chapter 7

WATER SYSTEM RELIABILITY AND DROUGHT RISK ASSESSMENT

The UWMPA requires that the UWMP address the reliability of the agency's water supplies. This includes supplies that are vulnerable to seasonal or climatic variations. In addition, an analysis must be included to address supply availability in a normal year, a single-dry year and in five-consecutive years of drought.

> *10635 (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.*

7.1 Constraints of Water Sources

> *10631 (b)(1) A detailed discussion of anticipated supply availability under a normal water year, single dry year, and droughts lasting at least five years, as well as more frequent and severe periods of drought, as described in the drought risk assessment. For each source of water supply, consider any information pertinent to the reliability analysis conducted pursuant to Section 10635, including changes in supply due to climate change*

There are two aspects of supply reliability that can be considered. The first relates to immediate service needs and is primarily a function of the availability and adequacy of the supply facilities. The second aspect is climate-related and involves the availability of water during mild or severe drought periods. This section examines the reliability of the water supply available to the City.

7.1.1 Water Supply Quality

Appendix H contains the Annual Consumer Confidence Report (CCR) for the City's service area for the year 2020. The City's groundwater quality has been consistently good over the last ten years with the exception of moderately high nitrate concentrations in some areas due to historical irrigation practices. The City shallow wells (less than 300 feet deep) show increased nitrate concentrations over the last 12 years, however the elevated levels ranged between 3.6 to 6.8 milligrams per liter (mg/L) which is still below the MCL. As for the deeper City wells,

(>300 feet), the nitrate concentrations ranged from 1 to 5.5 mg/L, however it is expected that the increased influence in nitrate concentration is from downward flow of shallow groundwater to greater depths when water levels were deeper. The City has the opportunity to improve the groundwater quality by avoiding construction of new wells near the surface water features throughout the City to enable effective groundwater recharge as well as groundwater recharge from surface water application on sandy soil areas typically adjacent to the Tule River.

7.1.2 Climate

The constraints to the City's water source is discussed in Section 4.6 and 6.3.

7.1.3 Potential Alternative Sources

As discussed in Chapter 6, presently the City's existing water supply is sourced solely from groundwater. The City also received surface water allocations from the Pioneer Water Company, Porter Slough Ditch Company, and Porterville Irrigation District that are utilized for groundwater recharge. When surplus surface water allocations are available the City purchases additional surface water from nearby irrigation districts for additional groundwater recharge. The City's IMP outlines the need for the City to increase its groundwater water supply through expansion of their existing well system as well as groundwater recharge from surface water right exchanges with adjacent irrigation districts. Ultimately, the access to surface water gives the City the opportunity to investigate a surface water treatment plant in the future. As discussed in Section 6.9, the City rejected the DPR water supply alternative in their RWFS.

7.2 Water Supply Reliability by Type of Year

This section considers the City's water supply reliability during three water scenarios: average year, single-dry year, and five-consecutive-year drought. An average year is also referred to as a "normal" year.

These scenarios are defined as follows:

- **Average year:** a year, or an averaged range of years, that most closely represents the average water supply available to the City. Generally, a year that represents the average precipitation on record. Based on the historic DWR precipitation records from 1988 to 2020, calendar year 2015 best characterizes average year condition.
- **Single-dry year:** The year that represents the lowest water supply available to the City in a single year. Based on historic DWR precipitation records from 1988 to 2020, the calendar year 2013 best characterizes single dry year conditions.
- **Five-Consecutive-Year Drought:** the period that represents the driest five-year historical sequence for the City. Generally considered to be the lowest average runoff for a five-consecutive-year period. Based on historic DWR precipitation records from 1988 to 2020, the period from 2011 through 2015 best characterizes the five-year consecutive drought conditions.

7.2.1 Methodology

In the event of single and multiple dry years, reduced rainfall results in less groundwater recharge. The ETGSP has determined sustainable yields for the time being of the City of Porterville with respect to other agencies who utilize the Tule groundwater basin. The ETGSP determines the City's sustainable yield from the Tule groundwater is about 17,355 AFY (5,655 MG), this volume is subject to change annually based on current drought conditions and

City usage. The volume is assumed to be projected to 2040 to represent the City's sustainable yield to 2040. Currently and historically, the City's demand is below the sustainable yield limit. In past period of drought, the City has met water demands with their existing groundwater supply, however water restrictions were set in place to reduce impacts on the existing well and distribution infrastructure and to alleviate strained groundwater elevations from dropping below existing wells.

7.2.2 Basis of Water Year Data

The specific years identified for average, single-dry, and five-consecutive-year drought presented in Table 7-1 were developed based on historical DWR runoff records for the City of Porterville and the availability of City's records. The historic per capita demand is shown in Figure 7.1.

Table 7.1 Retail: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year	Available Supplies if Year Type Repeats	
		☐	Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____
		☑	Quantification of available supplies is provided in this table as either volume only, percent only, or both.
		Volume Available	Percent of Average Supply
Average Year	2015	3,117	100
Single-Dry Year	2013	4,276	137%
Consecutive Dry Years 1st Year	2011	3,955	127%
Consecutive Dry Years 2nd Year	2012	4,220	135%
Consecutive Dry Years 3rd Year	2013	4,276	137%
Consecutive Dry Years 4th Year	2014	3,877	124%
Consecutive Dry Years 5th Year	2015	3,117	100%

The years chosen to represent the dry-year scenarios were determined by examining precipitation records from DWR Success Lake (SCC) precipitation gage with historical data ranging from 1988 to 2020. The total precipitation average of the historical data shows 2015 as an average year for the City's water supply. The per capita water demand in 2015 was 130 gpcd. Figure 7.1 shows the average demand from 2015 to 2020 is around 130 gpcd as well as conservation efforts and customer water use behavior has changed as a result of the last major drought period from 2011 to 2017. 2013 shows the lowest single year precipitation therefore representing the single-dry year type with a per-capita water demand of 179 gpcd. The single dry year demand shows to be approximately 27-percent higher than the average per capita demand as a result of increased water usage from dry conditions. The historical precipitation records show the lowest average consecutive precipitation between 2011 and 2015. The average per capita demand between 2011 and 2015 starts at 163 gpcd in 2011 and peaks at 170 gpcd in 2013 and ending at 130 gpcd in 2015 as conservation efforts were implemented by the City to reduce demands. The City's demand has historically been covered completely by groundwater through all year types with fluctuation in demands as conservation efforts are set in place.

For conservation planning, demands were not increased for the single dry-year since the value in 2013 is significantly higher than the present per capita demand between 2015 and 2020. Additionally for the five-year consecutive dry condition, demands were not reduced due in part they are much higher than the present day demands and already represent a conservative planning approach to the City.

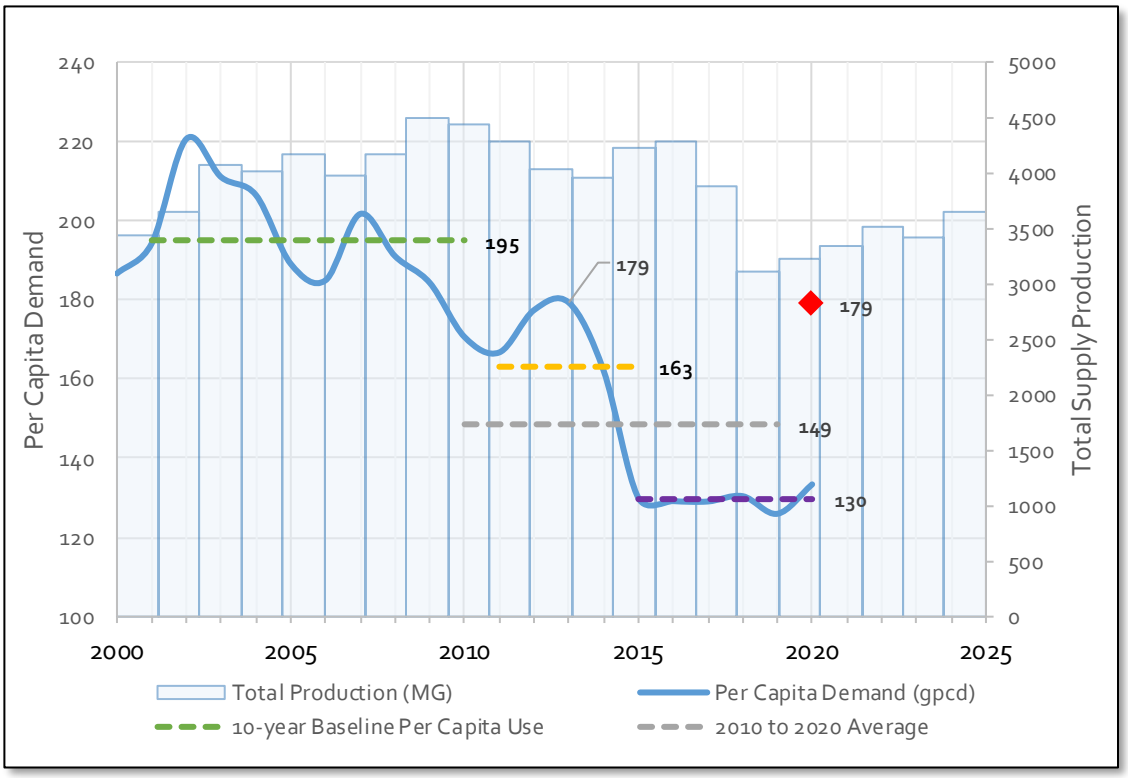

Figure 7.1 Average Demand from 2015 to 2020

7.3 Water Service Reliability Assessment

> *10635(a). Every urban water Supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and a drought lasting five consecutive water years. The water service reliability assessment shall be based upon the information compiled pursuant to Section 10631, including available data from state, regional, or local agency population projections within the service area of the urban water supplier.*

The projected demand and supplies are compared in 5-year increments in Table 7.2, Table 7.3, and Table 7.4.

7.3.1 Water Service Reliability - Normal Year

Table 7.2 provides an estimate of the projected normal year supply and demand totals. Demands are projected to increase to 8,322 MG in 2040. Under average year conditions the City will meet the majority of their demand with groundwater up to the sustainable yield allocation volume of the basin as well as the anticipated groundwater recharge through available surface water exchanges with nearby irrigation districts and surface water allocations already possessed by the City. The demand total for Table 7.2 shows the average year demand for only the potable water demand with the existing groundwater supply in addition to surface water recharge.

Table 7.2 Retail: Normal Year Supply and Demand Comparison – Potable and Non-Potable

	2025	2030	2035	2040
Supply Totals(1)	8,542	8,834	9,166	9,539
Demand Totals(2)	5,731	6,497	7,337	8,322
Difference	2,812	2,337	1,829	1,217

Notes:
(1) Supply total assumes a 1:1 surface water exchange with recycled water with surrounding irrigation districts utilizing projected recycled water volumes as shown in the 2020 RWFS.
(2) Demands include drinking water from Table 4-3

7.3.2 Water Service Reliability - Single-Dry Year

Table 7.3 provides an estimate of the projected single-dry year supply and demand totals. Demand reductions due to water shortage stage rationing measures are not included in the single-dry year demand estimates.

As described in Section 7.2.2, the single-dry year demand was not increased since it is 27-percent greater than the average year and the 2015 to 2020 average water demand, therefore presenting an automatic conservative estimate with respect to current demands. This planning demand is consistent with the City's 2020 IMP per capita water demand.

The surface exchanges were assumed to be 100 percent allocation from the FKC being that years prior to this single-dry year were hydrologically normal therefore reservoir levels were able to accommodate United States Bureau of Reclamation (USBR) water contractor demands. The surface water volume was based on a 40 percent ratio of extracted groundwater to metered wastewater effluent. The recycled water volumes were directly exchanged for surface water through the FKC to be used for groundwater recharge augmenting the basin. With the augmented groundwater supply, the City has a sufficient available volume to meet projected demands during the single dry year condition.

Table 7.3 Retail: Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040
Supply Totals(1)	8,345	8,589	8,862	9,168
Demand Totals(2)	4,789	5364	6,007	6,728
Difference	3,556	3,225	2,855	2,440

Notes:
(1) Supply total assumes a 1:1 surface water exchange with recycled water with surrounding irrigation districts utilizing projected recycled water volumes as shown in the 2020 RWFS and a 100 MG per year groundwater recharge similar to historical City practices.
(2) Demands include potable water only with a 12% growth rate.

7.3.3 Water Service Reliability – Five-Consecutive-Year Drought

Table 7.4 provides an estimate of the projected five-consecutive-year drought supply and demand totals. Similar to the single dry year, the water demands were not adjusted since they represent a conservative estimate in comparison to the City's present day water use. The water demand during consecutive dry years is represented by the water demand between 2011 and 2015. The highest demand increase was a 6 percent increase from 2011 to 2012 and a 1 percent increase from 2012 to 2013. From the third year (2013) demands significantly reduce by 10 percent in above 2014 and by 20 percent in 2015.

Since the City has historically met all water needs regardless of hydrologic condition by groundwater and are still below their sustainable yield, the supply for all years included groundwater extraction to meet demand and groundwater recharge from the City's existing allocation and surface water exchanges for recycled water with the nearby irrigation districts to increase supply. Similar to section 7.3.2, the surface water exchange volume was assumed to be 40 percent of the extracted groundwater and exchanged at a 1:1 ratio with surface water. It was assumed that the FKC allocation for surface water was 100 percent for the first year, 80 percent for the second year, 75 percent for the third year and was reduced to 50 percent for the fourth and fifth years. It was also assumed that groundwater recharge followed the same allocations as surface water percentages and was a portion of the City's total allocation of 664 MG.

From the data shown in Figure 7.1, the reduction in demands between 2013 and 2015 is from the implementation of conservation efforts set by the City and continue to progress with a similar average demand to 2020 as a result of passive water conservation efforts by the customers.

Table 7.4 Retail: Multiple Dry Years Supply and Demand Comparison

		2025	2030	2035	2040
First Year	Supply Totals	8,542	8,834	9,166	9,539
	Demand Totals	4,430	4,961	5,556	6,223
	Difference	**4,113**	**3,873**	**3,610**	**3,316**
Second Year	Supply Totals(1)	8,012	8,245	8,511	8,809
	Demand Totals	4,726	5,294	5,929	6,640
	Difference	**3,285**	**2,952**	**2,582**	**2,168**
Third Year	Supply Totals(1)	7,879	8,098	8,347	8,626
	Demand Totals	4,789	5,364	6,007	6,728
	Difference	**3,090**	**2,734**	**2,340**	**1,898**
Fourth Year	Supply Totals(1)	7,215	7,361	7,528	7,714
	Demand Totals	4,342	4,863	5,447	6,101
	Difference	**2,873**	**2,498**	**2,081**	**1,613**
Fifth Year	Supply Totals(1)	7,215	7,361	7,528	7,714
	Demand Totals	3,491	3,910	4,379	4,905
	Difference	**3,724**	**3,451**	**3,148**	**2,809**

Notes:
(1) FKC allocations to water contractors: 100 percent first year, 80 percent second year, 75 percent third and 50% fourth, and fifth years. Groundwater recharge from surface water allocations from Porterville Irrigation District, Pioneer Water Company, and Porter Slough Ditch Company

7.3.4 Description of Management Tools and Options

10620(f). An urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.

Currently, the City of Porterville solely utilizes local groundwater supplies to meet potable water demands. The City plans to continue to use groundwater as its main water supply with groundwater recharge using surface water in the near future. Details of the groundwater recharge potential is discussed in Section 6.8 and 6.9

7.3.5 Seismic Risk Assessment and Mitigation Plan

> *10632.5(c). An urban water supplier may comply with this section by submitting, pursuant to Section 10644, a copy of the most recent adopted local hazard mitigation plan or multihazard mitigation plan under the federal Disaster Mitigation Act of 2000 (Public Law 106-390) if the local hazard mitigation plan or multihazard mitigation plan addresses seismic risk.*

The Central San Joaquin Valley has an unlikely chance of seismic risk due to the soil type and the vicinity of active faults, however the risk is still possible for a significant seismic event to affect the City's water assets. The Kern Canyon Fault Zone and the Owens Valley Faults are the only two fault systems that run through Tulare County that are reported by the United States Geological Survey (USGS), however the Kern Canyon Fault has been inactive since the 1930's. Additionally, the State's largest fault system, the San Andres Fault, is not within Tulare County, but is nearby the western border. The largest earthquake ever recorded nearest to the City was a magnitude 5.0 in 1915. Being within Tulare County, Porterville is included within the Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP) as a participating agency.

The MJLHMP identifies Tulare County vulnerabilities to earthquakes as small since the County is not in a high hazard area for earthquakes The MJLHMP provides mitigation goals and actions for participating communities within the Plan. The 5 goals of the MJLHMP are listed below:

- Goal 1: Protect life, property, and reduce potential injuries from natural, technological, and human-caused hazards.
- Goal 2: Improve public understanding, support and need for hazard mitigation measures
- Goal 3: Promote disaster resistance for the County's natural, existing, and future built environment.
- Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.
- Goal 5: Enhance the County's ability to effectively and immediately respond to disasters.

The mitigation measures associated with Earthquake risks and their corresponding hazard mitigation goals are listed in Table 7.6 below. The entire hazard mitigation list for all hazards are included in Table 6.2 of the MJHMP in Appendix L.

Table 7.5 County-Specific Mitigation Strategies for Earthquake Hazards

Goal	Strategy Number	Mitigation Strategy
1	1-1	Create a GIS-based pre-application review for new construction and major remodels of residential and/or non-residential structures in hazard areas, such high and/or very high wildfire areas.
1	1-2	Continue to integrate the Tulare County MJLHMP, in particular the hazard analysis and mitigation strategy sections, into local planning documents, including general plans, emergency operations plans, and capital improvement plans.
1	1-3	Permit development only in areas where the potential danger to the health and safety of people and property can be mitigated to an acceptable level.
1	1-4	Continue to designate areas with a potential for significant hazardous conditions for open space, agriculture, and other appropriate low intensity uses.
1	1-5	Except as otherwise allowed by State law, ensure that all new buildings intended for human habitation are designed in compliance with the latest edition of the California Building Code, California Fire Code, and other adopted standards based on risk (e.g., seismic hazards, flooding), type of occupancy, and location (e.g., floodplain, fault).
1	1-7	Continue to evaluate areas to determine levels of earthquake risk.
1	1-8	Continue to discourage construction and grading on slopes in excess of 30%
1	1-9	Request Federal and State financial assistance to implement corrective seismic safety measures required for existing County buildings and structures.
1	1-10	Do not permit any structure for human occupancy to be placed within designated Earthquake Fault Zones (pursuant to and as determined by the Alquist-Priolo Earthquake Fault Zoning Act; Public Resource code, Chapter 7.5) unless the specific provision of the Act and Title 14 of the California Code of Regulations have been satisfied.
1	1-11	Discourage the location of new schools in areas designated for agriculture, unless the School District agrees to the construction and maintenance of all necessary infrastructure impacted by the project.
1	1-43	Continue to create, revise, and maintain emergency plans for the broad range of natural and human-made disasters and response activities that could foreseeably impact the County. This shall include, but not be limited to, flooding, dam failure, extreme weather, evacuation/transportation, mass care and shelter, and animal evacuation and sheltering.
1	1-60	Seismically retrofit or replace County and local ramps and bridges that are categorized as structurally deficient by Caltrans, are located in high ground shaking areas, and/or are necessary for first responders to use during and/or immediate after a disaster or emergency.
2	2-1	Continue to promote awareness and education among residents regarding possible natural hazards, including soil conditions, earthquakes, flooding, fire hazards, and emergency procedures.

Goal	Strategy Number	Mitigation Strategy
4	4-3	Coordinate emergency response with local, State, and Federal governmental agencies, community organizations, volunteer agencies, and other response partners during emergencies or disasters using the California Standard Emergency Management System and the National Incident Management System.
4	4-4	Participate in established local, State, and Federal mutual aid systems. Where necessary and appropriate, the County shall enter into agreements to ensure the effective provision of emergency services, such as mass care, heavy rescue, hazardous materials, or other specialized function.
5	5-2	Require, where feasible, road networks (public and private) to provide for safe and ready access for emergency equipment and provide alternate routes for evacuation.

7.4 Drought Risk Assessment

> *10635(b) Every urban water supplier shall include, as part of its urban water management plan, a drought risk assessment for its water service to its customers as part of information considered in developing the demand management measures and water supply projects and programs to be included in the urban water management plan. The urban water supplier may conduct an interim update or updates to this drought risk assessment within the five-year cycle of its urban water management plan update. The drought risk assessment shall include each of the following…*
>
> *(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period. [Emphasis added]*
>
> *(4) Considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.*

CWC Section 10635(b) is a new requirement for the 2020 UWMPs where suppliers are required to prepare a DRA with descriptions of data and methods used, basis for the supply shortage conditions, determination of the reliability of sources, and a comparison of the total water supplies and uses during the drought. The DRA will be submitted every five years in addition to conducting an annual water supply and demand assessment. Evaluation for the DRA is based on the five dry years with consideration of climate changes, regulations, and other local criteria. In the event of stressed hydrologic conditions, suppliers will consider management of their water supplies in relation to customer usage, identify potential system vulnerabilities, and provide explanations of assumptions and decisions on which the analysis was based.

A summary of the City's water supply drought risk assessment from 2021 through 2025 is summarized in Table 7.6. As discussed, the City presently and historically has met all of their demands from groundwater and actively uses surface water allocations for groundwater recharge. Groundwater recharge is not assumed to be a WSCP planned action since it's the City's status quo. Additionally, the City is still well below their sustainable yield value as indicated in the ETGSP therefore there is sufficient supply to meet anticipated demands within the next five years. The DRA report is included in Appendix J, which included additional details regarding potential supply vulnerabilities.

Table 7.6 Five-Year Drought Risk Assessment Tables to Address CWC Section 10635(b)

2021	Total
Gross Water Use	3,738
Total Supplies	7,882
Surplus/Shortfall without WSCP Action	4,144
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	4,144
2022	**Total**
Gross Water Use [Use Worksheet]	3,832
Total Supplies [Supply Worksheet]	7,837
Surplus/Shortfall without WSCP Action	4,005
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	4,005
2023	**Total**
Gross Water Use [Use Worksheet]	3,927
Total Supplies [Supply Worksheet]	7,856
Surplus/Shortfall w/o WSCP Action	3,928
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	3,928
2024	**Total**
Gross Water Use [Use Worksheet]	4,026
Total Supplies [Supply Worksheet]	7,791
Surplus/Shortfall without WSCP Action	3,665
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	3,665

2025	Total
Gross Water Use [Use Worksheet]	4,126
Total Supplies [Supply Worksheet]	7,215
Surplus/Shortfall without WSCP Action	3,089
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	3,089

7.5 Regional Supply Reliability

> *10620 (f) an urban water supplier shall describe in the plan water management tools and options used by that entity that will maximize resources and minimize the need to import water from other regions.*

As described in Chapter 6, the City does not utilize imported water within its service area for domestic use. The City uses imported surface water only for groundwater recharge. In the near future, the City intends to utilize imported surface water exchanges with recycled water for groundwater augmentation projects. Currently, negotiations and agreements with nearby irrigation districts have not been initiated. The future groundwater recharge efforts by the City are intended to reduce the impacts to the groundwater basin from over drafting conditions and to increase the reliability of the groundwater basin for continued use by the City in the future. The potential to utilize the surface water received via exchanges may also be utilized for a surface water treatment facility in the future by the City to further diversify their water supply portfolio.

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Chapter 8

WATER SHORTAGE CONTINGENCY PLAN

In response to the severe drought of 2012-2016, new legislation in 2018 created a Water Shortage Contingency Plan (WSCP) mandate replacing the water shortage contingency analysis under former law. The new requirements are more prescriptive to drive consistency throughout California.

The City has an existing Water Conservation Plan (WCP), which serves as the WSCP and is a stand-alone document. The WCP is included in Appendix I of this Urban Water Management Plan (UWMP). Because the WSCP is separate from the UWMP, it can be amended as needed without amending the 2020 UWMP.

To fulfill the requirements of California Water Code (CWC) § 10632, the WSCP includes the following required elements in addition to details unique to the City's supply, location, and service area characteristics:

- Water Supply Reliability and Drought Risk Assessment.
- Annual Water Supply and Demand Assessment Procedures.
- Six Standard Water Shortage Levels.
- Shortage Response Actions.
- Communication Protocols.
- Compliance and Enforcements.
- Legal Authorities.
- Financial Consequences of WSCP Activation.
- Monitoring and Reporting.
- WSCP Refinement Procedures.
- Special Water Feature Distinction.
- Plan Adoption, Submittal, and Availability.

