EAST NILES COMMUNITY SERVICES DISTRICT

URBAN WATER MANAGEMENT PLAN

JUNE 2021

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2020 Urban Water Management Plan

June 2021

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Bibliography

The following reports, studies, and other material were reviewed during preparation of this Urban Water Management Plan update.

1) 2020 Urban Water Management Plans Guidebook for Urban Water Suppliers dated March 2021 and prepared by the California Department of Water Resources.

2) Kern River Groundwater Sustainability Agency Groundwater Sustainability Plan dated December 2019 prepared by Todd Groundwater

3) Completed American Water Works Association 2015 to 2019 Water Audits.

4) Kern County Multi-Jurisdictional Hazard Mitigation Plan 2020 Update Public Review Draft dated September 2020 and prepared by the Kern County Fire Department Office of Emergency Services.

5) Regional Growth Forecast for Kern Council of Governments Methodology and Forecasts 2020 to 2050 prepared by the Kern Council of Governments dated December 2019

6) 2015 Urban Water Management Plan dated updated June 2016 by MKN and Associates, Inc.

7) Memorandum of Understanding Regarding Urban Water Conservation in California January 4, 2016 and as amended by California Urban Water Conservation Council.

List of Acronyms

AB - Assembly Bill

AECOM - AECOM Consultants

AF - Acre-Feet

AFD - Acre Feet per Day

AFY - Acre Feet per Year

AMWC - Atascadero Mutual Water Company

CA - California

CD - Compact Disc

CII - Commercial, Industrial, Institutional, water use sectors

CIMIS - California Irrigation Management Information System

COB - City of Bakersfield

COG - Council of Governments

CSD - Community Services District

CWC - California Water Code

DMM - Demand Management Measures

DOF - Department of Finance

DRA - Drought Risk Assessment

DWR - Department of Water Resources

ENCSD - East Niles Community Services District

ET - Reference Evapotranspiration

GEI - GEI Consultants

GPCD - Gallons per Capita per Day

GPD - Gallons per Day

GPS - Global Positioning System

GSA - Groundwater Sustainability Agency

GSP - Groundwater Sustainability Plan

HCGWPP - Henry C Garnett Water Purification Plant

ID - Identifier

ITP - Independent Technical Panel

KCOG - Kern Council of Governments

KCWA - Kern County Water Agency

KRGSA - Kern River Groundwater Sustainability Agency

MGD - Million Gallons per Day

NA - Not Applicable

NOAA - National Oceanic and Atmospheric Administration

NWP - Nacimiento Water Project

RUWMP - Regional Urban Water Management Plan

SBX7-7 - Senate Bill Seven of the Senate's Seventh Extraordinary Session of 2009

SGMA - Sustainable Groundwater Management Act

SOI - Sphere of Influence

SWP - State Water Project

TCP - Trichloropropane

US - United States

UWMP - Urban Water Management Plan

WAKC - Water Association of Kern County

WET - Water Education for Teachers

WSCP - Water Shortage Contingency Plan

WUE - Water Use Efficiency

YR - Year

CHAPTER 1 UWMP INTRODUCTION AND OVERVIEW

The majority of the information contained in this chapter was taken from the State of California, Department of Water Resources Urban Water Management Plan Guidebook Final March 2021 (Guidebook) to provide a general overview of the purpose of the UWMP update.

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Act). The law required an urban water supplier (Supplier), providing water for municipal purposes to more than 3,000 customers or serving more than 3,000 acre-feet annually, to adopt an Urban Water Management Plan (UWMP) every five years demonstrating water supply reliability in normal, single dry, and multiple dry years. The original Act also required the California Department of Water Resources (DWR) to provide a report to the California Legislature on the status of water supply planning in California.

Since the Act was passed, it has undergone significant expansion and revision since the last UWMP Guidebook was prepared in 2015. Prolonged droughts, groundwater overdraft, regulatory revisions, and changing climatic conditions not only affect each Supplier's water reliability determinations, but also the broad picture of statewide water reliability overseen by DWR, the State Water Resources Control Board (State Water Board), and the State of California Legislature (Legislature). Accordingly, the Act has grown to address changing conditions and it guides California's water resource management.

This report comprises the 2020 UWMP update for the East Niles Community Services District (ENCSD or the District). ENCSD is located on the northeast side of Bakersfield California, located in Kern County. The District serves portions of the City of Bakersfield and unincorporated areas of Kern County. ENCSD is an independent Special District formed and operated pursuant to Government Code §61000 et seq. ENCSD provides water, wastewater, and drainage services to its customers pursuant to Government Code §61100(a) and (b). ENCSD does not have land planning authority, which is retained by the County of Kern. The water system is comprised of 6 wells for potable water production, 13 water storage reservoirs with a total of 13.8 million gallons of storage capacity, 9 booster pump stations, and approximately 110 miles of distribution piping.

New Requirements for 2020 Update

Per the California Water Code (Water Code), the following new requirements have been identified in the 2020 Urban Water Management Plan Guidebook for Urban Water Suppliers and have been addressed throughout the report:

- ❑ Five Consecutive Dry-Year Water Reliability Assessment
- ❑ Drought Risk Assessment
- ❑ Seismic Risk
- ❑ Energy Use Information
- ❑ Water Loss Reporting for Five Years
- ❑ Water Shortage Contingency Plan
- ❑ Groundwater Supplies Coordination
- ❑ Lay Description

1.1 UWMP Organization

ENCSD's 2020 UWMP update adheres to the organizational structure per the Guidebook and as outlined below. Supplemental tables have been added (when required) to accommodate new requirements and to clarify certain information.

Chapter 1 – UWMP Introduction and Lay Description: This chapter provides discussion of requirement changes since the 2015 UWMP, fundamentals of the 2020 UWMP, and the required lay description of ENCSD and its service area. Some subsequent chapters also include an initial lay description.

Chapter 2 – Plan Preparation: This chapter provides information on processes used to develop the UWMP, including efforts in coordination and outreach.

Chapter 3 – System Description: This chapter includes maps of the service area, an explanation of the service area and climate, and detail on the public water system.

Chapter 4 – Water Use Characterization: This chapter provides a description and quantification of the current and projected water uses within the service area.

Chapter 5 – Conservation Target Compliance: This chapter describes ENCSD's compliance with the 2020 per-capita water conservation mandate under SBX7-7. This chapter shows ENCSD's 2020 per-capita target value that was adopted in the 2015 UWMP, and compliance value based upon actual 2020 customer water use.

Chapter 6 – Water Supply Characterization: This chapter provides a description and quantification of current and projected potable and non-potable water (if applicable) supplies. A narrative description of each supply source and quantification of the supply availability for each supply source was identified.

Chapter 7 – Water Service Reliability and Drought Risk Assessment: This chapter describes ENCSD's water system reliability through at least a 20-year planning horizon. This description includes normal, single dry year, and five consecutive dry years. This chapter can also include the Drought Risk Assessment (DRA). The water system reliability differs from the DRA by allowing a different basis for characterizing the five consecutive dry years.

Chapter 8 – Water Shortage Contingency Plan: This chapter provides a structured plan for dealing with water shortages, incorporating prescriptive information and standardized action levels, along with implementation actions in the event of a catastrophic supply interruption.

Chapter 9 – Demand Management Measures: This chapter identifies ENCSD's efforts to promote conservation and to reduce demand on the water supply; specifically including a narrative describing efforts to implement demand management measures.

Chapter 10 – Plan Adoption, Submittal, and Implementation: This chapter describes and documents the steps taken to make the UWMP publicly available, as well as the steps taken to adopt and submit the UWMP in accordance with the Water Code. This chapter also describes ENCSD's plan to implement the UWMP.