8.1 Water Supply Reliability and Drought Risk Assessment

A Drought Disk Assessment (DRA), which includes the following components, is considered as part of the water supply reliability assessment:

- Description of the data, methodology, and basis for the supply shortage conditions for a drought period lasting five consecutive water years, starting from the year following the assessment year.
- Determination of the reliability of each water supply source under a variety of water shortage conditions.
- Total available water supply sources compared with total projected water use for the drought period.
- Considerations of historical drought hydrology, plausible changes to projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.

Chapter 7 of the UWMP provides a DRA based on five consecutive dry years from 2021 through 2025. The DRA shows that the highest projected demand for both the single dry year and multiple dry year scenarios was 6,728 MG in 2040. With the City's continuous groundwater recharge activities, passive water conservation efforts already implemented in their conservation mandates, and the anticipated expansion of their surface water allocation with the upgrade of their existing WWTP to produce recycled water for unrestricted agricultural use, the City's supply portfolio is well beyond the projected demand and falls within their anticipated sustainable yield of 5,655 MG. The City presently and historically has met all their demands from groundwater. Additionally, the City is still well below their sustainable yield value and actively augments their supply by groundwater recharge. There is sufficient supply to meet projected demands within the next five years. The DRA report, included in Appendix J of the UWMP, includes additional details regarding potential supply vulnerabilities.

8.2 Annual Water Supply and Demand Assessment Procedures

> *10632.1 An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan…*
>
> *10632(a)(2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following: (A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability. (B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following…*

As required by CWC § 10632.1, the City must conduct a Water Supply and Demand Assessment (Annual Assessment) and must submit an annual Water Shortage Assessment Report (WSAR) based on that Annual Assessment on or before July 1 of each year starting in 2022. The focus of the Annual Assessment is based on actual forecasted near-term water supply conditions (over the next 12 months) to ensure appropriate shortage response actions are triggered in a timely manner with expected outcomes. The annual WSAR must contain information on any anticipated shortages, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the City's WSCP. The Annual Assessment will be conducted using the procedures and methods detailed in Appendix Q of the Department of Water Resources (DWR) UWMP guidance document. As required by CWC § 10632(a)(2), the procedures must include the elements detailed in the following sections.

8.2.1 Decision-Making Process

The City's decision-making process for determining water supply reliability each year will be included in the WSAR:

1. City staff makes the determination that water supply conditions warrant a change in water shortage level.
2. City staff presents a request to the City Council for their approval of the change in water shortage level.

3. City staff monitors production capacity in order to make a determination on recommendations for moving from one water shortage level to the next. The decision to change water shortage levels will be based on a combination of surface water supplies, weather conditions, trends in water usage, groundwater levels, and well yield.
4. If efforts to reduce consumption in one water shortage level are not sufficient, then the next water shortage level is implemented. This progression continues until the highest water shortage level is reached.

8.2.2 Data Inputs and Water Supply Reliability Assessment Methodology

The following data inputs and assessment methodologies used to evaluate the City's water supply reliability for the current year and one dry year will be included in the WSAR.

- **Current Year Unconstrained Demand** - Procedures for determining anticipated customer water needs for the current year considering factors like weather, growth, and policies to manage current supplies. This matches the methodology presented in Chapter 4 of the UWMP for projecting demand and allows for real-time adjustments to account for weather, prior-year conditions, anticipated new demands, land use, and customer use patterns.
- **Current Year Available Supply** - Procedures for evaluating current year available water supply considering factors like groundwater recharge, hydrological and regulatory conditions in the current year and one dry year, hydrologic forecasting, and restrictions based on prior year availability and use. Each year's assessment is informed by characterizations in Chapter 6 of the UWMP.
- **Infrastructure Capabilities and Constraints** - Procedures to evaluate how existing capabilities and constraints may affect ability to deliver supplies to meet expected customer use needs in current year and one dry year. This would include anticipated capital projects to add capacity, or upcoming repairs or maintenance that may constrain capabilities, for example.
- **Locally Applicable Criteria and Other Factors** - Local criteria and how the City use it for the Annual Assessment; Local factors that can influence or disrupt supplies.

8.2.3 Description and Quantification of Each Water Supply Source

Chapter 6 of the UWMP provides a detailed description of the City's existing water supply and estimated future water supply sources over the next 20 years. The City's sole source of water supply is strictly groundwater. The City has historically relied on groundwater wells to supply its drinking water distribution system. The City has 36 active wells that are currently in service and are located throughout the City. The City's groundwater supply is summarized in Table 8.1.

Table 8.1 Retail: Groundwater Volume Pumped (MG)

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Tule Subbasin	3,222	3,345	3,515	3,422	3,647
Total		**3,222**	**3,345**	**3,515**	**3,422**	**3,647**

The City's water supply is quantified by adding sustainable yield plus groundwater recharge.

The City has plans to produce recycled water that it will both use for landscape irrigation and provide to nearby irrigation districts in exchange for surface water from the Friant-Kern Canal. It is the City's expectation that the exchange rate will be 1:1. Surface water from the Friant-Kern Canal may then be used as recharge water in the City's infiltration basins, or it may be source water for a future surface water treatment plant. Recycled water annual average daily flows (AADF) are projected to be 7.26 million gallons per day (MGD) in the year 2032 and 8.84 MGD in the year 2040.

8.3 Six Standard Water Shortage Levels

> *10632(a)(3) (A) Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use…*

As required by CWC § 10632(a)(3), the WSCP must include six standard water shortage levels representing shortages compared with normal reliability. The shortage levels are standardized to provide consistency regionally and statewide in response to the severe statewide drought of 2011-2017 and the resulting uncertainty associated with many different local definitions of water shortage stages. The six standard water shortage levels correspond to Up to 10%, up to 20%, up to 30 percent, up to 40 percent, up to 50 percent, and greater than 50 percent shortage in water supplies compared to demands under normal conditions.

These shortage levels are defined based on the City's water supply conditions including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels also apply to catastrophic interruption of water supplies, including, but not limited to, power outages, earthquakes, and other potential emergencies.

In concept, the six shortage levels represent an increasing gap between normal water supplies and normal customer water use. For example, the City may meet its anticipated customer water use with 100 percent of its available supply. At a 10 percent shortage level, the City must show its normally available supply is reduced by 10 percent and then identify locally appropriate shortage response actions (detailed further in Section 8.4) that would address the resulting gap. The normally expected water supply and water use is characterized in Chapters 4 and 7 of the UWMP. Since use and supply typically vary monthly and seasonally, the shortage evaluation is on a monthly and/or seasonal basis.

An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement by developing and including a cross-reference relating its existing categories to the six standard water shortage levels, also known as a "crosswalk". The City has elected to keep the previously established five water shortage phases from their WCP and add a sixth stage to classify supply shortage greater than 50%. A crosswalk between the City's stages and DWR's standard levels is shown in Figure 1.

WCP Phases	Percent Supply Reduction	Water Supply Condition
I	0%	Normal water supply
II	0-10%	Water supply shortage
III	10-25%	Significant water supply shortage
IV	25-50%	Critical water supply shortage
V	>50%	Emergency water supply shortage

Standard WSCP Level	Percent Shortage Range	Shortage Response Actions (Narrative Description)
1	Up to 10%	Combination of WCP Phase I and II Actions
2	Up to 20%	Combination of WCP Phase II and III Actions
3	Up to 30%	Similar to WCP Phase III Actions
4	Up to 40%	Similar to WCP Phase IV
5	Up to 50%	Combination of WCP Phase IV and V Actions
6	Greater than 50%	Similar to WCP Phase V

Figure 8.1 Crosswalk between WCP Phases and Standard WSCP Levels

8.4 Shortage Response Actions

> *10632(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following: (A) Locally appropriate supply augmentation actions. (B) Locally appropriate demand reduction actions to adequately respond to shortages. (C) Locally appropriate operational changes. (D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions. (E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.*

CWC § 10632(a)(4) requires that the WSCP include locally appropriate shortage response actions that align with the six defined water shortage levels. The specific response actions depend on the severity of the shortage levels, local conditions, and are based on a quantitative analysis of the effectiveness of each action.

These shortage response actions must include at a minimum the following:

- Supply augmentation.
- Demand reduction.
- Operational changes.
- Additional mandatory restrictions (in addition to state-mandated prohibitions).
- Estimate of shortage response action effectiveness.

Table 8.2 lists the shortage response actions along with an estimate of the extent to which each shortage response action will reduce the gap between water supply and water demand. The expected magnitude of effectiveness or reduction benefit from a given action is based on water use changes that have occurred in response to implementing water shortage actions in the past. Additionally, throughout all the shortage response actions the City continues to augment their groundwater supply surface water allocations become available year round.

Table 8.2 WSCP Water Shortage Levels, Shortage Response Actions, and Estimated Magnitude of Benefit

Water Shortage Level	Percent Shortage Range	Shortage Response Actions (Narrative Description)	Estimated Magnitude of Benefit
1	Up to 10%	**Operational Changes** • City Watering Schedule – City parks, median islands, and public facility landscaping will be watered during late night or early morning hours to the greatest extent possible and will be watered on alternating days rather than every day. • City Landscaping – All new landscaping projects undertaken by the City will incorporate conservation design. • Non-Peak Fire Hydrant Testing – The City's fire hydrant testing program will be scheduled during non-peak water usage times to the greatest extent possible without impairing the integrity of the City's fire protection service. **Demand Reduction Actions** • Public Information Program – Coordination with local news media; distribution of materials to residents, businesses, and industries; participation in Water Awareness Month (May); coordination with local schools; list of low-water trees and plants as well as Lawn and Landscape Water Guides made available upon request. • Project Review Committee – The City's Project Review Committee (PRC) will evaluate the water conservation efforts of all new development projects. The goal is to encourage developers to voluntarily reduce water consumed in the project. In addition, City staff will familiarize the developer with the concept of xeriscaping, combining creative landscaping and efficient irrigation to save water and promote attractive alternatives to traditional, high water use landscapes. • Voluntary Three-Day Odd/Even Watering Schedule – To minimize water usage, the public is encouraged to water their lawns and landscaping according to the following schedule. Addresses ending in an odd number water on Tuesday, Thursday, and Saturday, and addresses ending in an even number water on Wednesday, Friday, and Sunday. There is no watering on Monday. Watering should be avoided between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM. • No Watering after Rainfall – Advise against outdoor watering within forty-eight (48) hours of a measurable rainfall[1]. **Mandatory Restrictions (in Additional to State-Mandated Prohibitions)** • No mandatory restrictions or prohibitions at Water Shortage Level 1. **Supply Augmentation Actions** • Ongoing surface water recharge from the Porter Slough Ditch Company, Pioneer Water Company, and allocation agreement with Porterville Irrigation District.	The City's standard practice to is to operate within Water Shortage Levels 3 and 4 to maintain water conservation throughout the year. The estimated magnitude of benefit for Levels 1 and 2 Shortage Response Actions is negligible because the Shortage Response Actions for Levels 3 and 4 generally supersede those of Levels 1 and 2. Surface water allocation is expected to be 100% at this level.

[1] Measurable rainfall is defined by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) as 1/100th of one inch.

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Water Shortage Level	Percent Shortage Range	Shortage Response Actions (Narrative Description)	Estimated Magnitude of Benefit
2	Up to 20%	**Operational Changes** • Continuation of all operational changes established in Water Shortage Level 1. • Three-Day City Watering Schedule – A three-day water schedule will be adopted for all City parks, median islands, and public facility landscaping. • Water System Pressure Reduction – Water use for nonessential activities may be deferred due to the pressure reduction in the City's water system during high usage periods. **Demand Reduction Actions** • Continuation of all demand reduction actions established in Water Shortage Level 1. • Public Information Program – The City will pursue a more aggressive distribution of information to promote awareness of the need to conserve water with an emphasis on the change from Water Shortage Level 1 (Voluntary) to 2 (Mandatory). Public education on the mandatory watering schedule. • Restaurants – Notices will be sent to all restaurants within city limits requesting support of water conservation efforts by serving water to customers upon request only. • Leak and Water Waste Detection – City staff will continue to audit water usage and report evidence of leaks or water waste for immediate action with an emphasis on coordinated community efforts to reduce water waste. • "Waste of Water Notices – City staff will be equipped to issue "Waste of Water" notices to consumers identified as misusing water. **Mandatory Restrictions (in Additional to State-Mandated Prohibitions)** • Three-Day Odd/Even Watering Schedule – The City of Porterville will enforce a three-day odd/even landscape watering schedule for all residents, businesses, and industries. Addresses ending in an odd number shall water on Tuesday, Thursday, and Saturday, and addresses ending in an even number shall water on Wednesday, Friday, and Sunday. There is no watering on Monday. Watering shall only occur on designated watering days. Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM. • No Watering after Rainfall – Outdoor watering within forty-eight (48) hours of a measurable rainfall[2] is prohibited. • Vehicle Washing – Washing of automobiles, trucks, trailers, boats, & airplanes is only permitted on designated watering days. Such washing, when allowed, shall be done either by automatic car washes that recycle water or with a handheld bucket, or handheld hose equipped with a positive shutoff nozzle for quick rinses. • Sidewalk Hosing and Excessive Runoff Prohibited – The washing of sidewalks, driveways, parking areas, patios or other paved areas is prohibited, unless it is necessary for the health and safety of the public. Per Section 25-32A.26 of the City Municipal Code, "…property owners and residents shall use reasonable care to prevent the waste of water. Water shall not be allowed to run or waste from a property onto streets or highways, and shall not be used to wash sidewalks, building entrances or lobbies or other properties to such excess that water shall flow in street gutters beyond the frontage of the properties occupied by them." • Ornamental Water Features – Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life. The operation of ornamental fountains or other structure making similar use of water is prohibited unless the fountain uses a recycling or recirculating system. **Supply Augmentation Actions** • Ongoing surface water recharge described in Water Shortage Level 1.	The City's standard practice to is to operate within Water Shortage Levels 3 and 4 to maintain water conservation throughout the year. The estimated magnitude of benefit for Levels 1 and 2 Shortage Response Actions is negligible because the Shortage Response Actions for Levels 3 and 4 generally supersede those of Levels 1 and 2. Surface water allocation is expected to be 100% at this level.

[2] Measurable rainfall is defined by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) as 1/100th of one inch.

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Water Shortage Level	Percent Shortage Range	Shortage Response Actions (Narrative Description)	Estimated Magnitude of Benefit
3	Up to 30%	**Operational Changes** • Continuation of all operational changes established in Water Shortage Levels 1 and 2 • Two-Day City Watering Schedule – A two-day water schedule will be adopted for all City parks, median islands, and public facility landscaping. If it becomes necessary, watering of City parks and median islands will be suspended and evaluated each day. • Water Leaks – All leaks must be treated as a priority upon discovery and repaired at the safest scheduled opportunity. • Citations and Fines – Per Section 25-32A.24 of the City Municipal Code, Non-compliance with the City of Porterville's water conservation regulations will result in one written warning from the City of Porterville before the issuance of a citation. A second violation within a 12-month period will result in the issuance of a citation with a fine of $100.00; a second citation will result in a fine of $200.00; a third citation will result in a fine of $500.00. Willful and egregious violations will result in issuance of a citation without a warning. Each day that a violation continues shall be regarded as a new and separate offense. **Demand Reduction Actions** • Continuation of all demand reduction actions established in Water Shortage Levels 1 and 2 • Public Information Program – The utility billing system will begin to notify customers of restrictions on water use. The program to promote public awareness will be intensified with emphasis placed on communicating the mandatory water conservation requirements to the public. **Mandatory Restrictions (in Additional to State-Mandated Prohibitions)** • Continuation of all mandatory restrictions established in Water Shortage Level 2 • Two-Day Odd/Even Watering Schedule – The City of Porterville will enforce a two-day odd/even landscape watering schedule for all residents, businesses, and industries. Addresses ending in an odd number shall water on Tuesday and Saturday, and addresses ending in an even number shall water on Wednesday and Sunday. There is no watering on Monday. Watering shall only occur on designated watering days. Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM.	The City operates at Level 3 during the dry season (approximately June 1 to November 30) and Level 4 during the wet season (approximately December 1 to May 30). The primary Shortage Response Action associated with the transition from Water Shortage Level 2 to 3 is a reduction in outdoor water use from three days per week to two days per week. The magnitude of benefit for the City's Shortage Response Actions for Water Shortage Level 3 is approximately a 25% reduction in per-capita water use.
		Supply Augmentation Actions • Ongoing surface water recharge described in Water Shortage Level 1.	Surface water allocation is expected to be 80% at this level.
4	Up to 40%	**Operational Changes** • Continuation of all operational changes established in Water Shortage Levels 1, 2, and 3 • One-Day City Watering Schedule – A one-day water schedule will be adopted for all City parks, median islands, and public facility landscaping. If it becomes necessary, watering of City parks and median islands will be suspended and evaluated each day. **Demand Reduction Actions** • Continuation of all demand reduction actions established in Water Shortage Levels 1, 2, and 3 **Mandatory Restrictions (in Additional to State-Mandated Prohibitions)** • Continuation of all mandatory restrictions established in Water Shortage Level 2 • One-Day Odd/Even Watering Schedule – The City of Porterville will enforce a one-day odd/even landscape watering schedule for all residents, businesses, and industries. Addresses ending in an odd number shall water on Tuesday, and addresses ending in an even number shall water on Sunday. Watering shall only occur on designated watering days. Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM.	The City operates at Level 4 during the wet season (approximately from December 1 to May 30) and Level 3 during the dry season (approximately from June 1 to November 30). Reduced temperatures and increased rainfall lessen the need for landscape irrigation, thus decreasing water demand. The primary Shortage Response Action associated with the transition from Water Shortage Level 3 to 4 is a reduction in outdoor water use from two days per week to one day per week. The magnitude of benefit for the City's Shortage Response Actions for Water Shortage Level 3 is approximately a 50% reduction from Level 3 per-capita water use.
		Supply Augmentation Actions • Ongoing surface water recharge described in Water Shortage Level 1.	Surface water allocation is expected to be 75% at this level.

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Water Shortage Level	Percent Shortage Range	Shortage Response Actions (Narrative Description)	Estimated Magnitude of Benefit
5	Up to 50%	**Operational Changes** • Continuation of all operational changes established in Water Shortage Levels 1, 2, 3, and 4 • City Watering Suspended – Water of all City parks, median islands, and public facility landscaping will be suspended and evaluated each day. **Demand Reduction Actions** • Continuation of all demand reduction actions established in Water Shortage Levels 1, 2, 3, and 4. **Mandatory Restrictions (in Additional to State-Mandated Prohibitions)** • Continuation of all mandatory restrictions established in Water Shortage Level 2 • Lawn and Landscaping Watering Prohibited – The City of Porterville will enforce a prohibition on lawn and landscape watering for all residents, businesses, and industries. **Supply Augmentation Actions** • Ongoing surface water recharge described in Water Shortage Level 1.	Suspending all outdoor water use results in a total reduction of 40 to 50% of supply ultimately reducing the overall total water demand. The per-capita water demand will decrease to approximately 40% less than Level 4 per capita demands Surface water allocation is expected to be 50% at this level.
6	Greater than 50%	**Operational Changes** • Continuation of all operational changes established in Water Shortage Levels 1, 2, 3, 4, and 5 • Rate Structure Enhancement – A 20% water rate increase on all residential and landscape accounts will go into effect. This rate increase will encourage water conservation and will also serve as a provision to recover the lost revenues from water conservation. **Demand Reduction Actions** • Continuation of all demand reduction actions established in Water Shortage Levels 1, 2, 3, 4, and 5 **Mandatory Restrictions (in Additional to State-Mandated Prohibitions)** • Continuation of all mandatory restrictions established in Water Shortage Level 2 **Supply Augmentation Actions** • Ongoing surface water recharge described in Water Shortage Level 1. • In case of emergency Level 6 shortages, the City will consider the moving to full tertiary, adding advanced treatment, and a making a temporary connection to Friant water for non-potable supply.	The City has never implemented an emergency water rate increase as a result of a water shortage. Therefore, there is no data to support an estimated magnitude of benefit for Water Shortage Level 6. It is anticipated that with the significant reduction of water use from Levels 2 through 5, any reduced demand caused by increasing water rates would not provide a significant water use benefit compared to Levels 2 through 5. Surface water allocation is expected to be 50% at this level.

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8.4.1 Eastern Tule Groundwater Sustainability Plan (GSP)

Chapter 6 of the UWMP references the Eastern Tule Groundwater Sustainability Plan (GSP) with respect to groundwater management actions to be taken by the City to meet groundwater sustainable yield goals in response to overdraft conditions. Supply augmentation, demand reduction, and operational changes are already integrated into the criteria that the City seeks to achieve in their pursuit of the GSP's sustainable yield goals. While Chapter 6 of the UWMP lists groups of management actions that the City will consider implementing to reach their sustainability goals, the WSCP lists specific actions with quantifiable benefits for each water shortage level.

8.4.2 Water Conservation Plan (WCP)

Section 25-32A.27 of the City Municipal Code states the following:

> *"The city council has adopted by resolution its water conservation plan which sets forth water conservation phases and conservation measures including mandatory restrictions on water usage by property owners and water consumers. Violation of the measures in effect, currently and as may be amended by resolution from time to time, pursuant to the applicable phase of the water conservation plan, shall be enforceable as set forth per any applicable remedy provisions in this code, including, but not limited to, sections 1-9 and 1-10 of this code, and chapter 2, article XIV of this code, and/or this division. The city's water conservation plan is deemed to be the city's "water shortage contingency plan" as per applicable state law. (Ord. 1830, 11-17-2015)"*

The City's existing WCP lists actions to be taken by the City for different water conservation phases. To meet the requirements of CWC § 10632(a)(4), these are realigned by a crosswalk with the six standard water shortage levels and adapted to include the minimum shortage response actions listed in Table 8.2.

8.4.3 Emergency Response Plan

In addition to the Shortage Response Actions listed in Table 8.2, the WSCP includes a description of how catastrophic shortages are tied to the water shortage levels. Catastrophic shortages caused by temporary disruptions to water supply and the City's response actions to these shortages may already be adequately address in the City's Emergency Response Plan (ERP).

Although the City does not have its own formal Emergency Response Plan (ERP) to address catastrophic interruptions in water supply, the shortage response actions listed in Table 2 could be used to reduce consumption following a temporary disruption to water supply. In addition, the City has back-up generators for their supply wells that can be employed in the event of a power outage.

The City was a participant in the coordinated preparation of the March 2018 Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP). The MJLHMP assesses the natural, technological, and human-caused risks to participating communities and proposes mitigation strategies to reduce the potential impact of the hazards. The 5 goals of the MJLHMP are listed below:

- Goal 1: Protect life, property, and reduce potential injuries from natural, technological, and human-caused hazards.
- Goal 2: Improve public understanding, support and need for hazard mitigation measures.
- Goal 3: Promote disaster resistance for the County's natural, existing, and future built environment.
- Goal 4: Strengthen partnerships and collaboration to implement hazard mitigation activities.
- Goal 5: Enhance the County's ability to effectively and immediately respond to disasters.

In July 2021, the City submitted a Risk and Resilience Assessment (RRA) report to comply with America's Water Infrastructure Act (AWIA) requirements. The RRA report includes a summary of best practices for reducing risk, a list of critical assets with their identified risks from malevolent threats and natural hazards, and an assessment of the City's resilience level.

8.4.4 Seismic Risk Assessment and Mitigation Plan

Per CWC § 10632.5, a seismic risk assessment and mitigation plan is required to assess the vulnerability of the City's water system facilities to seismic risks and to mitigate those vulnerabilities.

The MJLHMP identifies vulnerabilities to earthquakes in Tulare County and provides mitigation goals and actions for seismic risks for participating communities. The seismic risk mitigation measures and corresponding hazard mitigation goals listed in the MJLHMP are detailed in Chapter 7 and Appendix H of the UWMP. The MJLHMP is included in Appendix L. The City's RRA report also assesses the vulnerability of the City's water supplies to seismic risk.

8.5 Communication Protocols

> *10632 (a)(5) Communication protocols and procedures to inform customers, the public, interested parties, and local, regional, and state governments, regarding, at a minimum, all of the following: (A) Any current or predicted shortages as determined by the annual water supply and demand assessment described pursuant to Section 10632.1. (B) Any shortage response actions triggered or anticipated to be triggered by the annual water supply and demand assessment described pursuant to Section 10632.1. (C) Any other relevant communications.*

As required in CWC § 10632(a)(5), the WSCP includes protocols and procedures for communicating with different stakeholders in the event of the different water shortage levels as part of the WSCP implementation. The communications protocols include the mechanisms used to inform customers, the general public, and interested parties as wells a local, regional, and state government entities. Communication mechanisms may include social media posts, bill stuffers or newsletters, press releases, radio spots, television coverage, and blog posts.