Appendices: To support and further clarify information included in the main chapters of the UWMP, relevant information has been included in the appendix of this UWMP.

Table 1-1 provides an overview of the applicable changes to the Water Code since the 2015 UWMP, which have been included in this 2020 update.

Table 1-1 Water Code Changes since 2015 UWMP				
Change Number	**Topic**	**CWC Section**	**Summary**	**Guidebook Section**
1	System Description	10631(a)	Suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land uses information for projecting water use in five-year increments, up to the year 2045.	3.0
2	Other Social, Economic, and Demographic Factors	10631	Describe the service area of the supplier, including current and projected population, climate, and other social, economic and demographic factors affecting the supplier's water management planning.	3.4.2
3	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.	3.5
4	Lay Description	10635	Suppliers shall provide a simple lay description of their projected water use for the foreseeable future.	4.2.4
5	Distribution System Water Loss	10631(d)(3)(A) and (C)	Suppliers shall provide quantified distribution system losses for each of the five preceding years and whether or not the State standard was met.	4.2.4
6	Characteristic Five-Year Water Use	10635(b)	The Supplier must produce a projected water use for the years 2021 through 2025 as part of the water use projections, up to the year 2040.	4.2.7
7	Climate Change Effects	10635(b)(1)	Consideration of climate change in future projections in regards to water supply.	6.2. & 10.1
8	Drought Risk Assessment	10635(b)	DRA prepared as a component of the 2020 UWMP	7.3
9	Water Service Reliability – Five Consecutive Dry Years	10635(a); 10631 (b)(1)	Submittal Table 7-4 is used for the Supplier's water service reliability assessment for five consecutive dry years, for each of the five-year projection increments out to at least 2040	7.2.1 & 7.2.3.3
10	Water Supply Reliability Analysis	10632(a)(1)	Key attributes of its water supply reliability analysis	8.1
11	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.	8.3
12	Shortage Response Actions	10632 (a)(4)	Locally appropriate "shortage response actions" for each shortage level, with a corresponding estimate of the extent the action will address the gap between supplies and demands.	8.4

Table 1-1 Water Code Changes since 2015 UWMP				
13	Annual Water Supply and Demand Assessment Procedures	10632 (a)(2)	Suppliers are required to submit, by July 1 of each year, beginning in the year following adoption of the 2020 UWMP, an annual water shortage assessment report to the California Department of Water Resources (DWR).	8.2
14	Communication Protocols	10632 (a)(5)	Communication protocols and procedures to inform customers, the public, and government entities of any current or predicted water shortages and associated response actions.	8.5
15	Monitoring and reporting	10632(a)(9)	Monitoring and reporting procedures to assure appropriate data is collected to monitor customer compliance and to respond to any state reporting requirements.	8.9
16	WSCP Refinement Procedures	10632(a)(10)	A reevaluation and improvement process to assess the functionality of its WSCP and to make appropriate adjustments as may be warranted.	8.10

1.2 UWMP in Relation to Other Efforts

An UWMP is prepared by local Suppliers that have the in-depth and practical knowledge of their water systems. The information contained in each Supplier's UWMP reflects the operations of its system in the context of the Supplier's customers, supplies, and service area. This local planning and preparation remain the fundamental focus of the UWMP.

In addition to the local Supplier focus, the UWMP requires coordination with other planning agencies and is most effective when integrated with other planning efforts. Land-use planning agencies, such as cities and counties, prepare General Plans and Specific Plans that affect a Supplier's analysis provided in its UWMP, and vice versa. Moreover, Water Master Plans, facilities' plans, Recycled Water Master Plans, Integrated Regional Water Management Plans, Regional Climate Action Plans, Groundwater Sustainability Plans, AB 3030 Groundwater Management Plans, local or regional Hazard Mitigation Plans, and others need to be synthesized with a Supplier's UWMP to ensure a holistic planning process.

For this UWMP, elements of the following reports and documents were utilized to develop the required sections of the plan (a brief description is provided for the relevant information contained in each document):

- ❑ 2015 Urban Water Management Plan: Served as the basis for the 2020 update.
- ❑ Kern County Water Agency-Improvement District 4 Urban Water Management Plan 2020 (circulated Final Draft) dated January 31, 2020 and prepared by Provost & Pritchard Consulting Group contained information about the reliability of ENCSD's surface water.
- ❑ Regional Growth Forecast for Kern Council of Governments Methodology and Forecast 2020 to 2050 dated December 2019 and prepared by The California Economic Forecast: Used to estimate future population projections throughout 2045.
- ❑ Kern River Groundwater Sustainability Agency Groundwater Sustainability Plan dated December 2019 prepared by Todd Groundwater contained information to address climate change within the service area.
- ❑ Kern County Multi-Jurisdictional Hazard Mitigation Plan: Contained information to address the seismic risk assessment and mitigation requirement of the UWMP update.

1.3 UWMPs and Grand or Loan Eligibility

In order for a Supplier to be eligible for any water grant or loan administered by DWR, the Supplier must have a current UWMP on file that has been determined by DWR to address the requirements of the Water Code. A current UWMP must also be maintained by the Supplier throughout the term of any grant or loan administered by DWR. An UWMP may also be required in order to be eligible for other State funding, depending on the conditions that are specified in the funding guidelines. Suppliers are encouraged to seek guidance on the specifics of any State funding source from the respective funding agencies. The following sections of the Water Code are pertinent to Suppliers considering pursuit of grants or loans.

Law

CWC 10608.56
(a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the requirements of this part or Part 2.8 (commencing with Section 10800).

CWC 10608.56
An urban water supplier is not eligible for a water grant or loan awarded or administered by the state unless the urban water supplier complies with this part.

California Code of Regulations Section 596.1 (b)(2) "disadvantaged community" means a community with a median household income that is less than 80 percent of the statewide annual median household income.

CHAPTER 2 PLAN PREPARATION

New Requirements for 2020 Update

The preparation and periodic update of a Water Shortage Contingency Plan (WSCP) is now required, which per the final Guidebook is included in the UWMP but adopted and amended independent of the UWMP. Coordination with land use agencies, GSAs, and other relevant regional or local authorities is now required as part of preparing the UWMP and the WSCP.

2.1 Plan Preparation

This chapter includes information about the following elements required for the ENCSD 2020 UWMP update:

- ❑ Basis for Preparing a Plan
- ❑ Regional Planning
- ❑ Individual or Regional Planning and Compliance
- ❑ Fiscal or Calendar Year and Units of Measure
- ❑ Coordination and Outreach

2.2 Basis for Preparing a Plan

Law

CWC 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.

CWC 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 supplier.

CWC 10621
(a) Each urban water supplier shall update its plan at least once every five years on or before July 1, in years ending in six and one, incorporating updated and new information from the five years preceding each update.

(d) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.

2.2.1 <u>Public Water Systems</u>

Law

CWC 10644
(a)(2) The plan, or amendments to the plan, submitted to the department … shall include any standardized forms, tables, or displays specified by the department.

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.

ENCSD is a public urban water supplier that serves 32,517 customers and provides more than 8,000 AFY of potable water to its customers. **Table 2-1** provides a summary of the number of connections and total volume of water supplied by ENCSD to their customers for the 2020 calendar year.

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**
CA1510006	East Niles CSD	8,023	8,148
	TOTAL	8,023	8,148
Notes: Volume of water supplied is in AF			

2.3 Regional Planning

ENCSD has prepared an individual UWMP update for 2020 as identified in Table 2-2.