The decision-making process described in Section 8.2 triggers specific communications protocols to address each of the six standard shortage levels, with a focus on communicating the shortage response actions, which are derived from the results of the Annual Assessment. Emergency communications protocols are also included to address earthquakes, fires, infrastructure failures, civil unrest, and other catastrophic events. The City also participates in Reverse 911, an emergency alert system that sends text alerts directly to phones in Tulare County. Table 8.3 lists the communication protocols for the six standard water shortage levels.

Table 8.3 Communications Protocols

Water Shortage Level	Percent Shortage Range	Communication Protocol
1	Up to 10%	• Coordination with local news media on the water shortage level and ways that the public can conserve water • Distribution of materials to residents, businesses, and industries on the results of the Annual Assessment, Shortage Response Actions triggered by the Annual Assessment and WSAR, and ways that the public can conserve water • Participation in Water Awareness Month (May) • Coordination with local schools to educate students on local water issues and conditions and ways that they can conserve water • Coordination with local nurseries to provide list of low-water trees and plants • Lawn and Landscape Water Guides made available upon request • Communicate with developers on water conservation and xeriscaping • Advise against outdoor watering within forty-eight (48) hours of a measurable rainfall (1) • See the process for escalating the water shortage level in Section 8.2.1.
2	Up to 20%	• Continuation of all communication protocols in Water Shortage Level 1 • The City will pursue a more aggressive distribution of information to promote awareness of the need to conserve water with an emphasis on the change from Water Shortage Level 1 (Voluntary) to 2 (Mandatory). • Public education on the mandatory watering schedule and all other mandatory restrictions for Water Shortage Level 2. • Notices will be sent to all restaurants within city limits requesting support of water conservation efforts by serving water to customers upon request only. • City staff will report evidence of leaks or water waste for immediate action with an emphasis on coordinated community efforts to reduce water waste. • City staff will be equipped to issue "Waste of Water" notices to consumers identified as misusing water.
3	Up to 30%	• Continuation of all communication protocols in Water Shortage Levels 1 and 2 • The public information program will be intensified to promote awareness of the need to conserve water with an emphasis on the change from Water Shortage Level 2 to 3. • Public education on the mandatory watering schedule and all other mandatory restrictions for Water Shortage Level 3. • All water leaks will be treated as a priority upon discovery and repaired at the safest scheduled opportunity. • City staff will be equipped to issue citations and fines for non-compliance and violations.

Water Shortage Level	Percent Shortage Range	Communication Protocol
4	Up to 40%	• Continuation of all communication protocols in Water Shortage Levels 1, 2, and 3. • The public information program will be intensified to promote awareness of the need to conserve water with an emphasis on the change from Water Shortage Level 3 to 4. • Public education on the mandatory watering schedule and all other mandatory restrictions for Water Shortage Level 4. • Communicate with developers on mandatory water conservation and xeriscaping
5	Up to 50%	• Continuation of all communication protocols in Water Shortage Levels 1, 2, 3, and 4. • The public information program will be intensified to promote awareness of the need to conserve water with an emphasis on the change from Water Shortage Level 4 to 5. • Public education on the mandatory watering schedule and all other mandatory restrictions for Water Shortage Level 5.
6	Greater than 50%	• Continuation of all communication protocols in Water Shortage Levels 1, 2, 3, 4, and 5. • The public information program will be intensified to promote awareness of the need to conserve water with an emphasis on the change from Water Shortage Level 5 to 6. • Public education on the mandatory watering schedule and all other mandatory restrictions for Water Shortage Level 6.

Notes:
(1) Measurable rainfall is defined by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) as 1/100th of one inch.

8.6 Compliance and Enforcement

> *10632 (a)(6) For an urban retail water supplier, customer compliance, enforcement, appeal, and exemption procedures for triggered shortage response actions as determined pursuant to Section 10632.2.*

As required by CWC § 10632(a)(6), the WSCP includes a description of actions the City will take to ensure compliance with and enforcement of the prescribed shortage response actions and mandatory restrictions detailed in the WSCP. This section describes the actions the City will take to ensure compliance with and enforcement of the prescribed shortage response actions and mandatory restrictions. Table 8.4 lists the compliance and enforcement actions for the six standard water shortage levels.

Table 8.4 Compliance and Enforcement Actions

Water Shortage Level	Percent Shortage Range	Compliance and Enforcement Actions
1	Up to 10%	• City operational changes and public information program only. No enforcement actions triggered for Water Shortage Level 1. • Voluntary watering schedule and advisement against outdoor watering within 48 hours of a measurable rainfall (1). • PRC to coordinate with developers on voluntary water conservation and xeriscaping.
2	Up to 20%	• City staff will be equipped to issue "Waste of Water" notices to consumers identified as misusing water. • Mandatory restrictions for Water Shortage Level 2.
3	Up to 30%	• Continuation of compliance enforcement actions for Water Shortage Level 2. • Per Section 25-32A.24 of the City Municipal Code, Non-compliance with the City of Porterville's water conservation regulations will result in one written warning from the City of Porterville before the issuance of a citation. A second violation within a 12-month period will result in the issuance of a citation with a fine of $100.00; a second citation will result in a fine of $200.00; a third citation will result in a fine of $500.00. Willful and egregious violations will result in issuance of a citation without a warning. Each day that a violation continues shall be regarded as a new and separate offense.
4	Up to 40%	• Continuation of compliance enforcement actions for Water Shortage Levels 2 and 3. • Mandatory restrictions for Water Shortage Level 4.
5	Up to 50%	• Continuation of compliance enforcement actions for Water Shortage Levels 2, 3, and 4 • Mandatory restrictions for Water Shortage Level 5.
6	Greater than 50%	• Continuation of compliance enforcement actions for Water Shortage Levels 2, 3, 4, and 5. • Mandatory restrictions for Water Shortage Level 6. • Rate Structure Enhancement – A 20% water rate increase on all residential and landscape accounts will go into effect. This rate increase will encourage water conservation and will also serve as a provision to recover the lost revenues from water conservation.

Notes:
(1) Measurable rainfall is defined by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) as 1/100th of one inch.

8.7 Legal Authorities

> *10632 (a)(7) (A) A description of the legal authorities that empower the urban water supplier to implement and enforce its shortage response actions specified in paragraph (4) that may include, but are not limited to, statutory authorities, ordinances, resolutions, and contract provisions. (B) A statement that an urban water supplier shall declare a water shortage emergency in accordance with Chapter 3 (commencing with Section 350) of Division 1. (C) A statement that an urban water supplier shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.*

This section lists all relevant statutory authorities, local ordinances, codes, resolutions, and water supply contract provisions that give the City legal authority to implement and enforce the shortage response actions listed in Table 8.2 and enforce them pursuant to the actions listed in Table 8.4.

Relevant Municipal Code sections:

- 25-32A.2 – Applicability to landscape projects.
- 25-32A.4 – Compliance with landscape documentation package.
- 25-32A.12 – Irrigation scheduling.
- 25-32A.13 – Landscape and irrigation maintenance schedule.
- 25-32A.23 – prescriptive compliance option.
- 25-32A.24 – penalties.
- 25-32A.26 – wasteful use of water prohibited.
- 25-32A.27 – WCP.
- 2-144 – Civil/Administrative Fines and Administrative Costs.

In the event of a water shortage emergency, the City shall declare a water shortage emergency in accordance with CWC Chapter 3 (commencing with Section 350) of Division 1 general provision regarding water shortage emergencies. The City shall coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency under California Government Code, California Emergency Services Act (Article 2, Section 8558).

8.8 Financial Consequences of WSCP Activation

> *10632 (a)(8) A description of the financial consequences of, and responses for, drought conditions, including, but not limited to, all of the following: (A) A description of potential revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4). (B) A description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions described in paragraph (4). (C) A description of the cost of compliance with Chapter 3.3 (commencing with Section 365) of Division 1.*

The WSCP includes a description of potential reductions in revenue and increased expenses associated with the implementation of the shortage response actions described in Section 8.4 coupled with anticipated mitigation actions needed to address these financial impacts.

The City bills most of its customers on a volumetric basis. As a result, conservation measures, which aim to reduce water consumption, can also reduce revenue for the City. Significant water conservation during droughts can have a major impact on City revenues. Although the City would have lower water production costs with lower water deliveries, they also have considerable fixed and overhead costs that are the same for any volume of water delivered. As a result, conservation measures need to be coupled with rate adjustments to ensure that the water system is financially sustainable.

The City's current WCP includes a 20% water rate increase on all residential and landscape accounts for the Phase V, or critical water supply shortage scenario. The higher unit rate is intended to discourage use, but it will also help to offset the revenue lost from selling a lower volume of water. The suitability of this 20% increase is not yet known, and it needs to be tested during a single-year and multi-year drought. If, in the future, the 20% price increase is found to be inadequate, the City will reevaluate the increase and modify it accordingly.

It is anticipated that implementation of the WSCP will not have a large impact on expenditures or revenues. No additional costs are expected for billing or operations. Existing City staff will provide the personnel needed to implement the plan and enforce water conservation measures. It is likely that higher expenditures will be needed for public information programs, but these will probably be small compared to the total City water budget. Fines for water waste are a source of revenue, and they typically increase during droughts. However, the revenues from fines are also small compared to the overall City water budget.

The compliance and enforcement actions detailed in Section 8.6 include a description of the fines associated with non-compliance with the water shortage response actions.

8.9 Monitoring and Reporting

> *10632 (a)(9) For an urban retail water supplier, monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance and to meet state reporting requirements.*

The WSCP includes a description of how the City will monitor and report on implementation of its WSCP. Monitoring and reporting is essential to ensure that the shortage response actions are achieving their intended water use reduction purposes. Monitoring can also help the City determine whether improvements or new actions need to be considered. Monitoring for customer compliance tracking is also useful in enforcement actions.

The State Water Board is preparing regulation for monthly reporting of water production, water uses, and enforcement metrics. When finalized, these will be summarized in the WSCP and incorporated by reference.

The City will be able to closely track groundwater pumping and any surface water deliveries on a daily basis. This data will be evaluated weekly to determine the effectiveness of the shortage response actions. Monthly water meter reading will help with compliance monitoring for individual customers.

8.10 WSCP Refinement Procedures

> *10632 (a) (10) Reevaluation and improvement procedures for systematically monitoring and evaluating the functionality of the water shortage contingency plan in order to ensure shortage risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented as needed.*

Per the requirements of CWC § 10632(a)(10), the WSCP includes a description of how the City will use the results of the monitoring and reporting to evaluate the need for revisions to the WSCP.

This WSCP is a dynamic tool that can be refined as needed to ensure that the shortage response actions are effective and are producing the desired results. Refinements or new actions may be identified and suggested by City staff, customers, or other interested parties. These suggestions will be evaluated by City administration for the possible incorporation into future revisions of the WSCP. If deemed necessary by City administration, these suggestions or revisions may be made to the current WSCP as an amendment so that they may be implemented quickly at the appropriate water shortage levels.

8.11 Special Water Feature Distinction

> *10632 (b) For purposes of developing the water shortage contingency plan pursuant to subdivision (a), an urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.*

Because pools and spas must use potable water for health and safety considerations, pools and spas are analyzed and defined separately in the WSCP from other water features which may use recycled water. Water features that are not pools or spas are distinguished in the WSCP with the use of terminology such as "decorative water features" or "recreational water features", and shortage response actions, enforcement actions, and monitoring are prepared for each respectively.

8.12 Plan Adoption, Submittal, and Availability

> *10632(c) The urban water supplier shall make available the water shortage contingency plan prepared pursuant to this article to its customers and any city or county within which it provides water supplies no later than 30 days after adoption of the water shortage contingency plan.*

Chapter 10 of this UWMP describes the process for adoption, submittal, and implementation of the UWMP. These same processes and steps will be followed for the adoption of the City's WSCP. The City's WCP currently serves as their WSCP per their municipal code and previous adoption and may be periodically amended independently of the UWMP as needed. The City shall follow their standard amendment process, public adoption hearings, issuance of notices to affected cities, counties, and the public about the adoption process, submittal to DWR, the California State Library, local libraries, and others. The City can also describe how the plan has been made available to all of the cities and counties it serves no later than 30 days after it is adopted.

8.13 Resources and References

The City may use the following list of resources and references for developing its WSCP:

1. Alliance for Water Efficiency 2020. Use and Effectiveness of Municipal Irrigation Restrictions During Drought. Available at: https://www.allianceforwaterefficiency.org/impact/our-work/use and-effectiveness-municipal-irrigation-restrictions-during-drought
2. American Water Works Association (AWWA) 2011. AWWA M60: Drought Preparedness and Response Manual. The AWWA M60, 72 pages. Available at: https://www.awwa.org/Store/M60-Drought-Preparedness-and-Response-Second-Edition/ProductDetail/75759388
3. AWWA M19: Emergency Planning for Water and Wastewater Utilities. Outline link: Available at: https://www.awwa.org/Portals/0/files/publications/documents/M19LookInside.pdf
4. California Department of Water Resources. 2010. California Drought Contingency Plan. Available at: https://drought.unl.edu/archive/plans/Drought/state/CA_2010.pdf
5. California Department of Water Resources. Draft 2020. Handbook for Water Budget Development. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/GroundwaterManagement/Data-and-Tools/Files/Water-Budget-Handbook.pdf
6. California State Water Resources Control Board. Emergency Response Plan Guidance for Public Drinking Water Systems. Available at: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/security/ddw_emergency_guidelines_0215.pdf
7. California Water Efficiency Partnership (CalWEP) 2020. Model Water Shortage Contingency Plans. Available at: http://toolbox.calwep.org/wiki/Model_Water_Shortage_Contingency_Plans
8. California Public Utilities Commission Drought Procedures Standard Practice U-40-W. Summarized by CalWEP here: Available at: http://toolbox.calwep.org/wiki/Model_Water_Shortage_Contingency_Plans#CPUC_Drought_Procedures_Standard_Practice_U-40-W Current text of law available at: http://www.leginfo.ca.gov/cgibin/displaycode?section=wat&group=00001-01000&file=350-359
9. Vogt, J.V., Naumann, G., Masante, D., Spinoni, J., Cammalleri, C., Erian, W., Pischke, F., Pulwarty, R., Barbosa, P., Drought Risk Assessment. A conceptual Framework. EUR 29464 EN, Publications Office of the European Union, Luxembourg, 2018. ISBN 978-92-79-97469-4. doi:10.2760/057223, JRC113937; Available at: https://publications.jrc.ec.europa.eu/repository/handle/JRC113937
10. State of Washington 2011. Guidance Document: Preparing Water Shortage Response Plans. Available at: https://www.watersupplyforum.org/docs/6/773f6f0d95152843a051c624d028d80d5841da51/Dept.ofHealth_PreparingWaterShortageResponsePlans1.pdf
11. United Nations Development Programme. 2012. Drought Risk Management: Practitioner's Perspectives from Africa and Asia. Available at: https://catalogue.unccd.int/36_Drought_Risk_Management.pdf

12. U.S. Environmental Protection Agency. 2015. Planning for an Emergency Drinking Water Supply. Available at: https://www.epa.gov/sites/production/files/2015-03/documents/planning_for_an_emergency_drinking_water_supply.pdf
13. Whilhite, D. Sivakumar, M., Pulwarty, R. 2014. Managing Drought Risk in a Changing Climate: The role of national drought policy. Weather and Climate Extremes 3: 4-13. Available at: https://doi.org/10.1016/j.wace.2014.01.002

Chapter 9

DEMAND MANAGEMENT MEASURES

The UWMPA requires that the UWMP involve a comprehensive discussion of the agency's water conservation measures.

> 10631 (f)(A)...The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.30.
>
> (B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:
>
> (i) Water waste prevention ordinances
>
> (ii) Metering
>
> (iii) Conservation pricing
>
> (iv) Public education and outreach
>
> (v) Programs to assess and manage distribution system real loss
>
> (vi) Water conservation program coordination and staffing support.
>
> (vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measure, if implemented.

This chapter presents details of the demand management measures (DMMs) contained in the UWMPA, as well as the City's existing and planned efforts to further develop their water conservation program. The City is committed to water conservation and has implemented several policies and on-going programs that promote and encourage water conservation.

The UWMPA was amended in 2014 to streamline DMMs from 14 specific measures to 6 more general requirements and an "other" category. Brief descriptions of the City's current and planned implementation of DMMs are included in the following sections.

9.1 Water Waste Prevention Ordinances

According to Section 25-32A.26 of the City Municipal Code, "the consumer shall use reasonable care to prevent the waste of water, shall not allow water to run or waste from his property onto streets or highways, shall not use water in washing sidewalks, building entrances or lobbies or other properties to such excess that water shall flow in street gutters beyond the frontage of properties occupied by them."

The City has a Water Conservation Plan (WCP) that serves as the City's WSCP as discussed in Chapter 8. The City has seen positive reduction in water consumption as a result of the water conservation plan. For example, as a result of the WCP implementation in the 2015 UWMP, Figure 7.1 shows the City has seen steady conservation efforts from water usage over the last five years and reduced usage by 27 percent The WCP is implemented by a public hearing to discuss phase transitioning to Porterville City Council and then an official resolution by Council. Any change in Phase of the WCP requires council resolution.

For a number of years, the City has been operating between Phase III and Phase IV of the WCP. Phase III limits outdoor irrigation to twice a week and Phase IV to once a week. Typically, the City transitions to Phase III in May to allow 2-day watering during the summer months in order to maintain landscaping and will transition to 1-day watering schedules in December. In drier periods, the City tracks groundwater levels on a month to month basis and will recommend transitioning to WCP Phases earlier or later (e.g. 2 day watering schedule in late June and/or 1 day watering schedule in November) in the year to increase annual conservation efforts.

9.2 Metering

In 2020 the City has approximately 98.5 percent of their water connections metered. All metered customers are billed on a volumetric basis and therefore have incentives to conserve water and decrease monthly utility bills. The City continues to require water meters on all new connections for new development.

The City began adding water service meters to residents of East Porterville in 2016 and had a total of approximately 725 metered connections in 2020. The City tracks additional service connections separately in their water meter account.

The City is currently in the process of upgrading their water meter program to an advanced meter infrastructure (AMI) system which will create an integrated network that does not require physical efforts for meter data collection and will provide data to a City network at predetermined intervals.

9.3 Conservation Pricing

As of October 1st, 2020 the City has updated their water rates to include a flat rate of $86.54, with a $19.89 minimum and an additional $1.91 per unit of water, where one (1) unit of water is equivalent to 100 cubic feet (748 gallons) of water. The City sewer rates are a flat rate of $26.87 per connection with commercial connections cost dependent on type of use. Phase VI of the City's WCP includes a 20 percent water rate increase on all residential and landscape accounts to go into effect. This rate increase will encourage water conservation and will also service as a provision to recover the lost revenues from water conservation. Since the adoption of the WCP and with the revised WCP to account for the WSCP, the City has never implemented the 20 percent rate increase as a conservation measure.

The City municipal Code Section 25-32A.24 includes citations and fines are issued for non-compliance of the City's water conservation regulations. Non-compliance with the City of Porterville's water conservation regulations will result in one written warning from the City of Porterville before the issuance of a citation. A second violation within a 12-month period will result in the issuance of a citation with a fine of $100.00; a second citation will result in a fine of $200.00; a third citation will result in a fine of $500.00. Willful and egregious violations will result in issuance of a citation without a warning. Each day that a violation continues shall be regarded as a new and separate offense.

The City has continued to issue citations and fines since the implementation of the WCP since 2015 and plans to continue this activity in the future.

9.4 Public Education and Outreach

Historically the City uses the following water conservation public information programs since 2015:

- City participation in Water Awareness Month (May).
- Bill stuffers on water conservation.
- News programs on local channels, change in WCP phases advertised as necessary.
- Radio commercials in both English and Spanish.
- Booth at the Porterville City Fair and other city evens (Iris Festival etc.)
- Water bills that compare current water usage to the previous year's usage.
- Facility tours of the City's wastewater treatment plants for students.
- Advertising through billboards, City transit vehicles, and flyers throughout City property.

The City plans to expand their public education and outreach efforts by including the following items:

- Social media outreach through the City Manager's office.
- Local Newspaper advertisements in addition to the WCP Phase changes.
- Advertise on transit vehicles on the Greenpower bus fleet.
- Local School district, interns, video shorts.
- City website advertisement.
- Mosquito abatement requirements and recommendations.

9.5 Programs to Assess and Mange Distribution System Real Loss

DWR encourages agencies to detect and resolve leaks when economically feasible through reporting and audit mechanisms performed on water distribution systems. Water system audits include an evaluation of the City's distribution system for leaks and other losses. System losses are quantified as water input minus metered and/or delivered water. The resultant loss is a good indication of a system's integrity.

The City has performed water systems audits as required and are included in section Chapter 3 of this UWMP. The 2020 AWWA Water Audit is due October 2021.

The City's water distribution system is completely operated under pressure and as a result older pipes and facilities tend to develop leaks through deteriorated gaskets, seals, and developed cracks. As stated in the 2015 UWMP, a physical system audit is not performed every year, since the production to metered water use is fairly consistent. In all newly constructed water and sewer infrastructure, facilities shall be pressure tested prior to completion to identify any leaks to reduce and cost of physical water system audits.

City staff does perform individual water surveys on individual single and multi-family services at the request of owner. Typically these surveyors are requested when a customer feels their water bill is too high. A typical individual water survey includes the following:

1. Check indoor and outdoor plumbing for leaks.
2. Check irrigation system timers.
3. Evaluate Irrigation water schedule.
4. Flow tests for customer.
5. Recommend various water conservation measures to the customer, such as modifications to their irrigation schedule and retrofitting with water efficient fixtures and appliances.

Division 6 of the City's municipal code covers water conservation and efficiency measures required by the City. This section recognizes the importance of landscaped areas for the health of the City; however the management of such areas shall be done in an efficient and water conscious methods to ensure the availability of adequate supplies of water for future uses.

As mentioned in Section 9.2, the City is currently in the beginning stages of upgrading their existing water meter system to an AMI system. The AMI system will provide leak detection monitoring to notify City staff if a water meter is leaking or if a water system customer (residential, institutional, commercial, or industrial) has an onsite leak that can be fixed to both lower monthly water bills and prevent waste.

9.6 Water Conservation Program Coordination and Staffing Support

The City's water conservation program is an ongoing program of public education and being proactive in continuous monitoring, repairing, and managing the water supplies in conjunction with State regulations and surrounding agencies. The City also continues to monitor residential, commercial and industrial customers through their metering program to ensure all entities in the water service area are complying with conservation measures to assure that the system will have adequate supplies in the future. The implementation of the entire program wide is the assumed responsibility of the City's water superintendent, water systems specialist, and the public works director. This has been the case since the implementation of the WCP in 2015 and the City continues to operate their water conservation program under this structure.

9.7 Other Demand Management Measures

The City does not have any additional demand management measures scheduled to be included in their City-wide water conservation program at this time.

9.8 Planned Implementation to Achieve Water Use Targets

The City plans on continuing to implement and manage it's existing water conservation program as described in the previous sections throughout the foreseeable future. In summary, adding to the existing program, the City plans to implement the following programs as mentioned in the previous sections:

- Upgrade of their existing water meter system to an AMI system.
- Significant increase in their public outreach and communication efforts.
- Continued implementation of the WCP through City staff involvement and leadership from management level staff.

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Chapter 10

PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

A completed UWMP checklist is included in Appendix A.

10.1 Inclusion of All 2020 Date

The 2020 UWMPs must include the water use and planning data for the entire year of 2020. The City is reporting on a calendar year basis and therefore, 2020 data includes the months of January to December 2020.

10.2 Notice of Public Hearing

A public hearing was held on February 15th, 2022, prior to adoption of the UWMP at Porterville Council Chambers, 291 N. Main Street, Porterville, CA 93257. Notices were provided to cities and counties, and the public. The public hearing provided an opportunity for the public to provide input to the plan before it is adopted. Additionally, the public hearing provided an opportunity for the customers, residents, and employees to learn and ask questions about the current and future water supply of the City.

10.2.1 Notice to Cities, Agencies, Organizations, and Counties

> *10621(b) Every urban water supplier required to prepare a plan shall… at least 60 days prior to the public hearing on the plan… notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.*
>
> *10642… The urban water supplier shall provide notice of the time and place of hearing to any city or county within which the supplier provides water supplies. A privately owned water supplier shall provide an equivalent notice within its service area…*

The agencies listed in Table 10.1, were provided 60-day notification (prior to the public hearing) that the City was in the process of preparing the 2020 UWMP. The 60 Day Notification letters are included in Appendix D. The cities and counties were provided a notice of public hearing, including the time and location. The notice of public hearing to the same agencies are included in Appendix D.