2.4 Individual or Regional Planning and Compliance

2.4.1 Regional UWMP

Law

> ***CWC 10620***
> *(d)(1) An urban water supplier may satisfy the requirements of this part by participation in area wide, regional, watershed, or basin wide urban water management planning where those plans will reduce preparation costs and contribute to the achievement of conservation and efficient water use.*

ENCSD has developed an UWMP that reports solely on its service area and will not be participating in a regional UWMP update. This plan addresses all requirements of the Water Code including water use targets and baselines for Senate Bill Extraordinary Session 7-7 (SB X7-7) Water Conservation Act of 2009 reporting.

2.4.2 Regional Alliance

Law

> ***CWC 10608.20***
> *(a)(1) …Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis as provided in subdivision (a) of Section 10608.28…*
>
> ***CWC 10608.28***
> *(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement by any of the following:*
>
> *(1) Through an urban wholesale water supplier.*
> *(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).*
> *(3) Through a regional water management group as defined in Section 10537.*
> *(4) By an integrated regional water management funding area.*
> *(5) By hydrologic region.*
> *(6) Through other appropriate geographic scales for which computation methods have been developed by the department.*
>
> *(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.*

ENCSD has developed an UWMP that reports solely on its service area as identified in **Table 2-2** but has coordinated with the appropriate regional agencies during the development of this plan.

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 a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		

2.5 Fiscal or Calendar Year and Units of Measure

2.5.1 Fiscal or Calendar Year

Law

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

ENCSD has reported water-related information included in this UWMP based on a calendar year basis and all units are measured in acre-feet (AF) as identified in **Table 2-3**.

Table 2-3: Supplier Identification	
Type of Supplier	
☐	Supplier is a wholesaler
☑	Supplier is a retailer
Fiscal or Calendar Year	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
NA	
Units of Measure Used in UWMP	
Unit	AF

2.5.2 Reporting Complete 2020 Data

This 2020 UWMP includes water use and planning data for the entire calendar year of 2020.

2.5.3 Units of Measure

Water volumes presented in this 2020 UWMP are measured in acre-feet (AF) as identified in **Table 2-3**.

2.6 Coordination and Outreach

2.6.1 Wholesale and Retail Coordination

Law

CWC 10631
(j) 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 (c). 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 (c).

The ENCSD has provided the Kern County Water Agency (KCWA), a regional wholesale supplier, with projections on water demand in five-year increments for the next 20 years.

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 CWC 10631.
Wholesale Water Supplier Name
Kern County Water Agency (KCWA-ID4)

2.6.2 Coordination with Other Agencies and the Community

Law

CWC 10620
(d)(3) 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.

CWC 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.

ENCSD coordinated with multiple neighboring agencies during the preparation of this UWMP update. The coordination efforts were conducted to: 1) inform the agencies of the activities of ENCSD; 2) gather high quality data for use in developing this UWMP; 3) coordinate planning activities with other related regional plans and initiatives. A summary of the coordination activities conducted by the District is presented in **Table 2-5**.

Table 2-5: Agency Coordination						
Agency	**Sent Notice of Plan Preparation and Solicited Input**	**Commented on the draft**	**Attended public meetings**	**Contacted for assistance**	**Sent a notice of intention to adopt**	**Notice of Plan Availability**
Arvin-Edison Water Storage District	X					
Bakersfield City School District	X					
California Water Services Company	X					
City of Bakersfield, County Clerk	X				X	X
County of Kern, County Clerk	X				X	X
Fairfax School District	X					
Kern County Water Agency	X					
Kern Delta Water District	X					
Kern Groundwater Authority	X					
Kern High School District	X					
Kern River Groundwater Sustainability Agency	X					
North of the River Municipal Water District	X					
Oildale Mutual Water Company	X					
Kern County Superintendent of Schools	X					
Water Resource Department	X					

2.6.3 Notice to Cities and Counties

Law

> ***CWC 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 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.*

The District notified both the City of Bakersfield (City or COB) and the County of Kern (County) of the public hearing and this notification has been reported in Chapter 10 **Table 10-1**. A copy of the notification is included in **Appendix G** of this UWMP.

CHAPTER 3 SYSTEM DESCRIPTION

New Requirements for 2020 Update

Per the Water Code the following new requirements are necessary for this chapter of the UWMP 2020 update.

- ❑ Inclusion of service area socioeconomic information as part of the system description
- ❑ Coordination with land use agencies and a description of current and projected land uses within the service area.

Law

CWC Section 10631
Describe the service area of the supplier, including current and projected population, climate, and other social, economic, and 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. 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, as developed pursuant to Article 5 (commencing with Section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.

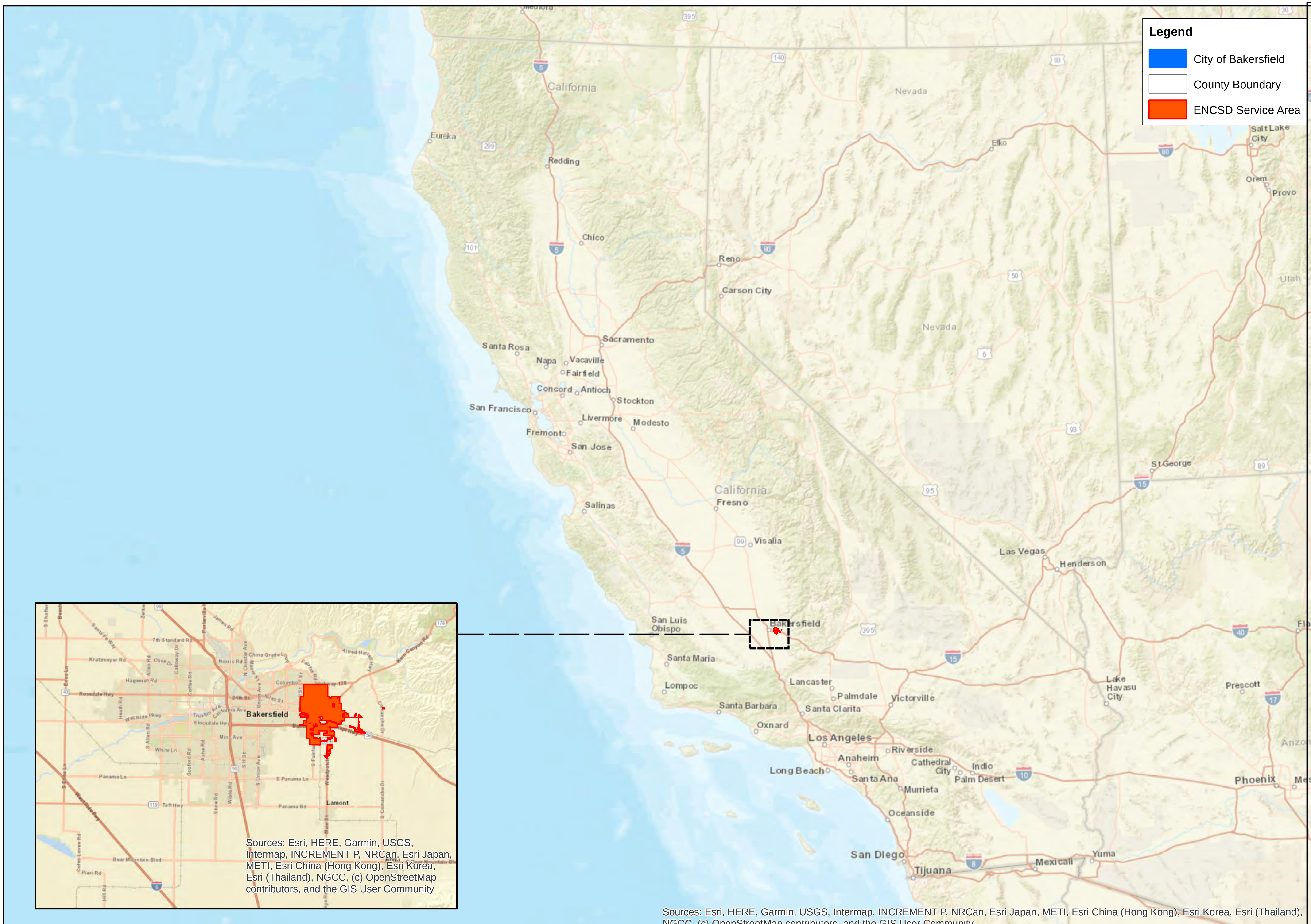
3.1 General Description

ENCSD provides water and sewer services to portions of the City of Bakersfield and unincorporated areas of Kern County, CA. ENCSD's service area is approximately 4,879 acres, includes over 8,000 service connections, and provided services to a population of approximately 32,517 people (Kern County Council of Governments) within the service area. Currently, there are multiple areas within the District's service area boundary that are not served by the District. **Figure 3-2** displays the Districts boundary and the areas inside the boundary that are not served by the District. Areas within ENCSD that overlap with the City of Bakersfield are also shown on **Figure 3-2**. ENCSD's Sphere of Influence identifies areas outside the existing service area boundary for which ENCSD can provide services. The Sphere of Influence includes approximately 14,570 acres. Most of the District's Sphere of Influence is also included in the City of Bakersfield's Sphere Influence.

The water system is comprised of 6 wells for potable water production, 13 water storage reservoirs with a total of 13.8 million gallons of storage capacity, 9 booster pump stations, and approximately 110 miles of distribution piping. The sewer collection system consists of approximately 70 miles of sewer main ranging from 8-inch to 42-inches in diameter.

3.2 Service Area Boundary Maps

Figure 3-1 illustrates the location of ENCSD within the state of California and **Figure 3-2** shows the extents of the current service area, Sphere of Influence (SOI) boundary of the District.