10.2.2 Notice to the Public

> *10642… Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection… Prior to the hearing, notice of the time and place of hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code…*

The UWMPA requires that the UWMP show the water agency solicited public participation. The notice to the public was included in a local newspaper as prescribed in Government Code 6066. This notice included the time and location of the public hearing, in addition to the location of where the UWMP was available for public inspection. The notice of public hearing to the public is included in Appendix D.

On February 1st, 2022 and February 8th, 2022, the City placed a notice in the Porterville Recorder (local newspaper) stating that its UWMP was being updated and that a public hearing was to be conducted to address comments and concerns from members of the community. The notice stated that a public review period would be scheduled through February 15th, 2022.

The Draft 2020 UWMP was available for public inspection at the Porterville City Hall at 241 N. Main Street, Porterville Ca 93257, as well as the City's website

10.3 Public Hearing and Adoption

> *10642…Prior to adopting a plan, the urban water supplier shall hold a public hearing thereon.*
>
> *10608.26(a). In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:*
>
> *(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.*
>
> *(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.*
>
> *(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target.*
>
> *10642… After the hearing, the plan shall be adopted as prepared or as modified after the hearing.*

The plan was adopted by the City of Porterville City Council at a public hearing on February 15th, 2022. The City Resolution is included in Appendix B. The hearing provided an opportunity for the City customers, residents, and employees to learn and ask questions about the current and future water supply of the City. At the hearing, the UWMP, water use targets, and conservation implementation plan were discussed.

10.3.1 Adoption

After the public hearing, the 2020 UWMP was adopted as prepared.

10.4 Plan Submittal

The public hearing will be followed by submittal of the UWMP to the DWR, the California State Library, and Cities and Counties (see Commitment to Distribute in Appendix A).

10.4.1 Submission to DWR

The 2020 UWMP will be submitted to DWR within 30 days of adoption.

10.4.2 Electronic Data Submission

The 2020 UWMP, in addition to tabular data, will be submitted using Water Use and Efficiency (WUE) data submittal tool.

10.4.3 Submission to the California State Library

The 2020 UWMP will be submitted in compact disc (CD) or hardcopy format to the California State Library within 30 days of adoption.

10.4.4 Submission to Cities and Counties

The 2020 UWMP, which includes the Water Shortage Contingency Plan, will be submitted in electronic format to cities and counties within 30 days of adoption.

10.5 Public Availability

Within 30 days of submitting the UWMP to DWR, the adopted UWMP will be available for public review during normal business hours at the locations specified herein.

10.6 Amending and Adopted UWMP

The plan may be updated at any time when the urban water supplier believes significant changes have occurred in population, land use, and/or water sources that may affect the contents of the plan. Copies of amendments or changes to the plan shall be submitted electronically to DWR and the California State Library within 30 days of adoption.

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Appendix A

COMPLETED URBAN WATER MANAGEMENT CHECKLIST

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Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Complete?	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activitie	Yes	Introduction and Overview	Chapters 3, 4 and 6.
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Yes	Summary	Chapter 1, 3, 4 and 6
x	x	Section 2.2	10620(b)	Every person that becomes an urban water supplier shall adopt an urban water management plan within one year after it has become an urban water supplie	N/A	Plan Preparation	
x	x	Section 2.6	10620(d)(2)	Coordinate the preparation of its plan with other appropriate agencies in the area, including oth water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable	Yes	Plan Preparation	Chapters 1 and 10
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency pla	yes via public outreach	Plan Preparation	Chapters 1, 10 and Appendix D - Public Notifications
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source	N/A	System Supplies	
	x	Section 2.6	10631(h)	Wholesale suppliers will include documentation that they have provided their urban water supplie with identification and quantification of the existing and planned sources of water available from wholesale to the urban supplier during various water year type	N/A	System Supplies	
x	x	Section 3.1	10631(a)	Describe the water supplier service area	Yes	System Description	Chapter 3
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplie	Yes	System Description	Chapter 3
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 204	Yes	System Description	Chapter 3
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning	Yes	System Description	Chapter 3
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	Yes	System Description and Baselines and Targets	Chapter 3 and Appendix K
x	x	Section 3.5	10631(a)	Describe the land uses within the service area	Yes	System Description	Chapter 3
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	Yes	System Water Use	Chapter 3
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were m	Yes	System Water Use	Chapter 4
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	Yes	System Water Use	Chapter 4
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	Yes	System Water Use	Chapter 8 and 9
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	Yes	System Water Use	Chapter 4
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	Yes	System Water Use	Chapter 4
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	Yes	System Water Use	Chapter 7 and Appendix H
x		Chapter 5	10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, inter urban water use target, and compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting dat	Yes	Baselines and Targets	Chapter 5 and Appendix F
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 202	Yes	Baselines and Targets	Chapter 5 and Appendix F
	x	Section 5.1	10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	N/A	Baselines and Targets	
x		Section 5.2	10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, econom adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	N/A	Baselines and Targets	
x		Section 5.5	10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base da per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100	Yes	Baselines and Targets	Chapter 5 and Appendix F
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Forn	Yes	Baselines and Targets	Chapter 5 and Appendix F
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of droug	Yes	System Supplies	Chapter 7
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and drought lasting five years, as well as more frequent and severe periods of drought, *including changes in supply due to climate change*	Yes	System Supplies	Chapter 7
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies	Yes	System Supplies	Chapter 6
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of wat	Yes	System Supplies	Chapter 6
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045	Yes	System Supplies	Chapter 6
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	Yes	System Supplies	Chapter 6
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has be adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorizatio	Yes	System Supplies	Chapter 6 and Appendix G
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin	Yes	System Supplies	Chapter 6
x	x	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pun	N/A	System Supplies	
x	x	Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a h or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions	Yes	System Supplies	Chapter 6 and Appendix G
x	x	Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five yea	Yes	System Supplies	Chapter 6
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped	Yes	System Supplies	Chapter 6
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis	Yes	System Supplies	Chapter 6
x	x	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water proje	Yes	System Supplies (Recycled Water)	Chapter 6
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	Yes	System Supplies (Recycled Water)	Chapter 6
x	x	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses	Yes	System Supplies (Recycled Water)	Chapter 6
x	x	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the supplier's service area at the end of 5, 1 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected	Yes	System Supplies (Recycled Water)	Chapter 6
x	x	Section 6.2.5	10633(f)	Describe the actions which may be taken to encourage the use of recycled water and the projec results of these actions in terms of acre-feet of recycled water used per year.	Yes	System Supplies (Recycled Water)	Chapter 6
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	Yes	System Supplies (Recycled Water)	Chapter 6
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supp	N/A	System Supplies	
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal metho	Yes	System Supplies (Recycled Water)	Chapter 6
x	x	Section 6.2.8, Section 6.3.7	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by t water supplier to address water supply reliability in average, single-dry, and for a period of drough lasting 5 consecutive water years	Yes	System Supplies	Chapter 6 and Chapter 7
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	N/A	System Suppliers, Energy Intensity	Not included in UWMP
x	x	Section 7.2	10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Yes	Water Supply Reliability Assessment	Chapter 6 and Appendix J
x	x	Section 7.2.4	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions	N/A	Water Supply Reliability Assessment	Chapter 9
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Yes	Water Supply Reliability Assessment	Chapter 7 and Appendix J
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply project	Yes	Water Supply Reliability Assessment	Appendix J
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shorta conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years	Yes	Water Supply Reliability Assessment	Chapter 7, Chapter 8 and Appendix J
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Yes	Water Supply Reliability Assessment	Chapter 7, Chapter 8 and Appendix J
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period	Yes	Water Supply Reliability Assessment	Chapter 7, Chapter 8 and Appendix J
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected suppli and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Yes	Water Supply Reliability Assessment	Chapter 7, Chapter 8 and Appendix J
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the wa shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemente	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I

x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categorie	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local condition	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Yes	Water Shortage Contingency Plan	Chapter 8 and Appendix I
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding a shortage response actions triggered or anticipated to be triggered and other relevant communications	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x		Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergenc	N/A	Water Shortage Contingency Planning	
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response action	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drough	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures th ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spa	Yes	Water Shortage Contingency Planning	Chapter 8 and Appendix I
x	x	Sections 8.12 and 10.4	10635(c)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will b provided to any city or county within which it provides water, no later than 30 days after the submission of the plan to DWR	Yes	Plan Adoption, Submittal, and Implementation	Chapter 8 and Appendix I
x	x	Section 8.12	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the pla	N/A	Water Shortage Contingency Planning	
	x	Sections 9.1 and 9.3	10631(e)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	N/A	Demand Management Measures	
x		Sections 9.2 and 9.3	10631(e)(1)	Retail suppliers shall provide a description of the nature and extent of each demand manageme measure implemented over the past five years. The description will address specific measures listed in code	Chapter 9	Demand Management Measures	Yes
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance	Yes	Plan Adoption, Submittal, and Implementation	Chapter 1, Chapter 10 and Appendix D
x	x	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the suppli provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan. Reported in Table 10-	Yes	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Uploaded In January 2022	Plan Adoption, Submittal, and Implementation	Chapter 1 and Chapter 10
x	x	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingen plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan	Yes	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.2.2	10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water	Yes	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified	Yes	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library	Yes	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.4	10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	N/A	Plan Adoption, Submittal, and Implementation	
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically	Yes	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with t department, the supplier has or will make the plan available for public review during normal business hours.	Yes	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its wat shortage contingency plan with the department, the supplier has or will make the plan available for public review during normal business hours	Yes	Plan Adoption, Submittal, and Implementation	Chapter 10
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings	N/A	Plan Adoption, Submittal, and Implementation	
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption	N/A	Plan Adoption, Submittal, and Implementation	

Appendix B

2020 URBAN WATER MANAGEMENT PLAN ADOPTION RESOLUTION

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Appendix C

2015 URBAN WATER MANAGEMENT PLAN AND DATA SOURCES

https://cms9files.revize.com/PortervilleCA/Document_Center/Department/Public%20Works/Water%20 Conservation/2015UWMPUpdate-Final.pdf

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Appendix D

PUBLIC NOTIFICATIONS

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June 18, 2021

Tule River Association
2904 W. Main St.
Visalia, CA 93291

Attention: R.L. Schafer

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear R.L. Schafer:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael L. Knight

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

Porter Vista Public Utilities District
1124 E. Success Dr.
Porterville, CA 93257

Attention: Jeannie Chavez

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Jeannie Chavez:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael L. Knight

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

Tea Pot Dome Irrigation District
357 E. Olive Ave
Tipton, CA 93272

Attention: Eric Limas

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Eric Limas:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael L. Knight

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

Vandalia Irrigation District
357 E. Olive Ave
Tipton, CA 93272

Attention: Eric Limas

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Eric Limas:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael L. Knight

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

Lower Tule River Irrigation District
357 E. Olive Ave
Tipton, CA 93272

Attention: Eric Limas

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Eric Limas:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

Saucelito Irrigation District
20712 Avenue 120
Porterville, CA 93257

Attention: Sean Geivet

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Sean Geivet:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

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If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

Terra Bella Irrigation District
24790 Avenue 95
Terra Bella, CA 93270

Attention: Sean Geivet

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Sean Geivet:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

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Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael L. Knight

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

Porterville Irrigation District
220860 Avenue 160
Porterville, CA 93257

Attention: Sean Geivet

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Sean Geivet:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael L. Knight

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

Eastern Tule Groundwater Sustainability Agency
881 W. Morton Avenue, Suite D.
Porterville, CA 93257

Attention: Rogelio Claudillo

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Rogelio Claudillo:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael L. Knight

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

June 18, 2021

County of Tulare
5961 S. Mooney Boulevard
Visalia, CA 93277

Attention: Denise England

Subject: **Notice of Preparation of the 2020 City of Porterville Urban Water Management Plan**

Dear Denise England:

Pursuant to the requirements of the California Water Code, Division 6, Part 2.6 Urban Water Management Planning, Section 10621 (b), every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days prior to the public hearing on the plan required by Section 10642, notify any city or county within which the supplier provides water supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

This letter is intended to notify your agency that the City of Porterville (City) is in process of preparing the 2020 Urban Water Management Plan (UWMP). Based on the City's current schedule, we expect to have a public review draft of the 2020 UWMP available for review in August 2021, at which point your agency will receive a notification letter that the draft UWMP is available for public review.

If your agency would like to submit comments or provide input to the City in anticipation of the development of the 2020 UWMP, please submit written copies to:

Michael Knight
City of Porterville
Public Works Director
291 North Main Street
Porterville, CA 93257

Sincerely,

CITY OF PORTERVILLE

Michael Knight
Public Works Director

cc: Anthony Cemo, Carollo Engineers, Inc.

Appendix E

AWWA WATER AUDIT DOCUMENTS

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AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: City of Porterville (54-10010)
Reporting Year: 2016 (1/2016 - 12/2016)

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

	Grading	Value		Grading	Pcnt:	Value:	
Volume from own sources:	4	3,222.000	MG/Yr	3			MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 3,222.000 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

	Grading	Value		Pcnt:	Value:	
Billed metered:	5	2,776.000	MG/Yr			
Billed unmetered:	10	95.576	MG/Yr			
Unbilled metered:	n/a		MG/Yr			
Unbilled unmetered:		40.275	MG/Yr	1.25%		MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 2,911.851 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 310.149 MG/Yr

Apparent Losses

	Grading	Value		Pcnt:	Value:	
Unauthorized consumption:		8.055	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	3	0.000	MG/Yr			MG/Yr
Systematic data handling errors:		6.940	MG/Yr	0.25%		MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 14.995 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 295.154 MG/Yr

WATER LOSSES: 310.149 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 350.424 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

	Grading	Value	
Length of mains:	9	234.9	miles
Number of active AND inactive service connections:	5	15,760	
Service connection density:		67	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line:

(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

	Grading	Value	
Average operating pressure:	9	60.0	psi

COST DATA

	Grading	Value		
Total annual cost of operating water system:	10	$5,525,799	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$1.75	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	5	$583.08	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 57 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: City of Porterville (54-10010)
Reporting Year: 2017 1/2017 - 12/2017

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

						Pcnt:	Value:	
Volume from own sources:	7	3,345.000	MG/Yr	3				MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr
WATER SUPPLIED:		**3,345.000**	MG/Yr					

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	5	2,891.000	MG/Yr			
Billed unmetered:	10	59.430	MG/Yr			
Unbilled metered:	n/a		MG/Yr			
Unbilled unmetered:		41.813	MG/Yr	1.25%		MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: **2,992.243** MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

352.758 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		8.363	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	4	44.025	MG/Yr	1.50%		MG/Yr
Systematic data handling errors:		7.228	MG/Yr	0.25%		MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **59.615** MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **293.142** MG/Yr

WATER LOSSES: **352.758** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **394.570** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	273.4	miles
Number of active AND inactive service connections:	9	16,206	
Service connection density:		59	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	9	60.0	psi

COST DATA

Total annual cost of operating water system:	10	$6,221,146	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$1.79	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	8	$537.68	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 71 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

Click to access definition | Click to add a comment

Water Audit Report for: City of Porterville (54-10010)
Reporting Year: 2018 | 1/2018 - 12/2018

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

					Pcnt:	Value:	
Volume from own sources:	7	3,514.000	MG/Yr	3			MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 3,514.000 MG/Yr

AUTHORIZED CONSUMPTION

Click ? for help using option buttons

				Pcnt:	Value:	
Billed metered:	6	3,078.800	MG/Yr			
Billed unmetered:	10	30.406	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:		43.925	MG/Yr	1.25%		MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 3,153.131 MG/Yr

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption) 360.869 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		8.785	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	4	46.885	MG/Yr	1.50%		MG/Yr
Systematic data handling errors:		7.697	MG/Yr	0.25%		MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 63.367 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 297.502 MG/Yr

WATER LOSSES: 360.869 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 404.794 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	274.3	miles
Number of active AND inactive service connections:	9	16,687	
Service connection density:		61	conn./mile main
Are customer meters typically located at the curbstop or property line?		Yes	
Average length of customer service line:			

(length of service line, beyond the property boundary, that is the responsibility of the

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	9	60.0	psi

COST DATA

Total annual cost of operating water system:	10	$6,195,223	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$1.83	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	9	$555.00	$/Million gallons

☐ Use Customer Retail Unit Cost to value real

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: City of Porterville (54-10010)
Reporting Year: 2019 | 1/2019 - 12/2019

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

				Pcnt:	Value:	
Volume from own sources:	7	3,422.000	MG/Yr			MG/Yr
Water imported:	n/a	0.000	MG/Yr			MG/Yr
Water exported:	n/a	0.000	MG/Yr			MG/Yr
WATER SUPPLIED:		**3,422.000**	MG/Yr			

Enter negative % or value for under-registration
Enter positive % or value for over-registration

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	6	2,990.000	MG/Yr			
Billed unmetered:	10	23.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:		42.775	MG/Yr	1.25%		MG/Yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: **3,055.775** MG/Yr

Use buttons to select percentage of water supplied **OR** value

WATER LOSSES (Water Supplied - Authorized Consumption) **366.225** MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		8.555	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Customer metering inaccuracies:	5	92.474	MG/Yr	3.00%	MG/Yr
Systematic data handling errors:		7.475	MG/Yr	0.25%	MG/Yr

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: **108.504** MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: **257.721** MG/Yr

WATER LOSSES: **366.225** MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: **409.000** MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	275.8	miles
Number of active AND inactive service connections:	9	16,863	
Service connection density:		61	conn./mile main
Are customer meters typically located at the curbstop or property line?		Yes	
Average length of customer service line:			(length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	9	60.0	psi

COST DATA

Total annual cost of operating water system:	10	$6,195,222	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$1.87	$/100 cubic feet (ccf)	
Variable production cost (applied to Real Losses):	8	$569.93	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
\+ Click to add a comment

Water Audit Report for: City of Porterville (54-10010)
Reporting Year: 2020 1/2020 - 12/2020

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

Master Meter and Supply Error Adjustments

WATER SUPPLIED

<---------- Enter grading in column 'E' and 'J' ---------->

				Pcnt:	Value:	
Volume from own sources:	7	3,647.000	MG/Yr			MG/Yr
Water imported:	n/a	0.000	MG/Yr			MG/Yr
Water exported:	n/a	0.000	MG/Yr			MG/Yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 3,647.000 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	6	3,243.000	MG/Yr			
Billed unmetered:	10	21.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:		45.588	MG/Yr	1.25%		MG/Yr

Use buttons to select percentage of water supplied **OR** value

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

AUTHORIZED CONSUMPTION: 3,309.588 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 337.413 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		9.118	MG/Yr	0.25%		MG/Yr
Customer metering inaccuracies:	5	100.299	MG/Yr	3.00%		MG/Yr
Systematic data handling errors:		8.108	MG/Yr	0.25%		MG/Yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 117.524 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 219.889 MG/Yr

WATER LOSSES: 337.413 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 383.000 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	9	291.3	miles
Number of active AND inactive service connections:	9	17,063	
Service connection density:		59	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure: 9 60.0 psi

COST DATA

Total annual cost of operating water system:	9	$6,951,412	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$1.87	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	9	$534.76	$/Million gallons ☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

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Appendix F

SBX7-7 VERIFICATION FORMS

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SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(select one from the drop down list)*
Million Gallons
**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*
NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate		
	Method Used to Determine 2020 Population (may check more than one)	
	1. Department of Finance (DOF) or (ACS)	**American Community Survey**
	2. Persons-per-Connection Method	
X	**3. DWR Population Tool**	
	4. Other DWR recommends pre-review	
NOTES:		

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	74,907
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use

Compliance Year 2020	2020 Volume Into Distribution System *This column will remain blank until SB X7-7 Table 4-A is completed.*	2020 Deductions					2020 Gross Water Use
		Exported Water *	Change in Dist. System Storage* (+/-)	Indirect Recycled Water *This column will remain blank until SB X7-7 Table 4-B is completed.*	Water Delivered for Agricultural Use*	Process Water *This column will remain blank until SB X7-7 Table 4-D is completed.*	
	3,647	-	-	-	-	-	**3,647**

*** Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Tule Subbasin Groundwater
This water source is *(check one)***:**	
X	The supplier's own water source
	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	3,647	-	3,647

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.*

[2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water ***Fm SB X7-7 Table 4***	**2020 Population** ***Fm SB X7-7 Table 3***	**2020 GPCD**
3,647	74,907	**133**
NOTES:		

SB X7-7 Table 9: 2020 Compliance							
	Optional Adjustments to 2020 GPCD						
	Enter "0" if Adjustment Not Used						
Actual 2020 GPCD[1]	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]	TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
133	-	-	-	-	133	156	**YES**

[1] All values are reported in GPCD

*[2] **2020 Confirmed Target GPCD** is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.*

NOTES:

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Appendix G

EASTERN TULE GSA GROUNDWATER SUSTAINABILITY PLAN

A copy of the Eastern Tule Groundwater Sustainability Agency's Groundwater Sustainability Plan can be downloaded at the link below:

https://www.easterntulegsa.com/gsp

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Appendix H

2020 WATER QUALITY CCR

City of Porterville Consumer Confidence Reports can be downloaded at the link below:

https://www.ci.porterville.ca.us/departments/public_works/field_services_division/water___sewer_ma intenance.php#outer-161

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Appendix I

WATER CONSERVATION PLAN

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Version 4.0

WATER CONSERVATION PLAN

EVERY DROP COUNTS.

PRESENTED BY: FIELD SERVICES DIVISION
PUBLIC WORKS DEPARTMENT

CITY OF PORTERVILLE
555 N. PROSPECT ST., PORTERVILLE, CA 93257

REVISED BY:

JOHN LOLLIS,
CITY MANAGER

MICHAEL K. REED,
ACTING PUBLIC WORKS DIRECTOR

BRYAN B. STYLES,
DEPUTY PUBLIC WORKS DIRECTOR
& FIELD SERVICES MANAGER

MICHAEL KNIGHT,
WATER UTILITIES SUPERINTENDENT

ROMAN FERRO,
WATER SYSTEMS SPECIALIST

DENYS THOMPSON,
ADMINISTRATIVE AIDE

TABLE OF CONTENTS

PREFACE

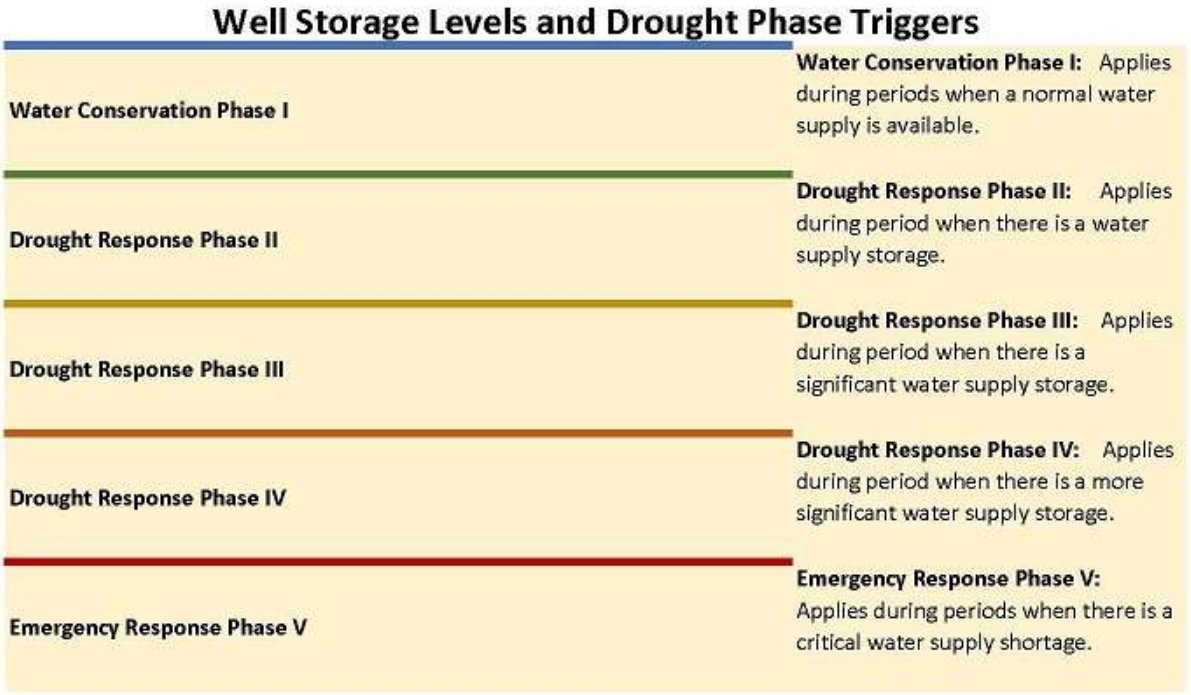
The City of Porterville water system is municipally-owned with more than 15,299 service connections, 97% of which are metered, serving a population of 55,490, with approximately 1,100 service connections outside the city limits. Water supplies for the City system are produced entirely from groundwater underlying the city, which is recharged from rainfall and runoff of the Western Sierra Nevada. The major stream contributing to the recharge of the Tule Basin Aquifer underlying Porterville is the Tule River.

Storage capacity represents over ten million gallons within the distribution system and five hillside reservoirs, three with a capacity of three million gallons, one with a capacity of three hundred and five thousand gallons, one with the capacity of five hundred and fifty thousand gallons.

A telemetry system controls the operation of 23 of the City's 35 active well pumps to maintain system pressure under varying loads. The water levels in the reservoirs are also monitored and controlled by the computerized telemetry control system.

Water conservation and awareness have always been areas of concern for the Porterville community. Less than normal rainfall and runoff makes efforts to promote water conservation a high priority. In addition to the benefits of conserving water as a limited natural resource, additional benefits accrue to the community in the form of a reduced impact on the Wastewater Treatment Plant and a reduction in energy costs when water supplies are conserved.

It is vitally important that the Water Conservation Plan be a joint partnership between the City and the General Public in order to achieve optimal effect. The Plan has been developed in five phases with each phase defined in terms of the available water supply.



Actions within each phase have been defined as either actions to be undertaken by the City or by the General Public. Due to the number of variables which affect the water conditions in existence at any one point in time, a City staff analysis of those variables will be utilized in determining the transition of the City from one phase to a more (or less) stringent phase. At such time as staff determines that water supply conditions warrant a phase change, staff will present the request to the City Council for their approval.

This plan differs from other valley community plans because the city of Porterville is in a more favorable position of having almost all of its water customers metered, which allows the City to basically control the water conservation program.

CITY WATER SYSTEM

The City has always been diligent in its efforts to provide sufficient safe and affordable drinking water to the residents of the community. Water conservation has long been a permanent part of the City's water resource management program. Efforts to that end include:

- NEW WELLS:

Over the past five years new wells have been added to the City water system in order to serve the needs of the community. Additional wells are planned for completion within the next few years.

- TELEMETRY SYSTEM:

This system controls the operation of the well pumps to maintain system pressure under varying loads. Water levels in the reservoirs are also monitored and controlled by the computerized telemetry control system. Water is usually pumped to the reservoirs during the off peak usage hours for later use by consumers. This system was designed to

operate the City wells in the most efficient and productive way possible with additional benefits of energy cost savings.

- RESERVOIRS:

The City currently operates and maintains five (5) hillside reservoirs, three (3) with a capacity of three million gallons, one (1) with a capacity of 305,000 gallons, and one (1) with a capacity of 550,000. The three largest reservoirs are usually filled during off peak hours and then release water during the high usage hours. There is also a 300,000 gallon reservoir located at the Airport which is also part of the City system. The reservoirs increase the City's ability to maintain system pressure during peak demand and fire flow situations.

- METERIZATION PROGRAM:

With over 97% of all service connections metered, the City has a goal of 100% meterization. All new connections are required to have meters.

- UTILITY BILLING NOTICE:

The City's computerized utility billing system provides consumers with their current and past water usage history for comparison purposes. While variations may be attributable to a change known to the consumer (i.e. additional persons in the home, addition of a swimming pool), it may also be the result of an undetected leak or other controllable occurrence.

- WATER AUDIT/LEAKAGE DETECTION & REPAIR PLAN:

The City will continue in its proactive plan to audit water supply usage. Upon detection of the source of any leakage, corrective action will be taken immediately in order to promote the efficient use of the existing water supply and in turn reduce the energy required to operate the system.

- NEW WATER LINE TESTING:

The City requires full pressure and leak testing of all newly constructed water lines.

- FIRE HYDRANT TESTING:

The City Fire Department schedules their annual fire hydrant testing program during the early spring and late fall to avoid the peak water use season. Such testing is required to maintain the integrity of the fire protection system.

CONSERVATION PHASING

The effectiveness of any voluntary plan ultimately depends on the public's awareness of the need for the plan. Local residents have a history of commitment to their community and support of the public welfare. It is a reliance upon this tradition that makes the distribution of public information the cornerstone of the City's Water Conservation Plan.

WATER CONSERVATION PHASE I: NORMAL WATER SUPPLY

The Water Conservation Phase I applies during periods when a normal water supply is available.

ACTIONS BY THE CITY:

Public Information Program	• Distribution of suggestions for residential, commercial, and industrial water conservation and awareness. • Coordination of public information with the local news media. • City participation in Water Awareness Month (May). • Lawn and Landscape Watering Guides will be made available upon request. • City staff will coordinate with local nurseries to compile a list of low water using trees and plants. The list will be made available at City Hall, the Corporation Yard, and the Parks & Leisure Services Department for local residents. • Coordination with local schools to encourage young people to become aware of local water issues and conditions. • Advise against outdoor watering within forty-eight (48) hours of a measurable rainfall. Measurable rainfall is defined by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) as 1/100th of one inch.
Project Review Committee	• The City's Project Review Committee (PRC) will include the evaluation of all submitted projects for water use and conservation efforts. The goal of City staff in cooperation with the developer will be to voluntarily reduce consumption of water used in the project. • City staff will assist the developer in familiarization with the Xeriscape Concept, combining creative landscaping and efficient irrigation to save water and promote attractive alternatives to traditional, high water use landscapes.
City Landscapes and Watering Schedules	• City parks, median islands, and landscaped public facilities will be watered during late night or early morning hours to the greatest extent possible. • All new landscaping projects undertaken by the City will incorporate conservation design.

Retrofit Bathroom Facilities	Water saving kits which contain toilet water conservation and low flow shower head devices will be made available to City water consumers, both residential and commercial, upon request, as funds are available.
Fire Hydrant Testing	The City's fire hydrant testing program will be scheduled during non-peak water usage times to the greatest extent possible without impairing the integrity of the City's fire protection service.

ACTIONS BY THE GENERAL PUBLIC:

Mindful Water Use	The general public will be encouraged to utilize those water conservation measures contained within the City's Public Information Program.
Voluntary Odd/Even Watering Schedule	• This schedule is encouraged, but not mandated. This plan is designed to minimize water usage and requests that the public water their lawn and shrubs according to their street address, per Exhibit 1 below. • Addresses ending in an odd number (1, 3, 5, 7, or 9) water on Tuesday, Thursday, and Saturday. Addresses ending in an even number (0, 2, 4, 6, or 8) water on Wednesday, Friday, and Sunday. There is no watering on Monday. **Watering should be avoided between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM.**

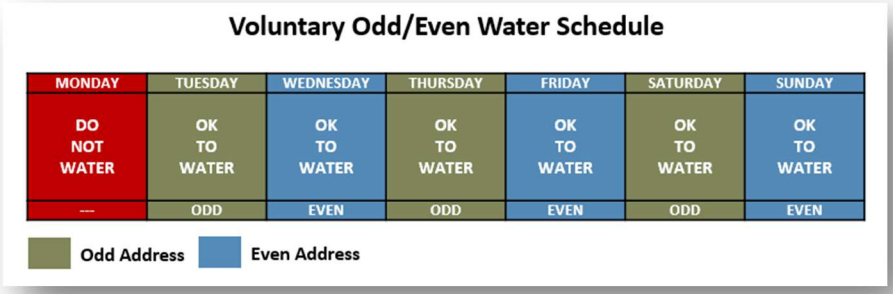


Exhibit 1

DROUGHT RESPONSE PHASE II: WATER SUPPLY SHORTAGE

Drought Response Phase II applies during periods when there is a water supply shortage. When water supply conditions start to deteriorate, the City is mandated to implement more stringent water conservation provisions for the benefit of its community. In addition to upholding the programs and provisions outlined in Phases I, the City must be diligent in its water conservation efforts by issuing penalties for non-compliance.

ACTIONS BY THE CITY:

Adoption and Enforcement of Stricter Water Regulations and Restrictions	• The City of Porterville will enforce an odd/even watering schedule for all residents. Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM. Watering shall only occur on designated watering days. Excessive run-off is prohibited, as is outdoor watering within forty-eight (48) hours of a measurable rainfall. Measurable rainfall is defined by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) as 1/100th of one inch. • Per Section 25-5.1 of the City Municipal Code, Non-compliance with the City of Porterville's water conservation regulations will result in one written warning from the City of Porterville before the issuance of a citation. A second violation within a 12 month period will result in the issuance of a citation with a fine of $100.00; a second citation will result in a fine of $200.00; a third citation will result in a fine of $500.00. Willful and egregious violations will result in issuance of a citation without a warning. Each day that a violation continues shall be regarded as a new and separate offense. • Per Section 25-5 of the City Municipal Code, "The consumer shall use reasonable care to prevent the waste of water, shall not allow water to run or waste from his property onto streets or highways, shall not use water in washing sidewalks, building entrances or lobbies or other properties to such excess that water shall flow in street gutters beyond the frontage of the properties occupied by them."
Public Information Program	The City will pursue a more aggressive distribution of information than its efforts initiated in the initial Water Conservation Phase to promote public awareness of the need to conserve water with a stronger emphasis on the water shortage condition.
Water System Pressure Reduction	The City's water system may experience reduced water pressures during high usage periods. This may deter water use for nonessential activities and encourage scheduling of landscape watering to late nights or early mornings.
City Landscapes and Watering Schedules	All City parks, median islands, and public facility landscapes will be watered during the late night or early morning hours to reduce impact on the water system during peak usage hours.
Leak Detection Water Waste	The City will continue in its proactive plan to audit water supply usage. All City staff will be reminded of the necessity of reporting any evidence of

	leaks or water waste for immediate action. There will be an emphasis on coordinated community efforts to reduce water waste.
"Waste of Water" Notices	City staff will be equipped to issue "Waste of Water" notices to consumers identified as misusing water.
Mandatory Odd/Even Watering days	Increase public education on the mandatory watering schedule program. Public outreach will emphasize changes from the Water Conservation Phase I (Voluntary) to Phase II (Mandatory).
Continuation of all Conservation Programs Established in Phase I	See Phase I

ACTIONS BY THE GENERAL PUBLIC:

Mandatory Odd/Even Watering Schedule	• Addresses ending in an odd number (1, 3, 5, 7, or 9) water on Tuesday, Thursday and Saturday. Addresses ending in an even number (0, 2, 4, 6, or 8) water on Wednesday, Friday and Sunday. There is no watering on Monday. See Exhibit 2 below. • Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM. Watering shall only occur on designated watering days. • Excessive runoff is prohibited.
Ornamental Water Features	• Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life. • The operation of ornamental fountains or other structure making similar use of water is prohibited unless the fountain uses a recycling system.
Conservation Efforts	The general public will be strongly encouraged to utilize those water conservation measures contained within the City's public information program.
Restaurants	Notices will be sent to all restaurants within the city limits requesting support of water conservation efforts by serving water to customers upon request only.
Lawn and Landscaping Watering	Mandatory implementation of the Odd/Even Watering Program initiated in the Water Conservation Phase I, all residential, commercial, and industrial landscape watering scheduled times.

Vehicle Washing and Sidewalk Hosing	• The washing of sidewalks, driveways, parking areas, patios or other paved areas is prohibited, unless it is necessary for the health and safety of the public. • The washing of automobiles, trucks, trailers, boats, and airplanes is only permitted on designated watering days. Such washing, when allowed, shall be done either by automatic car washes that recycle water or with a hand held bucket, or hand held hose equipped with a positive shutoff nozzle for quick rinses. • Per Section 25-5 of the City Municipal Code, "The consumer shall use reasonable care to prevent the waste of water, shall not allow water to run or waste from his property onto streets or highways, shall not use water in washing sidewalks, building entrances or lobbies or other properties to such excess that water shall flow in street gutters beyond the frontage of the properties occupied by them."

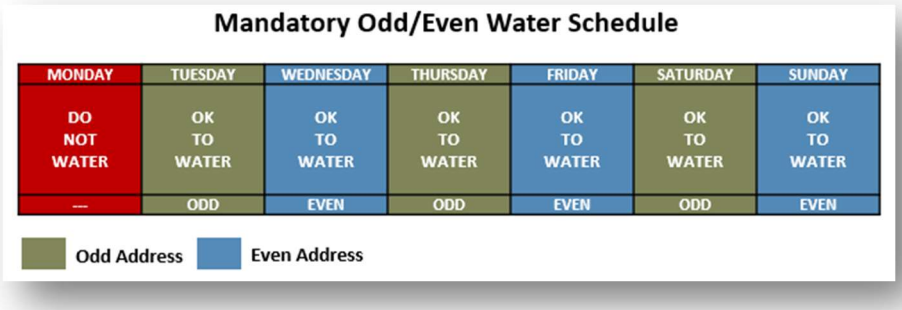


Exhibit 2

DROUGHT RESPONSE PHASE III: SIGNIFICANT WATER SUPPLY SHORTAGE

Drought Response Phase III applies during periods when there is a significant water supply shortage. In addition to upholding the programs and provisions outlined in Phases I and II, the City must be diligent in its water conservation efforts by issuing penalties for non-compliance.

ACTIONS BY THE CITY:

Adoption and Enforcement of Stricter Water Regulations and Restrictions	• The City of Porterville will enforce a two day a week odd/even watering schedule for all residents. Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM. Watering shall only occur on designated watering days. Excessive run-off is prohibited, as is outdoor watering within forty-eight (48) hours of a measurable rainfall. Measurable rainfall is defined by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) as 1/100th of one inch. • Per Section 25-5.1 of the City Municipal Code, Non-compliance with the City of Porterville's water conservation regulations will result in one written warning from the City of Porterville before the issuance of a citation. A second violation within a 12 month period will result in the issuance of a citation with a fine of $100.00; a second citation will result in a fine of $200.00; a third citation will result in a fine of $500.00. Willful and egregious violations will result in issuance of a citation without a warning. Each day that a violation continues shall be regarded as a new and separate offense. • Per Section 25-5 of the City Municipal Code, "The consumer shall use reasonable care to prevent the waste of water, shall not allow water to run or waste from his property onto streets or highways, shall not use water in washing sidewalks, building entrances or lobbies or other properties to such excess that water shall flow in street gutters beyond the frontage of the properties occupied by them."
Public Information Program	The utility billing system will begin to notify customers of restrictions on water use. The program to promote public awareness will be intensified with emphasis placed on communicating the mandatory water conservation requirements to the public.
City Landscapes and Watering Schedules	All City parks, median islands, and public facility landscapes will adopt a two-day watering schedule. If it becomes necessary, watering of City parks and median islands will be suspended and evaluated each day.
Continuation of all Conservation Programs and Regulations Established in Phases I and II	See Phases I and II

ACTIONS BY THE GENERAL PUBLIC:

Mandatory Reduction in Watering Days Durations	• Addresses ending in an odd number (1, 3, 5, 7, or 9) water on Tuesday and Saturday. Addresses ending in an even number (0, 2, 4, 6, or 8) water on Wednesday and Sunday. There is no watering on Monday, Thursday, or Friday. See Exhibit 3 below. • Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM. Watering shall only occur on designated watering days. • Excessive runoff is prohibited.
Ornamental Water Features	• Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life. • The operation of ornamental fountains or other structure making similar use of water is prohibited unless the fountain uses a recycling system.
Vehicle Washing and Sidewalk Hosing	• The washing of sidewalks, driveways, parking areas, patios or other paved areas is prohibited, unless it is necessary for the health and safety of the public. • The washing of automobiles, trucks, trailers, boats, and airplanes is only permitted on designated watering days. Such washing, when allowed, shall be done with a hand held bucket, or hand held hose equipped with a positive shutoff nozzle for quick rinses. • Per Section 25-5 of the City Municipal Code, "The consumer shall use reasonable care to prevent the waste of water, shall not allow water to run or waste from his property onto streets or highways, shall not use water in washing sidewalks, building entrances or lobbies or other properties to such excess that water shall flow in street gutters beyond the frontage of the properties occupied by them."
Water Leaks	All leaks must be treated as a priority upon discovery and repaired at the safest scheduled opportunity.

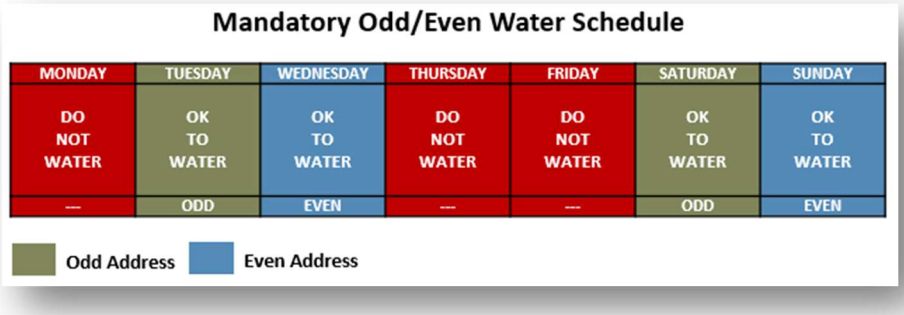


Exhibit 3

DROUGHT RESPONSE PHASE IV: SIGNIFICANT WATER SUPPLY SHORTAGE

Drought Response Phase IV applies during periods when there is a significant water supply shortage. In addition to upholding the programs and provisions outlined in Phases I, II and III, the City must be diligent in its water conservation efforts by issuing penalties for non-compliance.

ACTIONS BY THE CITY:

Adoption and Enforcement of Stricter Water Regulations and Restrictions	• The City of Porterville will enforce a one day a week odd/even watering schedule for all residents. Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM. Watering shall only occur on designated watering days. Excessive run-off is prohibited, as is outdoor watering within forty-eight (48) hours of a measurable rainfall. Measurable rainfall is defined by the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) as 1/100th of one inch. • Per Section 25-5.1 of the City Municipal Code, Non-compliance with the City of Porterville's water conservation regulations will result in one written warning from the City of Porterville before the issuance of a citation. A second violation within a 12 month period will result in the issuance of a citation with a fine of $100.00; a second citation will result in a fine of $200.00; a third citation will result in a fine of $500.00. Willful and egregious violations will result in issuance of a citation without a warning. Each day that a violation continues shall be regarded as a new and separate offense. • Per Section 25-5 of the City Municipal Code, "The consumer shall use reasonable care to prevent the waste of water, shall not allow water to run or waste from his property onto streets or highways, shall not use water in washing sidewalks, building entrances or lobbies or other properties to such excess that water shall flow in street gutters beyond the frontage of the properties occupied by them."
Public Information Program	The utility billing system will begin to notify customers of restrictions on water use. The program to promote public awareness will be intensified with emphasis placed on communicating the mandatory water conservation requirements to the public.
City Landscapes and Watering Schedules	All City parks, median islands, and public facility landscapes will adopt a two-day watering schedule. If it becomes necessary, watering of City parks and median islands will be suspended and evaluated each day.
Continuation of all Conservation Programs and Regulations Established in Phases I, II and III	See Phases I, II and III

ACTIONS BY THE GENERAL PUBLIC:

Mandatory Reduction in Watering Days Durations	• Addresses ending in an odd number (1, 3, 5, 7, or 9) water on Saturday. Addresses ending in an even number (0, 2, 4, 6, or 8) water on Sunday. There is no watering Monday through Friday. See Exhibit 3 below. • Watering is prohibited between the hours of 5:00 AM to 10:00 AM and 5:00 PM to 10:00 PM. Watering shall only occur on designated watering days. • Excessive runoff is prohibited.
Ornamental Water Features	• Filling or re-filling ornamental lakes or ponds is prohibited, except to the extent needed to sustain aquatic life. • The operation of ornamental fountains or other structure making similar use of water is prohibited unless the fountain uses a recycling system.
Vehicle Washing and Sidewalk Hosing	• The washing of sidewalks, driveways, parking areas, patios or other paved areas is prohibited, unless it is necessary for the health and safety of the public. • The washing of automobiles, trucks, trailers, boats, and airplanes is only permitted on designated watering days. Such washing, when allowed, shall be done with a hand held bucket, or hand held hose equipped with a positive shutoff nozzle for quick rinses. • Per Section 25-5 of the City Municipal Code, "The consumer shall use reasonable care to prevent the waste of water, shall not allow water to run or waste from his property onto streets or highways, shall not use water in washing sidewalks, building entrances or lobbies or other properties to such excess that water shall flow in street gutters beyond the frontage of the properties occupied by them."
Water Leaks	All leaks must be treated as a priority upon discovery and repaired at the safest scheduled opportunity.

Mandatory Odd/Even Water Schedule

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
DO NOT WATER	DO NOT WATER	DO NOT WATER	DO NOT WATER	DO NOT WATER	OK TO WATER	OK TO WATER
-	-	-	-	-	ODD	EVEN

Odd Address Even Address

Exhibit 4

EMERGENCY RESPONSE PHASE V: CRITICAL WATER SUPPLY SHORTAGE

Applies during periods when there is a severe water supply shortage as determined by California State mandate, City Manager, system outage, equipment failure, contamination of water supply, or other emergency. In addition to upholding the programs and provisions outlined in Phases I, II, III and IV, the City must be diligent in its water conservation efforts by issuing penalties for non-compliance.

ACTIONS BY THE CITY:

Rate Structure Enhancement	A 20% water rate increase on all residential and landscape accounts will go into effect. This rate increase will encourage water conservation and will also serve as a provision to recover the lost revenues from water conservation.
City Landscapes and Watering Schedules	Watering of City parks and median islands will be suspended and evaluated each day.
Continuation of all Conservation Programs and Regulations Established in Phases I, II, III and IV	See Phases I, II, III and IV

ACTIONS BY THE GENERAL PUBLIC:

Lawn and Landscaping Watering	Lawn and landscaping watering is prohibited.
Vehicle Washing	Vehicle washing should be accomplished either by automatic car washes that recycle water or with buckets and hoses equipped with a shut-off nozzle.
Continuation of all Conservation Programs and Regulations Established in Phases I, II, III and IV	See Phases I, II, III and IV

Appendix J

DROUGHT RISK ASSESSMENT

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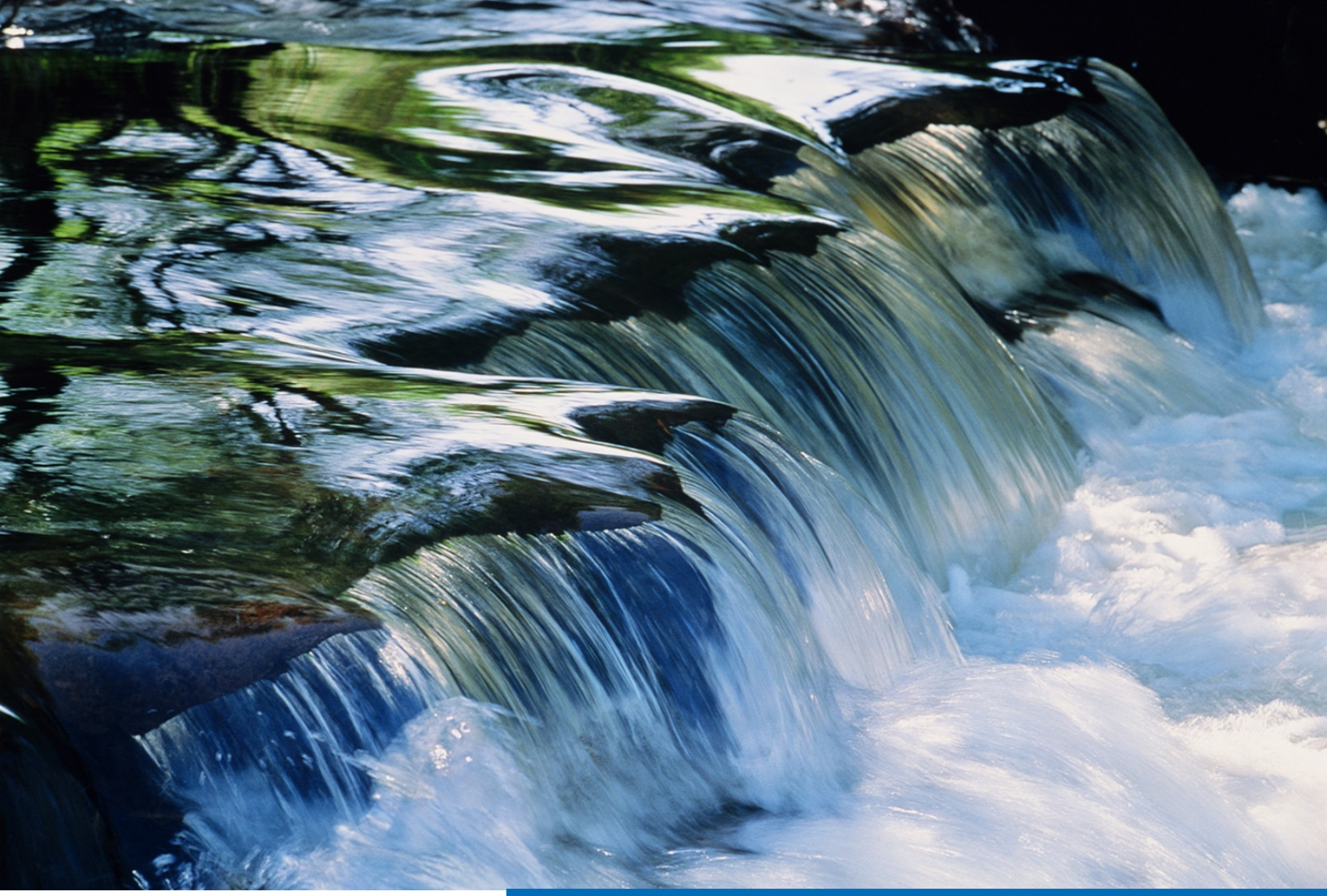

City of Porterville
2020 Urban Water Management Plan

DROUGHT RISK ASSESSMENT

DRAFT FINAL | JANUARY 2022

carollo

City of Porterville
2020 Urban Water Management

DROUGHT RISK ASSESSMENT

DRAFT FINAL | JANUARY 2022

This document is released for the purpose of information exchange review and planning only under the authority of Anthony M. Cemo, JANUARY 2022, State of California, P.E. No. 87929.

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Abbreviations

AB	California Assembly Bill
ac-ft	acre-feet
AFY	acre-feet per year
BG	block group
CDFA	California Department of Food and Agriculture
CEC	California Energy Commission
CPUC	California Public Utilities Commission
DRA	Drought Risk Assessment
DWR	California Department of Water Resources
ETGSA	Eastern Tule Groundwater Sustainability Agency
°F	Fahrenheit
FKC	Friant-Kern Canal
gpcd	gallons per capita day
GQ	Group Quarters
GSAs	groundwater sustainability agencies
GSPs	groundwater sustainability plans
IMP	2020 Integrated Master Plan
FKC	Friant-Kern Canal
MG	million gallons
MHI	Median Household Income
MJLHMP	Multi-Jurisdictional Local Hazard Mitigation Plan
RC	Risk Component
SB	California Senate Bill
SGMA	Sustainable Groundwater Management Act
State Water Board	State Water Resources Control Board
UWMP	Urban Water Management Plan
WCP	water conservation plant
WSCP	water shortage contingency plan

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DROUGHT RISK ASSESSMENT

1.0 Purpose and Objectives

As part of the latest guidance under Water Code Section 10635(b), suppliers are required to prepare a Drought Risk Assessment (DRA) with descriptions of data and methods used, basis for supply shortage conditions, determination of the reliability of sources, and a comparison of the total water supplies and uses during the drought. The key sections of the DRA are a combination of sections from the Urban Water Management Plan (UWMP) and the Water Shortage Contingency Plan (WSCP). The DRA will be submitted every five years with the UWMP and will assist the City of Porterville with future annual water supply and demand reporting. At this time, the California Department of Water Resources (DWR) has not established the annual reporting requirements.

The DRA contains the following:

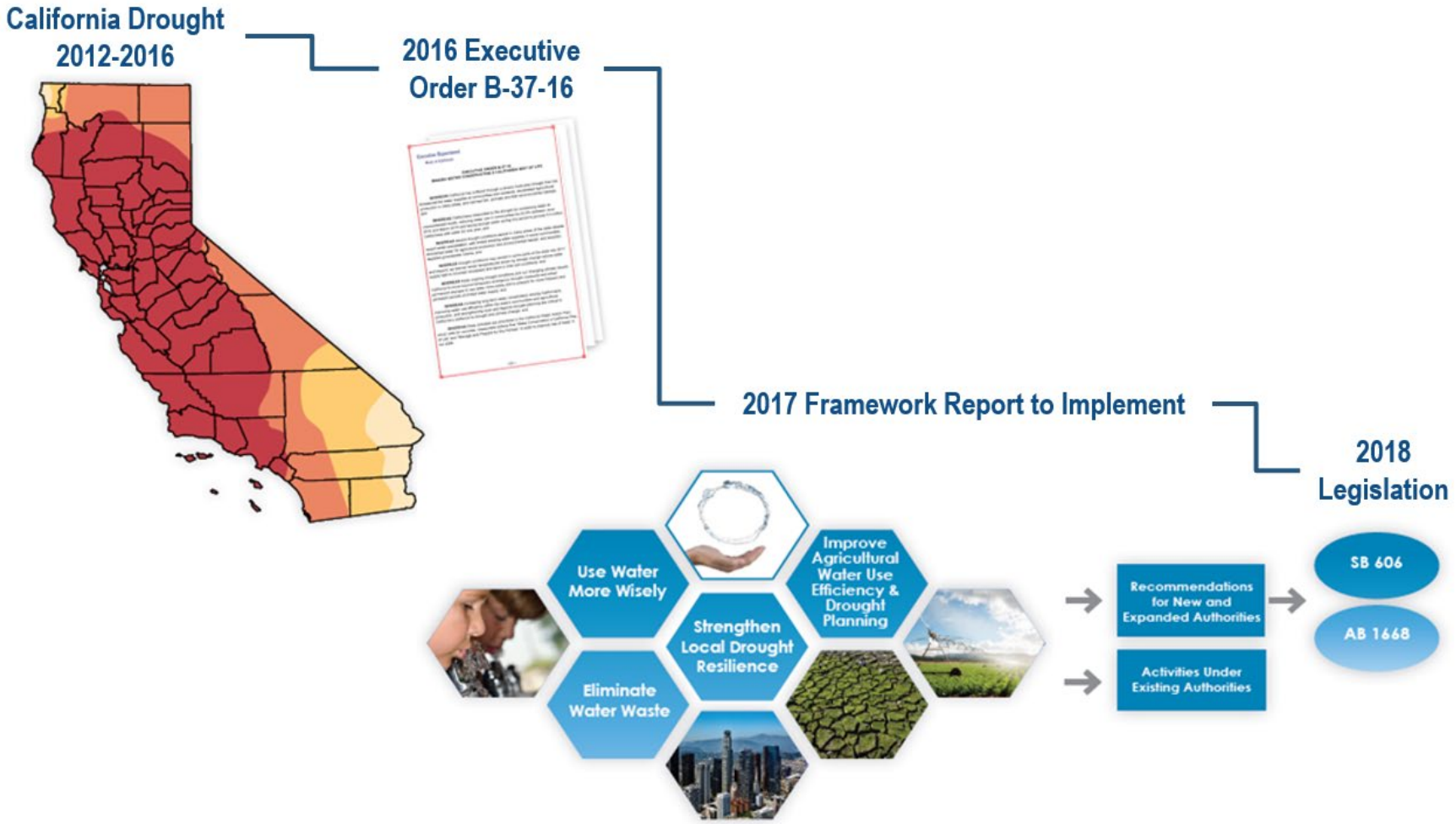
1. New legislation that triggered the need for the DRA.
2. Water system overview, which includes a summary of the population, demand, and supply forecast through the year 2040.
3. Drought risk assessment and vulnerability considerations.
4. Response actions during supply shortage conditions.
5. Next steps.

2.0 New Legislation for Drought Resilience

As a result of the historic California drought from 2012 through 2016, Executive Order B-37-16 was issued by Governor Brown to establish a long-term framework for water conservation and drought planning. The initial framework to implement Executive Order B-37-16 was prepared in 2017 by DWR, the State Water Resources Control Board (State Water Board), the California Public Utilities Commission (CPUC), the California Department of Food and Agriculture (CDFA), and the California Energy Commission (CEC). It outlined actions that could be implemented by existing authorities as well new actions that could be expanded with a new legislature. The framework focused on using water more wisely, eliminating water waste, strengthening local drought resilience, and improving agricultural water use efficiency and drought planning. The framework also informed the development of Senate Bill (SB) 606 (Hertzberg) and Assembly Bill (AB) 1668 (Friedan) in 2018.

The key elements from the new legislation that impact the UWMP are eliminating water waste and strengthening local drought resilience. As part of the new requirements for strengthening local drought resilience, a DRA must be performed every 5-years in addition to conducting an annual water supply and demand assessment. The annual reporting will start in July 2022 and will include information relating to anticipated shortages, triggered actions, compliance and enforcement actions, and communication actions as outlined in the WSCP as outlined in Chapter 8.

An overview of the events that led to the new legislation is shown on Figure 1.



Source: (DWR - Making Water Conservation a California Way of Life, 2018)

Figure 1 New Legislation Resulting from California Drought

3.0 Water System Overview

The City's water service area encompasses approximately 18.6 square miles, which includes, the airport, agricultural/conservation land in the south east and the limits of the City proper. The City is located in central California on the east side of the San Joaquin Valley. The City is adjacent to the Sequoia National Forest and the Sierra Nevada Foothills in Tulare County. Porterville is approximately 70 miles southeast of the City of Fresno and 50 miles north of the City of Bakersfield. The City's service area climate is a semi-arid, Mediterranean environment with cold winters, warm summers, and moderate rainfall (11.6 inches/year average). Temperatures average mid 50's in the winter and high 90's in the summer months with peaks upward to 110 degrees Fahrenheit (°F). The City's urban development boundary is primarily residential land use contributes approximately 60 percent of the total water demand with the remaining water demand made up by commercial, institutional, industrial, and landscape irrigation demands throughout the City.

The City's water distribution system consists of approximately 258 miles of pipelines ranging in diameters from 4 to 16-inches, 36 active wells (2 of which are stand-by), and six active water storage tanks totaling 10.15 million gallons (MG).

3.1 Historical and Projected Population

The water service population from 2001 to 2010 was taken from the City's 2015 UWMP. At the time, the growth rate was calculated at approximately 2.5 percent. As identified in the 2015 UWMP, the future growth rate from 2005 to 2020 is consistent over time and continues to be approximately 2.3 percent on average which is shown in Figure 2. The water service population from 2015 to 2018 was prepared by the 2020 Integrated Master Plan (IMP). The projected water service populations were calculated using a growth rate of 2.5 percent. The historical and projected population is shown in Figure 2. The water service population in 2020 is estimated at 77,692 from the City's IMP. Table 1 shows the current and projected water service population for the City. The Porterville IMP shows a population of 127,307 at 2040 based on the 2020 water service population

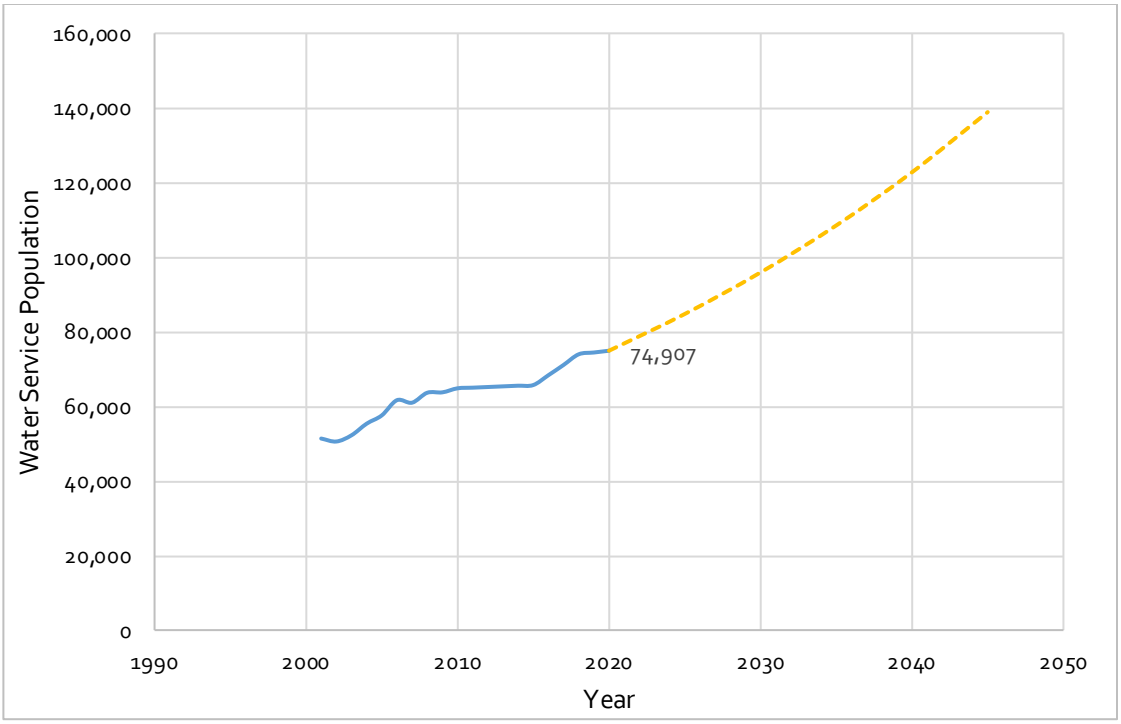


Figure 2 Historical and Projected Water Service Population

Table 1 Water Service Population – Current and Projected

	2020	2025	2030	2035	2040
Population Served[(1)]	74,907	87,901	99,452	112,521	127,307

Notes:
(1) Growth rate set at 2.5 percent, consistent with City's 2020 Integrated Master Plan.

3.2 Local Water Supply

The City drinking water supply is solely from groundwater extraction wells. The City's groundwater supply is extracted using 36 active wells scattered throughout the water service area that pump directly into the water distribution system and surrounding above ground water storage tanks. Extracted groundwater is chlorinated at the wellheads to provide disinfectant residual in the distribution system.

The City's groundwater system is supplied from the east side of the Tule Sub-basin. The Tule sub-basin sits on a series of overlapping alluvial fan sedimentary deposits sourced from runoff from the Sierra Nevada mountain range east of the City. Near the City, the natural waterways that promote supply to the groundwater basin are Deer Creek and the Tule River. Tule River flow is managed by Lake Success for flood control and recreation at Lake Success located just east of the City. The Sustainable Groundwater Management Act (SGMA classifies groundwater basins into four various categories of prioritization (very low, low, medium, and high. Basins that are classified as medium or high priority are required to develop groundwater sustainability agencies (GSAs, develop groundwater sustainability plans (GSPs and manage groundwater for long-term sustainability. The Tule Subbasin is considered high priority basin within SGMA and the Eastern Tule Groundwater Sustainability Agency (ETGSA completed their GSP in 2019. DWR records indicate that the groundwater elevation is approximately 300 feet below ground surface.

3.3 Existing and Projected Demands

The City's water demand is primarily residential which consist of both single family and multi-family residential land uses. The City currently has a total of 17,063 water service connections with 97 percent of those connections metered. The 2020 water use was 3,647 MG (11,192 acre-feet [ac-ft]), this demand was approximately 1,200 MG less than what was projected in the 2015 UWMP. The City's projected demands to 2040 are included in Table 2. The 2025 - 2040 demands take into consideration, population growth, development by land use within the City's UDB, capital improvement developments, as well as consumer consumption behavior.

Table 2 Water Service Population – Current and Projected

Use type	Projected Water Use (MG)				
	2020	2025	2030	2035	2040
Single Family Residential	2,025	3,182	3,607	4,074	4,621
Multi-Family Residential	390	612	694	784	889
Commercial/Institutional	448	704	798	901	1022
Industrial	10	16	18	20	23
Landscape Irrigation	223	351	398	449	509
Other	148	232	263	297	337
Losses	403	634	719	811	920
Agricultural Irrigation	0	0	0	0	0
Total	**3,647**	**5,731**	**6,497**	**7,337**	**8,322**

The supply and demand balance for the multi-dry year scenario considers the fluctuation in demands reacting to dry conditions in the first three years and then significantly reduce demands to reflect conservation efforts for the third, fourth, and fifth consecutive drought years. It is assumed that the surface water allocations via the Friant-Kern Canal (FKC) are 100 percent the first year, 75 percent the second year, 50 percent the third year, and 25 percent the fourth and fifth years. As discussed, the City will meet their entire demand with groundwater.

3.4 Supply and Demand Balance

The City's sustainable yield from the Tule groundwater basin is estimated to be 5,655 MG (17,355 acre-feet per year [AFY]). The City presently and historically meets all water demand, regardless of hydrologic conditions, with groundwater, however during periods of drought, the City does implement water conservation efforts in addition to passive savings from consumer behavior over the last five years. Table 3 lists the supply and demand balance under normal hydrologic conditions and utilizing conservative per capita demand estimates as indicated in the City's IMP.

Table 3 Normal Year Supply and Demand Balance

Use Type	Projected Water Use (MG)			
	2025	2030	2035	2040
Demand Total	5,731	6,497	7,337	8,322
Water Supply	8,549	8,841	9,173	9,546
Difference	**2,819**	**2,344**	**1,836**	**1,224**

The supply and demand balance for the multi-dry year scenario is shown in Table 4. Chapter 7 of the UWMP describes in detail the demands for the consecutive dry-years in addition to the fluctuation in demand over the course of the period. Compared to Table 3, the groundwater recharge volume progressively decreases throughout the drought due in part to reduced annual surface water allocations to FKC contractors and the City, therefore available surface water for groundwater recharge is reduced.

Table 4 Multi-Dry Year Water Balance

Consecutive Dry-Year	Use Type	Projected Water Use (MG)			
		2025	2030	2035	2040
First Year	**Demand**	**4430**	**4961**	**5556**	**6223**
	Sustainable Yield	5655	5655	5655	5655
	Groundwater Recharge	2230	2522	2854	3227
	Surface Water Exchange	664	664	664	664
	Total Supply	**8550**	**8842**	**9174**	**9546**
	Difference	4120	3881	3617	3323
Second Year	**Demand**	**4726**	**5294**	**5929**	**6640**
	Sustainable Yield	5655	5655	5655	5655
	Groundwater Recharge	1784	2018	2283	2581
	Surface Water Exchange	580	580	580	580
	Total Supply	**8019**	**8253**	**8518**	**8816**
	Difference	**3293**	**2959**	**2589**	**2176**
Third Year	**Demand**	**4789**	**5364**	**6007**	**6728**
	Sustainable Yield	5655	5655	5655	5655
	Groundwater Recharge	1673	1892	2141	2420
	Surface Water Exchange	559	559	559	559
	Total Supply	**7886**	**8105**	**8354**	**8634**
	Difference	**3097**	**2741**	**2347**	**1905**
Fourth Year	Demand	4342	4863	5447	6101
	Sustainable Yield	5655	5655	5655	5655
	Groundwater Recharge	1115	1261	1427	1613
	Surface Water Exchange	453	453	453	453
	Total Supply	**7223**	**7369**	**7535**	**7721**
	Difference	**2881**	**2505**	**2088**	**1620**
Fifth Year	**Demand**	**3491**	**3910**	**4379**	**4905**
	Sustainable Yield	5655	5655	5655	5655
	Groundwater Recharge	1115	1261	1427	1613
	Surface Water Exchange	453	453	453	453
	Total Supply	**7223**	**7369**	**7535**	**7721**
	Difference	**3732**	**3459**	**3156**	**2816**

3.5 Commitment to Water Use Efficiency

The City of Porterville has been successful at implementing conservation measures to reduce water use within their service area. Figure 3 shows the City's per capita demand from 2000 to 2020. The City has reduced water demands by approximately 27 percent between 2010 and 2015 and have maintained an average 130 gallons per capita per day (gpcd) demand between 2015 and 2020. The most significant reduction in demand was between 2013 and 2015 from 179 gpcd to 130 gpcd.

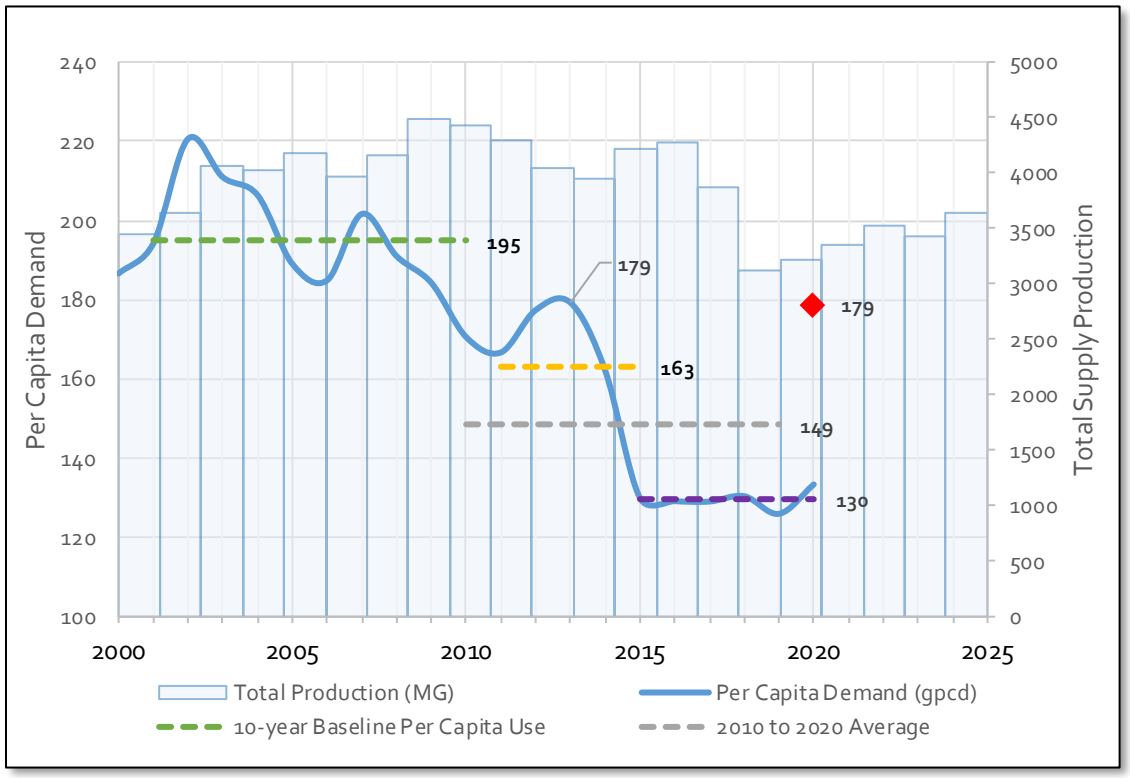


Figure 3 Historical Per Capita Demand

Water conservation measures are included in the City's existing water conservation plan (WCP) adopted in 2015. The WCP is included in Appendix I and the Water Shortage Contingency plan water shortage response actions are outlined in Chapter 8 of this UWMP. Chapter 8 crosswalks the five WCP water supply shortage levels to the six WSCP levels listed in Chapter 8. The WCP water use policies have been implemented in the recent past to prevent water waste and to encourage conservation measures throughout the City. The following water supply shortage response measures are included in the WSCP.

- Public Information Program:
  - City staff organize and provide communication between public and City Council to effectively communicate water conservation phasing, awareness, landscape irrigation techniques, system changes, and coordination with City forces throughout each shortage response action.

- Upgrade and Maintenance of Distribution System:
  - Since the WCP was adopted in 2015, the City has installed additional new wells to augment the water supply in order to meet drought demands. The continually monitors, well pump pressure and flow and water storage reservoir volumes to operate the City wells in the most efficient and productive way possible with additional benefits of energy cost savings. Additionally, the City has continued to upgrade its water distribution system with the recent completion of capital improvement plan.
- Conservation Measures:
  - The most effective conservation measure the City utilizes is their water meter program. The majority of the City's water services are metered and all new water service connections are required to be metered. As water shortage response actions of the WSCP are implemented, watering schedules are implemented to promote effective landscape irrigation for City parks, median islands, landscaped public facilities. Additionally, landscape irrigation schedules are implemented for residents based on even/odd addresses. Stricter conservation efforts prohibit ornamental water features, vehicle washing, sidewalk hosing is restricted. For the Critical water supply shortage, the City implements a 20 percent rate increase on all residential and landscape water service accounts. This increase both encourages water conservation as well as serves as a mean to recover loss revenues from water conservation.
- Water Audit/Leakage Detection and Repair Plan:
  - The City continues a proactive to audit water supply usage. Upon detection of any leakage, corrective action is immediately taken by City forces. This promotes efficient use of the existing water supply, protects the distribution system components, maintains the water quality, and reduces energy to operate the system. As new water lines are installed, the City requires full pressure and leak testing of all newly constructed water lines.

4.0 Drought Risk Assessment

4.1 Five-Year Drought Risk Assessment

A summary of the City's water supply drought risk assessment from 2021 through 2025 is summarized in Table 5. The City presently and historically has met all of their demands from groundwater and actively uses surface water allocations for groundwater recharge throughout the year. Groundwater recharge is not assumed to be a WSCP planned action since it's the City's status quo. Additionally, the City is still well below their sustainable yield value as indicated in the ETGSP therefore, there is sufficient supply to meet projected demands within the next five years.

Table 5 Five-Year Drought Risk Assessment Tables to Address CWC Section 10635(b)

2021	Total
Gross Water Use	3,738
Total Supplies	7,890
Surplus/Shortfall without WSCP Action	4,151
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	4,151
2022	**Total**
Gross Water Use [Use Worksheet]	3,832
Total Supplies [Supply Worksheet]	7,844
Surplus/Shortfall without WSCP Action	4,012
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	4,012
2023	**Total**
Gross Water Use [Use Worksheet]	3,927
Total Supplies [Supply Worksheet]	7,863
Surplus/Shortfall w/o WSCP Action	3,936
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	3,936
2024	**Total**
Gross Water Use [Use Worksheet]	4,026
Total Supplies [Supply Worksheet]	7,798
Surplus/Shortfall without WSCP Action	3,773
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	3,773
2025	**Total**
Gross Water Use [Use Worksheet]	4,126
Total Supplies [Supply Worksheet]	7,223
Surplus/Shortfall without WSCP Action	3,0976
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit	N/A
WSCP - use reduction savings benefit	N/A
Revised Surplus/(shortfall)	N/A
Resulting percent Use Reduction from WSCP action	3,096

4.2 Drought and Water Shortage Risk and Vulnerability Assessment

Water Code Division 6 Part 2.55 Section 8 Chapter 10 (Assembly Bill 1668) requires DWR, in consultation with other agencies and an advisory group, to identify small water suppliers and rural communities that are at risk of drought and water shortage. DWR defines the City of Porterville as a rural community that is self-supplied since its supply is solely from groundwater. This assessment is the first statewide effort to systematically consider water shortage risks to rural communities and should be continuously observed as better datasets and scoring methods become available. Findings are to be shared within counties, GSA's, the public, and other relevant regional groups.

Using the rural community risk scores public dataset provided by DWR, Porterville was examined and received a numeric risk score, which is derived from a set of indicators developed from a stakeholder process. Indicators include five components relating to risk of drought and water shortage vulnerability. These five components are classified into three general categories representing vulnerability, as seen in Figure 4 and discussed below. The output risk score ranges from 0 to 100, where 100 is the highest risk. This is a rescaled risk score, which means that all numeric scores are relative to the other communities examined in California.

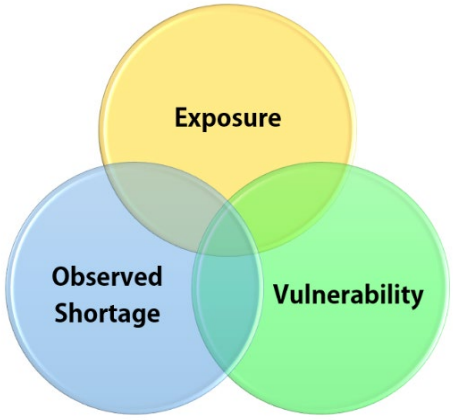


Figure 4 Grouping of Risk Indicators

4.2.1 Exposure to Hazard

As defined by DWR for the dataset provided, exposure represents the degree to which a water supplier's service area and/or a community is exposed to various hazardous environmental conditions and events that could lead to drought and/or water shortage. The risk scoring includes the likelihood of the intensity, severity, duration, and frequency for water shortage and drought in a given location. For the purpose of this DRA, this includes risks based on modeled future projections with climate change impacts (Risk Component 1, RC1) and recent hazardous conditions and events (Risk Component 2, RC2). Appendix A provides a detailed description and score specifically for Porterville for each risk indicator listed below:

- Climate change vulnerability uses three primary risk factors as indicators for scoring:
  - Temperature Shift: Projected change in heat by mid century
  - Wildfire: Projected severe or high sever risk for each system boundary or community
  - Saline Intrusion Risk: Susceptibility to sweater intrusion
- Recent hazardous conditions and events use ten primary risk factors as indicators for scoring:
  - Drought Early Warning: Annual updated early drought risk warning.
  - Wildfire Risk: Modelled current risk maximum for each census block group.
  - Fractured Rock Area: Fractured rock area (within the groundwater basin).
  - Population Growth: Projected population growth

- Water Quality Index: Domestic well water quality risk (includes areas outside of alluvial basins).
- Subsidence Presence: Record of subsidence.
- Salt Presence: Record of salts in groundwater basin.
- Over drafted Basin: Critically over drafted groundwater basin.
- Declining Water Levels: Declining groundwater levels.
- Surrounding Irrigated Agriculture: Presence of irrigated agriculture in surrounding basin.

The City of Porterville Scored a 26 for climate change vulnerability, RC1, which is equivalent to the average score for rural communities. The City scored a Recent Hazardous Conditions Score, RC2, of 47 which is just slightly below the statewide average score of 48.

4.2.2 Vulnerability

As defined by DWR for the dataset provided, vulnerability is the propensity or predisposition to be adversely affected. Such predisposition constitutes an internal characteristic of the affected element, whereas exposure to a hazard is a condition or event to which the affected element (i.e., a water supplier) is subjected. Vulnerability is quantified by a series of social and physical factors as they relate to groups of self-supplied residences. These groupings spatially are represented by US Census Block Groups. As done for the small water supplier vulnerability, self-supplied community vulnerability is quantified using (Risk Component 3, RC3) physical and (Risk Component 4, RC4) organizational vulnerability factors.

Self-supplied community vulnerability uses two risk indicators for scoring:

- Well Depth Flag: Portion of groundwater unit(s) that intersect with the census block group have relative shallow domestic wells.
- Well Depth Proportion: Proportion of Public Lands Survey Sections in block group where the max depth of domestic wells is 10 percent of more shallow than max of public wells.

Organizational vulnerability is a single aggregate indicator including 14 separate indicators, which are listed in Appendix A with description and individual average score. This risk indicator in summary considers demographic variables, population characteristics including age, residence type, income, and education.

The City did not receive a score for the self-supplied community vulnerability which represents the City's wells are not considered shallow with respect to the Census Block Group. Additionally, the City provides water to most areas within their water service area. The statewide average for self-supplied community vulnerability is 87. The City's organization vulnerability risk score is 77 whereas the statewide average score is 45.

4.2.3 Water Shortage Record

Recent history of shortage and drought impacts are incorporated into the vulnerability assessment (Risk Component 5, RC5), which include risk indicators of reported household outages in domestic wells and private wells. Records of these recent outages are kept by the State and managed by DWR. This is used to identify vulnerable areas that are prone to repeat outages due to well level fluctuation or other sensitivities.

Water Shortage Record vulnerability uses two risk indicators for scoring:

- Reported Household Outages on Domestic Wells: Presence of one or more households with reported outages (supplies from domestic well) in Census Block Group.
- Reported Household outages on Private Well: Proportion of households with reported outages (supplied from private well) in Census Block Group.

The average score for water shortage record vulnerability for self-supplied communities is 81, whereas the City scored a 56.

4.2.4 Drought and Water Shortage Risk Score

Calculations provided in the public dataset for risk scores and indicators are in accordance with California Water Code Section 10609.42 and completed through a stakeholder evaluation process between the years 2018 and 2020. Approximately 5,000 Census Block Groups were analyzed for the method of aggregation for scoring communities. For each selection, variables or components were rescaled between 0 and 100 then combined using the equation provided in Appendix A. Scores are then calculated for each component and added together, allowing for identification of the risk level and weight of risk factors. Additional details regarding the risk scoring and methodology used to assess the BBLDWP service area are located in Appendix A.

A total of eleven census blocks or "geoids" were identified in the rural and self-supplied communities' dataset that include City's service area. These eleven geoids were averaged to provide a summary of each component representing the City's system and are as follows:

- Score RC1: 26 = Exposure to climate change.
- Score RC2: 47 = Exposure to recent hazardous conditions and episodic events.
- Score RC3: 0 = Physical vulnerability.
- Score RC4: 77 = Organizational vulnerability.
- Score RC5: 56 = Record of drought impacts.

The final risk score assessed for all five components equated to 60.4 out of 100 for Porterville. This score is above average the rural and self-supplied communities final score of 41.8. This demonstrates that the City is considered to have a higher-than-normal drought and water shortage risk.

4.3 Climate Change Considerations

Cal-Adapt Extended Drought tool displays hydrologic data projected to specific date ranges of this upcoming century. Early Century is considered 2023 to 2042 and late century 2051 to 2070. This tool explores data for two 20-year drought scenarios, earlier and latter part of the century, derived from meteorological and hydrological simulations. Cal Adapt includes projected max/min temperatures, precipitation, evapotranspiration, snow water equivalent, and runoff values for a period of an extended drought period of up to 20 years Data from the Cal-Adapt Extended Drought Tool was analyzed to summarize the potential impacts on water supplies related to climate change with respect to historical data. A summary of the tool outputs is summarized in Table 6 below.

As mentioned, the City and much of the California Central Valley is completely reliant upon groundwater from the Tule subbasin for its drinking water supply. The California Water Resiliency Portfolio summaries the effects of climate change on these supplies as listed below:

- Rising winter temperature will reduce mountain snowpack in the Sierra Nevada mountain range, thus reducing spring/summer runoff and increasing winter floods.
- Increasing temperatures will mean higher risk of wildfire to fire-prone areas, decreasing watershed health and habitat thus reducing water runoff quality in reservoirs, streams, and rivers.
- Increased frequency and intensity of periods of drought.
- Stresses on existing infrastructure may not meet supply expectations of communities and agriculture.
- Current health of natural ecosystems tends to force species to migration potentially affecting other habitats.
- Increased demand with decreasing supplies from both population and economic growth.

Maximum temperatures are shown to increase approximately 5.8 percent and 9.8 percent from the observed historical for both the early and late century drought conditions, respectively. The precipitation depth is shown to decrease approximately 43 to 45 percent for the entire extended drought condition, therefore reduce runoff between 48 percent to 59 percent between both the early and late drought conditions, respectively. The snow water equivalent is 0-inches since it rarely snows in Porterville, therefore this is not a measured value.

Table 6 Extended Drought Scenario Projections

Hydrologic Parameter	Early Century Drought	Late Century Drought	Observed Historical
Max. Temperatures (°F)	82.0	85.6	77.2
Min. Temperatures (°F)	53.1	56.3	49.0
Precipitation (inches)	7.7	7.6	11.0
Evapotranspiration (inches)	5.5	6.6	9.4
Snow Water Equivalent (inches)	0.0	0.0	0.0
Runoff (inches)	0.5	0.5	0.8

4.4 Seismic Risk Assessment and Mitigation Plan

The City of Porterville is included in the Tulare County Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP). Chapter 7 describes in detail the mitigation actions and goals the County is striving towards specifically for earthquake hazards. The entire County MJLHMP is included in Appendix L of the UWMP for reference.

5.0 Water Shortage Response Action

The City municipal code section 25-32A.27: City Water Conservation Plan states, "The City's Water Conservation Plan is deemed to be the City's "water shortage contingency plan" as per applicable state law". As discussed in Chapter 8 of this UWMP, the City's current WCP five water supply shortage levels correspond to the six water shortage levels outlined in the water code by a crosswalk authorized by Water Code Section 10632(a)(3)(B). Therefore, the City's WCP levels are further expanded to meet the DWR guidelines and provide water shortage response actions to the six levels identified in the water code.

The goal of water shortage response actions outlined in Chapter 8 are to have a procedure for managing and mitigating shortages that allow the City to adequately respond in an efficient and effective manner. A summary of the shortage levels and response actions are included in Chapter 8 of this UWMP. If there is a shortfall of supply while performing the drought risk assessment, the City should consult the water shortage response actions to use as a baseline to identify possible water conservation measures to mitigate supply shortages.

6.0 Conclusion and Recommended Next Steps

The City's DRA outlines the performance of the City's water supply during multiple hydrologic conditions; normal, single-dry, and multi-dry year period. It's concluded that the City has sufficient supplies to meet the anticipated demands to the year 2040. Using the dataset provided by the DWR to assess the City's vulnerability for rural and self-supplied communities, Porterville is considered as an above average risk for drought and water shortage when compared to other water supplies statewide. The City continues to diligently secure and expand future groundwater augmentation supplies in the near future to meet anticipated demand and continues to investigate diverse water supplies to diversify their supply portfolio.

As part of the new 2018 legislation for UWMPs, annual water shortage reporting will be required starting July 2022. Therefore, the information listed in Table 5 should be reviewed, updated, and revised on an annual basis and for significant changes in the City's water system supply and demand.

Appendix A

RISK AND VULNERABILITY ASSESSMENT

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Table A.1 RC1 – Exposure to Climate Change

Risk Factor	Risk Factor Measure Description	City of Porterville Average Score	Self-Supplies Communities Average Score
RC1a - Temperature Shift	Projected change in max temperatures by mid-century (averaged across models)	59	49
RC1b - Wildfire Risk	Projected area burned (averaged across all GCMs) by 2035-2064, RCP8.5; spatial join with Block groups	0	1
RC1c - Saline Intrusion Risk	Spatial extent of projected SLR under RCP 8.5 by 2040 (1 m) into coastal aquifers; spatial join with Block groups	18	23
	Total Component Score	**26**	**24**

Notes:
(1) Risk Factor descriptions and codes are provided in Part 2: Appendix 1 Drought and Water Shortage Risk Scoring: California's Small Water Supplier and Self-Supplied Communities (DWR).
(2) Average of the 28 Geoids located within Porterville and East Porterville/

Table A.2 RC2 – Exposure to Recent Hazardous Conditions and Episodic Events

Risk Factor	Risk Factor Measure Description	City of Porterville Average Score	Self-Supplies Communities Average Score
RC2a - Drought Early Warning	Annual Updated Early Drought Risk Warning: Less than 70 percent of average precipitation by January 31st for that water year = high risk of drought	100	100
RC2b - Wildfire Risk	Modelled current risk maximum for each Census Block Group: Use CalFire Scoring HAZ_CODE: Moderate (1)= .33; High (2)= .67; Very High (3) =1; no score =0 (no or low risk); Took max for each Census BG with spatial join in ArcGIS	13	85
RCdc - Geology	Communities in Fractured Rock Areas (1) or not (0)	14	100
RC2d - Basin Subsidence	Documented Impacts #7.b Subsidence Points; recoded to 0,.5,1 from original points of 0,3,10, then associated to Block groups	4	4
RC2e - Basin Salts	Documented Impacts #7.c Salt Intrusion Points	0	100
RC2f – Over Drafted Basin	Yes (1)/no (0) of whether area is in critical over drafted basin	100	100
RC2g - Chronic Declining Water Levels	Declining groundwater levels: Documented Impacts #7.a - Declining GW levels Points	100	100
Rc2h - Projected Population Growth	Census data estimates of growth rate between 2016 to 2021, estimated by service area	16	23
RC2i - Water Quality in Shallow Aquifer	Domestic well water quality risk (includes areas outside of alluvial basins): Indication of likelihood that groundwater likely accessed by domestic wells may contain concentrations of constituents above regulatory levels.	50	53
RC2j - Surrounding Land use	Presence of irrigated agriculture in surrounding basin: Irrigated Acres Priority Points	26	43
	Total Component Score	**49**	**48**

Notes:
(1) Risk Factor descriptions and codes are provided in Part 2: Appendix 1 Drought and Water Shortage Risk Scoring: California's Small Water Supplier and Self-Supplied Communities (DWR).
(2) Average of the 28 Geoids located within Porterville and East Porterville

Table A.3 RC3 – Physical Vulnerability

Risk Factor	Risk Factor Measure Description	City of Porterville Average Score	Self-Supplies Communities Average Score
RC3a - Well Depth Flag	Well-depth flag – if any portion of the groundwater unit(s) that intersect with the Census BG has relatively shallow domestic wells, marked whole BG as '1' (high risk) (0,1)	0.00	75
RC3b - Well Depth Proportion	Proportion of Public Land Survey Sections in Block Group where the max depth of domestic wells is 10 percent or more shallow than max of public wells (0-1)	0	100
	Total Component Score	**0**	**87**

Notes:
(1) Risk Factor descriptions and codes are provided in Part 2: Appendix 1 Drought and Water Shortage Risk Scoring: California's Small Water Supplier and Self-Supplied Communities (DWR).
(2) Average of the 28 Geoids located within Porterville and East Porterville

Table A.4 RC4 – Organization Vulnerability

Risk Factor	Risk Factor Measure Description	City of Porterville Average Score	Self-Supplies Communities Average Score
Per Capita Income 2016	Average per capita income for all block groups (BG).	16,730	33,623
Mean Household Income	Average Median Household Income (MHI) for all BGs.	43,439	72,335
Percent Persons 65 years of age or older	Percentage of population of 65 and older of all BGs.	12	17
Percent persons 5 year of age or younger	Percentage of population of under 5 years age of all BGs.	0	6
percent renters	Percentage of households that are renters.	44	34
percent mobile homes	Percentage of mobile households of all BGs.	9	15
No vehicle available	Percentage of households with no vehicles of all BGs.	6	6
Percent of Population with single parent	Percentage of population with single parent with children under 18 years old of all BGs.	1	42
Percent of Population unemployed	Percentage of population of civilian unemployed of all BGs	11	10
Percent of population who speak English less than well	Percentage of population who speak English less than well of all BGs	16	8
Percent of Population in poverty	Percentage of population living at or below poverty level	28	12
Percent of population in group quarters	Percentage of all census block group population with Group Quarters (GQ).	1	5
	Total Component Score	**77**	**45**

Notes:

(1) Risk Factor descriptions and codes are provided in Part 2: Appendix 1 Drought and Water Shortage Risk Scoring: California's Small Water Supplier and Self-Supplied Communities (DWR).

(2) Average of the 28 Geoids located within Porterville and East Porterville

Table A.5 RC5 – Record of Drought Impacts

Risk Factor	Risk Factor Measure Description	City of Porterville Average Score	Self-Supplies Communities Average Score
RC5a - Reported Household Outages on Domestic Well	Presence of one or more households with reported outages in Census Block Group	75	100
RC5b - Reported Household Outages on Private Well	Proportion of households with reported outages in Census BG (compared to total households in BG) (0-1 scalar)	5	1
	Total Component Score	**64**	**81**

Notes:
(1) Risk Factor descriptions and codes are provided in Part 2: Appendix 1 Drought and Water Shortage Risk Scoring: California's Small Water Supplier and Self-Supplied Communities (DWR).
(2) Average of the 28 Geoids located within Porterville and East Porterville

Table A.6 RC5 – Record of Drought Impacts

Geoid ID	Place Name
061070039022	East Porterville
061070039021	East Porterville
061070039015	East Porterville
061070039023	East Porterville
061070039014	East Porterville
061070039013	East Porterville
061070039012	East Porterville
061070033001	Porterville City
061070034005	Porterville City
061070041021	Porterville City
061070041014	Porterville City
061070035022	Porterville City
061070033005	Porterville City
061070038011	Porterville City
061070035011	Porterville City
061070034003	Porterville City
061070037001	Porterville City
061070034004	Porterville City
061070035021	Porterville City
061070041011	Porterville City
061070035024	Porterville City
061070041013	Porterville City
061070038023	Porterville City
061070036021	Porterville City
061070038012	Porterville City
061070036023	Porterville City
061070036013	Porterville City
061070035023	Porterville City

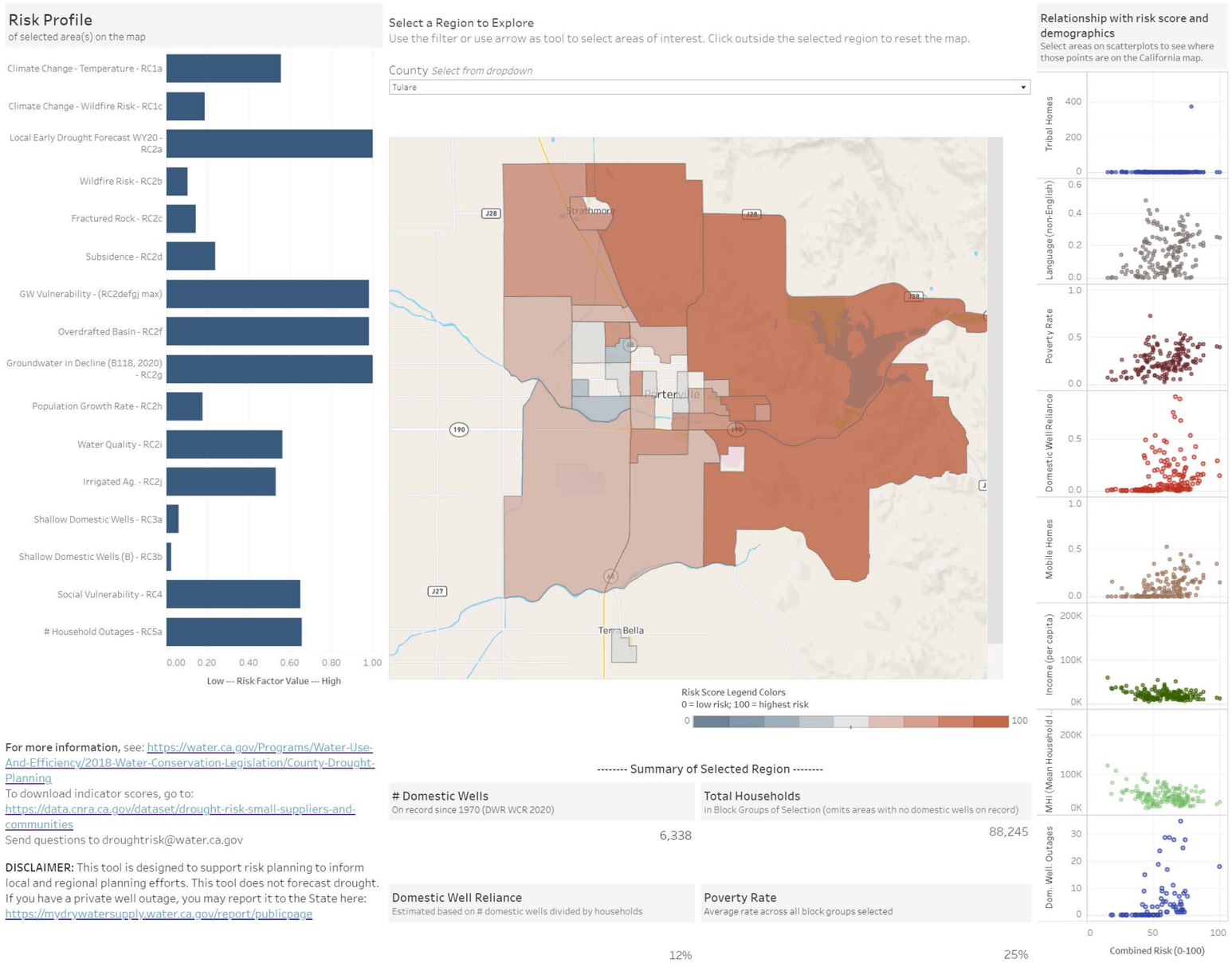

Figure A.1 Porterville Risk Map

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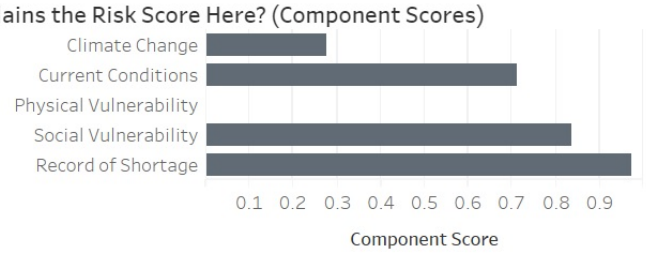
GEOID: 061070039022

Risk Score (0-100): **87**
US Census ID (Block Group):: **061070039022**
Surrounding or Nearby Place: **East Porterville**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 16%

This community has 449 households, according to the US Census estimates (ACS 2012-2016). State records indicate 16% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

All information reported according to state and federal data records and may not be as updated as local records.

✓ Keep Only ⊘ Exclude

GEOID: 061070039021

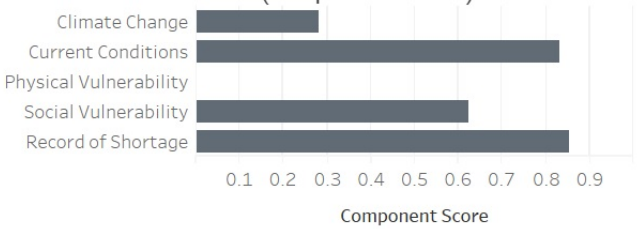
✓ Keep Only ⊘ Exclude

Risk Score (0-100): **82**
US Census ID (Block Group):: **061070039021**
Surrounding or Nearby Place: **East Porterville**
This area is located in: **Tulare County**

Tribal Homes: 1
Domestic Well Reliance: 12%

This community has 731 households, according to the US Census estimates (ACS 2012-2016). State records indicate 12% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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All information reported according to state and federal data records and may not be as updated as local records.

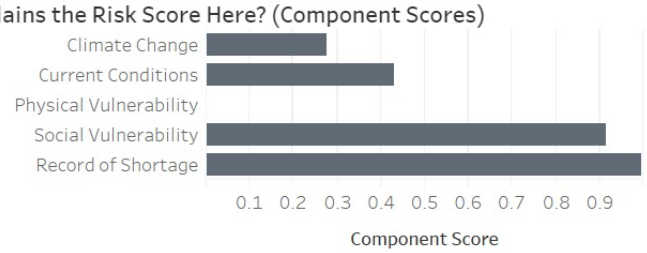
GEOID: 061070039015

Risk Score (0-100): **76**
US Census ID (Block Group):: **061070039015**
Surrounding or Nearby Place: **East Porterville**
This area is located in: **Tulare County**

Tribal Homes: 2
Domestic Well Reliance: 4%

This community has 581 households, according to the US Census estimates (ACS 2012-2016). State records indicate 4% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

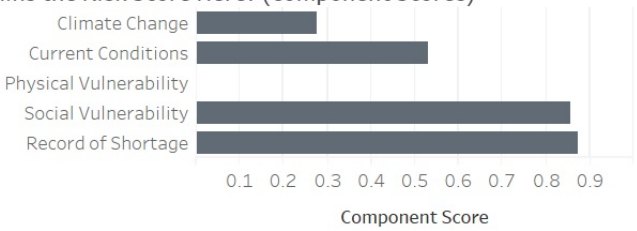
GEOID: 061070039023

Risk Score (0-100): **76**
US Census ID (Block Group):: **061070039023**
Surrounding or Nearby Place: **East Porterville**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 1%

This community has 333 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

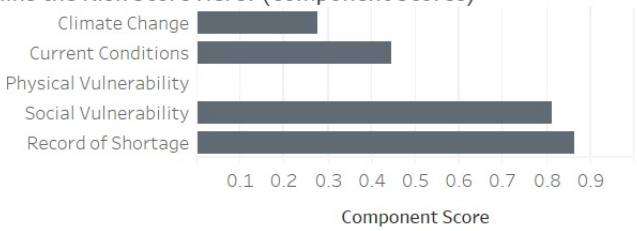
GEOID: 061070039014

Risk Score (0-100): **69**
US Census ID (Block Group):: **061070039014**
Surrounding or Nearby Place: **East Porterville**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 6%

This community has 561 households, according to the US Census estimates (ACS 2012-2016). State records indicate 6% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

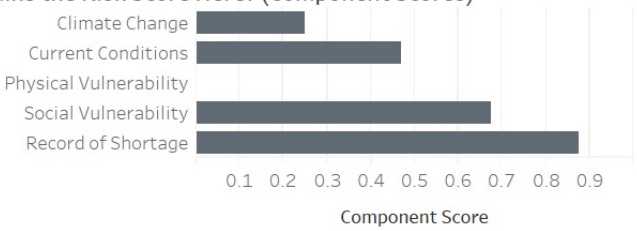
GEOID: 061070039013

Risk Score (0-100): 65
US Census ID (Block Group):: 061070039013
Surrounding or Nearby Place: East Porterville
This area is located in: Tulare County

Tribal Homes: 0
Domestic Well Reliance: 1%

This community has 229 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

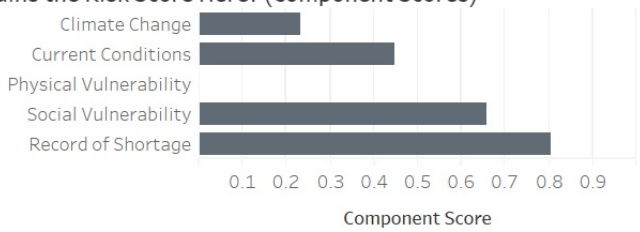
GEOID: 061070039012

Risk Score (0-100): **61**
US Census ID (Block Group):: **061070039012**
Surrounding or Nearby Place: **East Porterville**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 1%

This community has 215 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

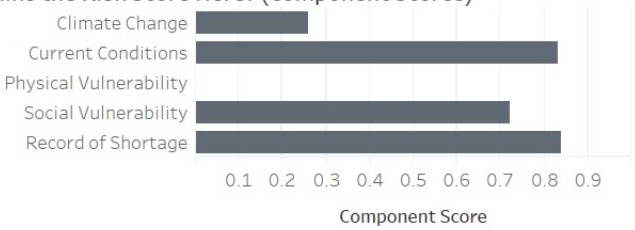
GEOID: 061070033001

Risk Score (0-100): **85**
US Census ID (Block Group):: **061070033001**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 15%

This community has 435 households, according to the US Census estimates (ACS 2012-2016). State records indicate 15% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

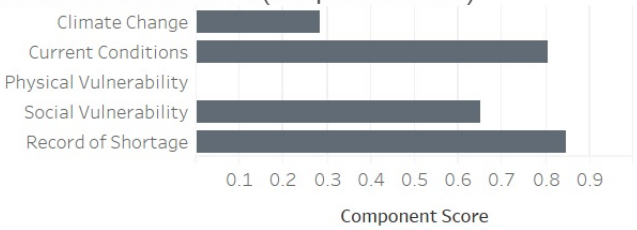
GEOID: 061070034005

Risk Score (0-100): **82**
US Census ID (Block Group):: **061070034005**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 4
Domestic Well Reliance: 43%

This community has 176 households, according to the US Census estimates (ACS 2012-2016). State records indicate 43% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

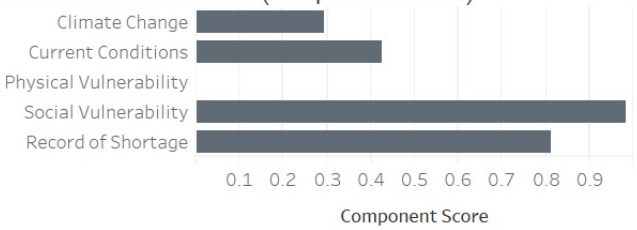
GEOID: 061070041021

Risk Score (0-100): **74**
US Census ID (Block Group):: **061070041021**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 1
Domestic Well Reliance: 2%

This community has 600 households, according to the US Census estimates (ACS 2012-2016). State records indicate 2% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

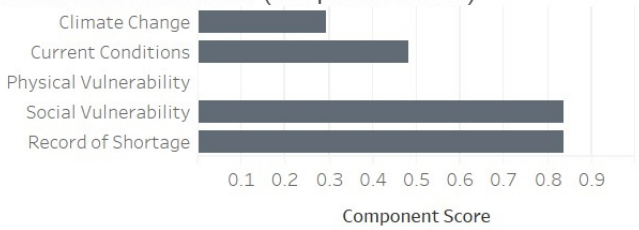
GEOID: 061070041014

Risk Score (0-100): **72**
US Census ID (Block Group):: **061070041014**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 1%

This community has 546 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

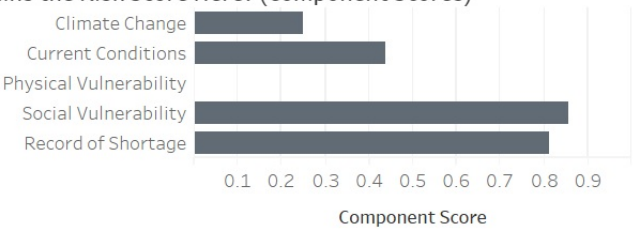
GEOID: 061070035022

Risk Score (0-100): 69
US Census ID (Block Group):: 061070035022
Surrounding or Nearby Place: Porterville city
This area is located in: Tulare County

Tribal Homes: 0
Domestic Well Reliance: 0%

This community has 614 households, according to the US Census estimates (ACS 2012-2016). State records indicate 0% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

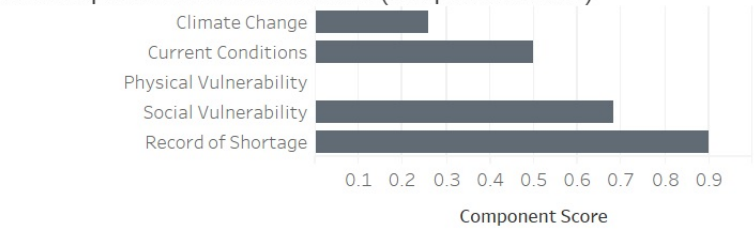
GEOID: 061070033005

Risk Score (0-100): **68**
US Census ID (Block Group):: **061070033005**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 25%

This community has 385 households, according to the US Census estimates (ACS 2012-2016). State records indicate 25% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

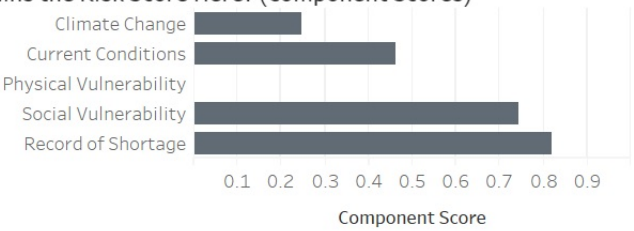
GEOID: 061070035011

Risk Score (0-100): **66**
US Census ID (Block Group):: **061070035011**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 4%

This community has 944 households, according to the US Census estimates (ACS 2012-2016). State records indicate 4% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

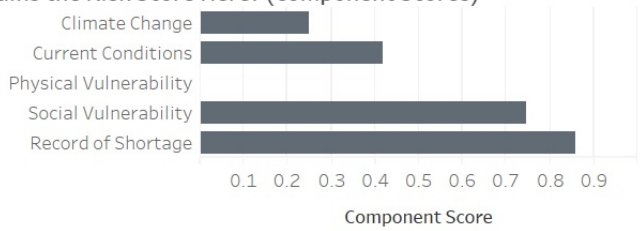
GEOID: 061070034003

Risk Score (0-100): 65
US Census ID (Block Group):: 061070034003
Surrounding or Nearby Place: Porterville city
This area is located in: Tulare County

Tribal Homes: 0
Domestic Well Reliance: 30%

This community has 250 households, according to the US Census estimates (ACS 2012-2016). State records indicate 30% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

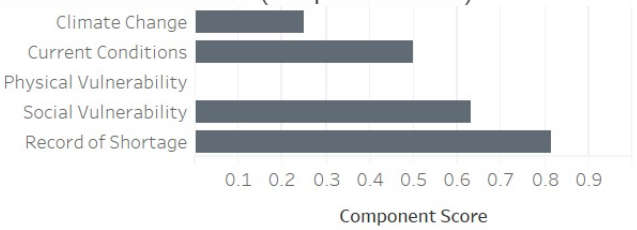
GEOID: 061070037001

Risk Score (0-100): **64**
US Census ID (Block Group):: **061070037001**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 5%

This community has 458 households, according to the US Census estimates (ACS 2012-2016). State records indicate 5% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

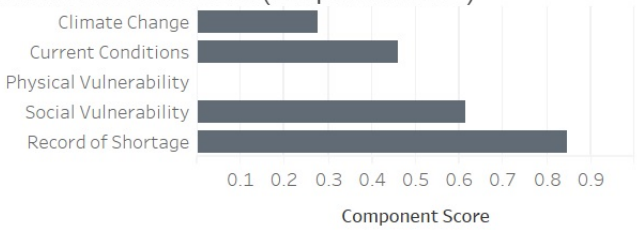
GEOID: 061070034004

Risk Score (0-100): 62
US Census ID (Block Group):: 061070034004
Surrounding or Nearby Place: Porterville city
This area is located in: Tulare County

Tribal Homes: 0
Domestic Well Reliance: 13%

This community has 605 households, according to the US Census estimates (ACS 2012-2016). State records indicate 13% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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✓ Keep Only ⊘ Exclude

GEOID: 061070035021

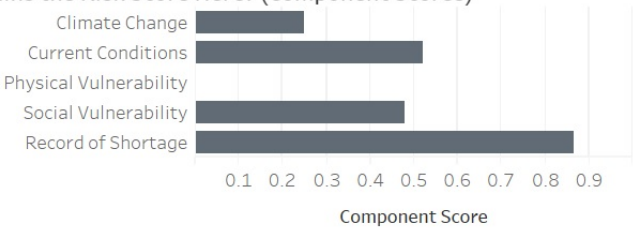
✓ Keep Only ⊘ Exclude

Risk Score (0-100): 60
US Census ID (Block Group):: 061070035021
Surrounding or Nearby Place: Porterville city
This area is located in: Tulare County

Tribal Homes: 0
Domestic Well Reliance: 29%

This community has 263 households, according to the US Census estimates (ACS 2012-2016). State records indicate 29% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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All information reported according to state and federal data records and may not be as updated as local records.

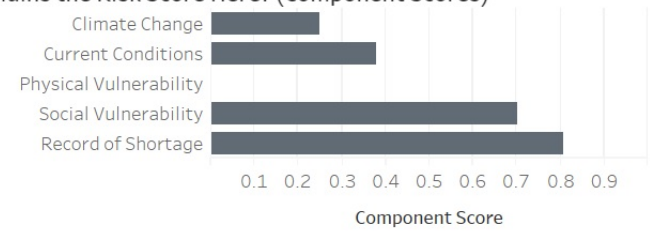
GEOID: 061070041011

Risk Score (0-100): 60
US Census ID (Block Group):: 061070041011
Surrounding or Nearby Place: Porterville city
This area is located in: Tulare County

Tribal Homes: 1
Domestic Well Reliance: 1%

This community has 848 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

All information reported according to state and federal data records and may not be as updated as local records.

✓ Keep Only ⊘ Exclude

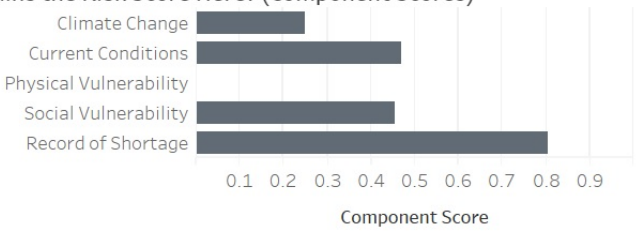
GEOID: 061070035024

Risk Score (0-100): **55**
US Census ID (Block Group):: **061070035024**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 1%

This community has 1,621 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

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All information reported according to state and federal data records and may not be as updated as local records.

✓ Keep Only ⊘ Exclude

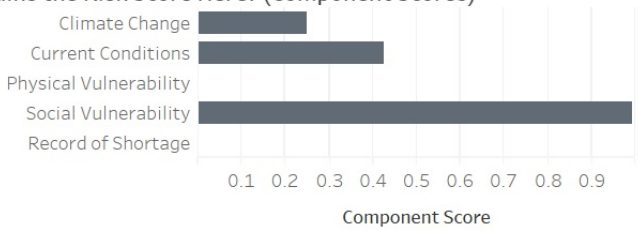
GEOID: 061070041013

Risk Score (0-100): **53**
US Census ID (Block Group):: **061070041013**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 2%

This community has 545 households, according to the US Census estimates (ACS 2012-2016). State records indicate 2% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

All information reported according to state and federal data records and may not be as updated as local records.

✓ Keep Only ⊘ Exclude

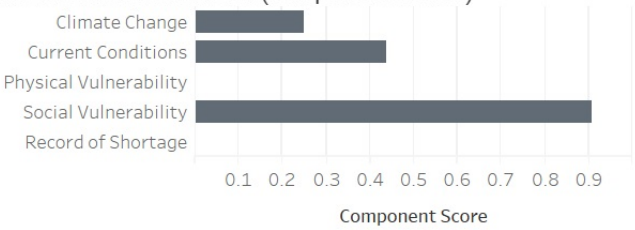
GEOID: 061070038023

Risk Score (0-100): **50**
US Census ID (Block Group):: **061070038023**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 1
Domestic Well Reliance: 1%

This community has 511 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

All information reported according to state and federal data records and may not be as updated as local records.

✓ Keep Only ⊘ Exclude

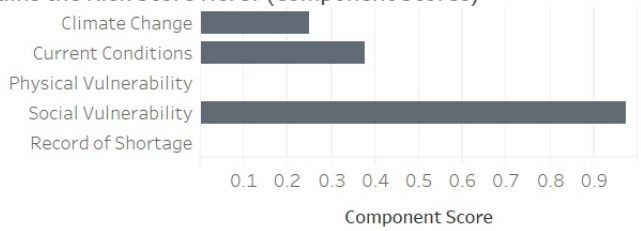
GEOID: 061070036021

Risk Score (0-100): **49**
US Census ID (Block Group):: **061070036021**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 1
Domestic Well Reliance: 0%

This community has 639 households, according to the US Census estimates (ACS 2012-2016). State records indicate 0% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

All information reported according to state and federal data records and may not be as updated as local records.

✓ Keep Only ⊘ Exclude

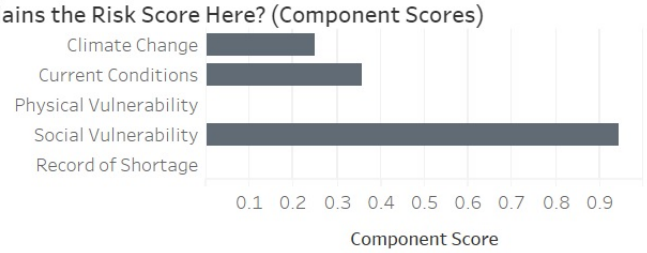
GEOID: 061070038012

Risk Score (0-100): **47**
US Census ID (Block Group):: **061070038012**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 2
Domestic Well Reliance: 1%

This community has 582 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

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✓ Keep Only ⊘ Exclude

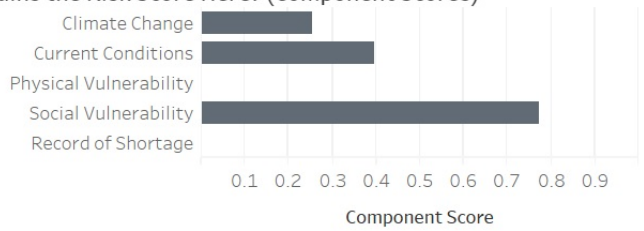
GEOID: 061070036023

Risk Score (0-100): **42**
US Census ID (Block Group):: **061070036023**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 0%

This community has 1,091 households, according to the US Census estimates (ACS 2012-2016). State records indicate 0% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

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✓ Keep Only ⊘ Exclude

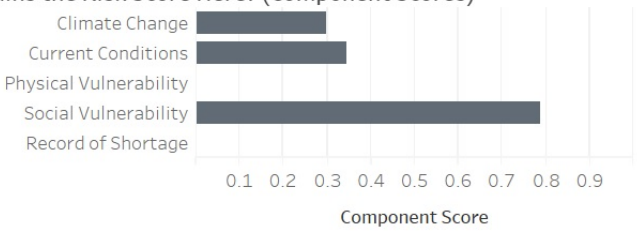
GEOID: 061070036013

Risk Score (0-100): **41**
US Census ID (Block Group):: **061070036013**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 1
Domestic Well Reliance: 0%

This community has 307 households, according to the US Census estimates (ACS 2012-2016). State records indicate 0% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

All information reported according to state and federal data records and may not be as updated as local records.

✓ Keep Only ⊘ Exclude

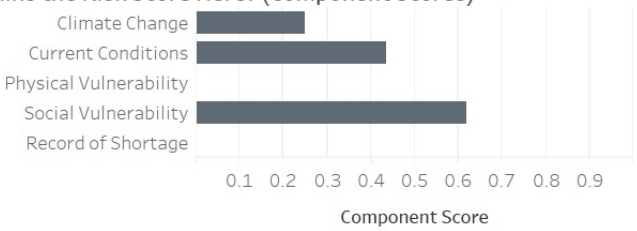
GEOID: 061070035023

Risk Score (0-100): **38**
US Census ID (Block Group):: **061070035023**
Surrounding or Nearby Place: **Porterville city**
This area is located in: **Tulare County**

Tribal Homes: 0
Domestic Well Reliance: 1%

This community has 587 households, according to the US Census estimates (ACS 2012-2016). State records indicate 1% of households rely on domestic wells in this area.

What Explains the Risk Score Here? (Component Scores)



Indicators used to estimate drought and water shortage risk were grouped in the categories in the bar chart. The bars are longer for those components that contribute more to the risk score. Bars are shorter (or closer to zero) for those than contribute less to the risk score. Those bars that are absent indicate they do not drive risk for this area (based on available data) or no data was available.

For more details on the individual indicators, click the map to view the results on the right chart. For more details on the methods and data sources, view Appendix 1 of Part 2 of the report here: https://water.ca.gov/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/County-Drought-Planning .

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Appendix K

POPULATION TOOL MODIFICATION PRINTOUT

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The population tool calculates the 2020 Persons per Connection by creating a trend line of the Persons per Connection from 2000 to 2010 and continues that trend to the year 2020. For example, if there were a decline in the Persons per Connection from 2000 to 2010, the tool continues that declining trend to the year 2020. If this does not represent the actual trend for your water supplier, the calculated population for 2020 may not be accurate.

ACCEPTABLE MODIFICATION

The user will use the results from the population tool, but will modify the Persons per Connection and population for the year 2020. Instead of using the Persons per Connection for 2020 as calculated by the tool, the user will use the Persons per Connection that the tool calculated for the year 2010. The user will then multiply the 2010/2020 Persons per Connection by the number of connections for 2020 to arrive at their 2020 population. ***THE UWMP PREPARER MUST INCLUDE THE TABLES FROM THE POPULATION TOOL AND DOCUMENT THE MODIFICATION IN THE 2020 UWMP.***

$$4.39\ \frac{Persons}{Connection} \times 17{,}063\ connections = 74{,}907\ persons$$

This page performs the following actions:

a. **Displays the population for each census year,** based on the electronic maps uploaded to the tool and US Census data at the block level AND
b. **Calculates the persons per connection for every non-census year,** based on "Number of Connections" data input by the user. Persons-per-connection is used to estimate population for the non-census years, including 2020.

Enter "Number of Connections" for each of the census years available. The minimum connection data required is number of connections for the year 2010. If connection data is available for the year 1990 and 2000, it must be entered to obtain the most accurate population estimate. The tool will automatically calculate the Persons per Connection for all other years.

NOTE: This page will be included when the user selects "Print Confirmation" or "Export to Excel" on the next page.

Year	Census Block Level Total Population	Number of Connections *	Persons per Connection
1990	45,050	Not Available	3.20
1991	-	-	3.26
1992	-	-	3.32
1993	-	-	3.38
1994	-	-	3.44
1995	-	-	3.50
1996	-	-	3.56
1997	-	-	3.62
1998	-	-	3.67
1999	-	-	3.73
2000	57,004	15027	3.79
2001	-	-	3.85
2002	-	-	3.91
2003	-	-	3.97
2004	-	-	4.03
2005	-	-	4.09
2006	-	-	4.15
2007	-	-	4.21
2008	-	-	4.27
2009	-	-	4.33
2010	66,760	15217	4.39
2011	-	-	3.79
2012	-	-	3.79
2013	-	-	3.79
2014	-	-	3.79
2015	-	-	3.79
2020	-	-	4.98 **

** Number of Connections may be either All Residential Connections (Single Family and Multi-Family combined) or All Service Connections. This will depend on the data available from the water supplier's records, but must remain consistent throughout the table.*

*** If the 2020 Persons per Connection or 2020 Total Population seems inaccurate, please click here.*

Appendix L

TULARE COUNTY MULT-JURISDICTIONAL LOCAL HAZARD MITIGATION PLAN

The Tulare County MJLHMP can be downloaded at the link below:

https://oes.tularecounty.ca.gov/oes/index.cfm/mitigation/tulare-county-mjlhmp/

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