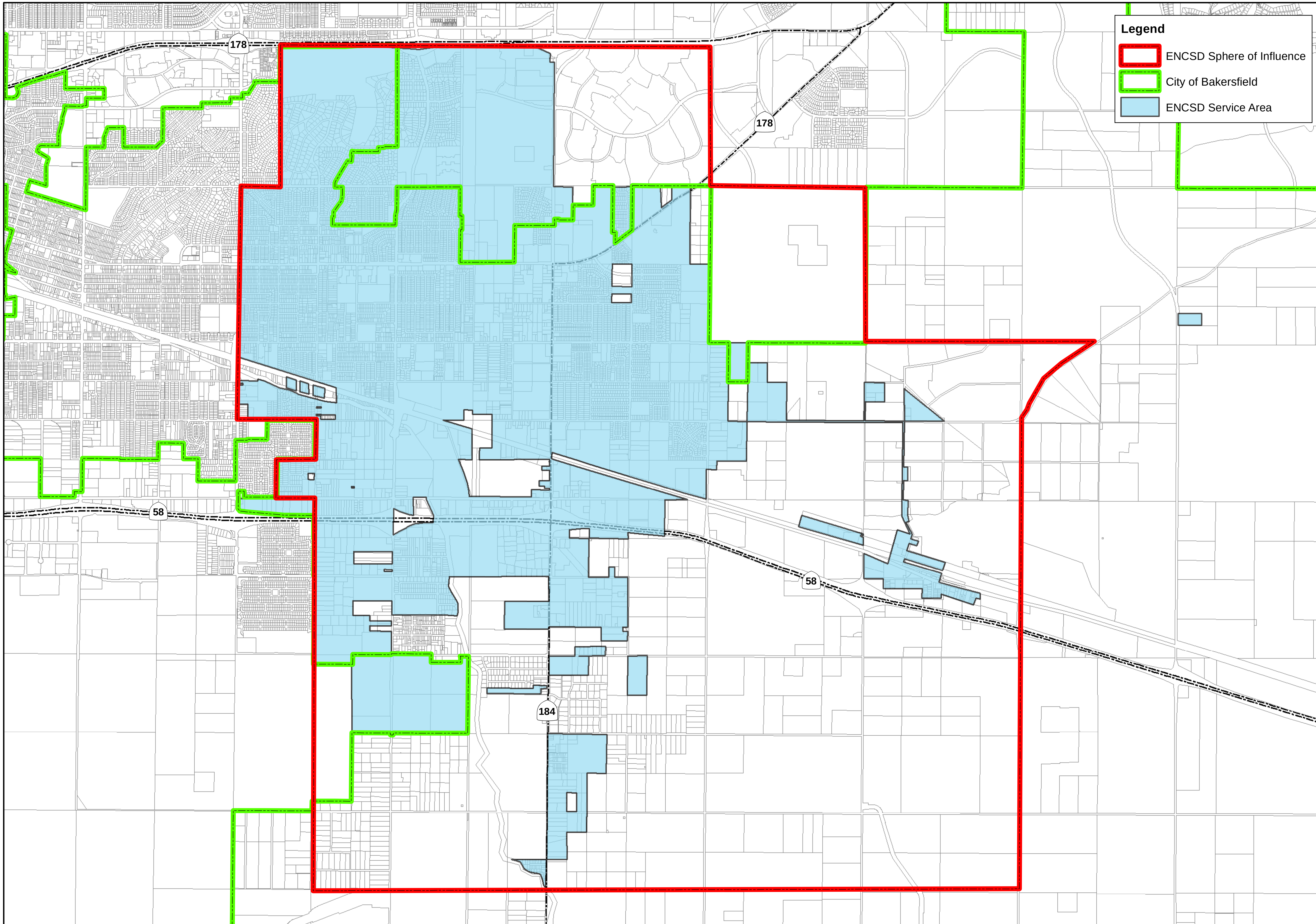


2020 Urban Water Management Plan

Figure 3-1

District Boundary

Scale: NTS



2015 Urban Water Management Plan

Figure 3-2:

District Service Area

Scale: NTS

3.3 Service Area Climate

Law

> ***CWC Section 10631(a)***
> *Describe the service area of the supplier, including climate.*
>
> ***CWC Section 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 local climate is characterized by hot, dry summers and cooler, more humid winters. The Bakersfield area enjoys clear sunny days for more than half of the year. Minimum temperatures often drop below 40 degrees Fahrenheit during the winter. Summers are hot with over 100 days per year exceeding 90 degrees Fahrenheit. Annual precipitation in the area averages approximately 3.6 inches and rain (≥ 0.01 inches per day) occurs about 40 days per year. Fog is common in the winter and may last for several weeks at a time. The 2020 average reference evapotranspiration, temperature, and precipitation are presented in **Table 3-0**.

Table 3-0: Climate Conditions for Calendar Year 2020			
Month	**Monthly Average ETo***	**Monthly Rainfall***	**Monthly Average Temperature***
	Inches	**Inches**	**Fahrenheit**
Jan	1.54	0.09	46.7
Feb	3.31	0.01	54.8
Mar	3.88	2.69	55.3
Apr	5.42	0.02	63.3
May	8.07	0.00	71.3
Jun	8.67	0.00	79.0
Jul	9.38	0.00	82.8
Aug	8.16	0.00	83.5
Sep	5.8	0.00	76.9
Oct	4.37	0.00	69.0
Nov	2.38	0.46	52.5
Dec	1.84	0.34	46.5
Average	**5.24**	**0.300**	**59.88**
Total	**62.82**	**3.6**	**-**
NOTE: CIMIS Station #005 Shafter Monthly Average Report for 2020.			

With respect to climate change, ENCSD has not participated in or conducted an official climate change vulnerability or risk assessment for the existing water service area. However, climate change considerations for ENCSD's groundwater supply were incorporated into the Kern River Groundwater Sustainability Agency (KRGSA) Groundwater Sustainability Plan (GSP) and the executive summary of the KRGA GSP has been included in Appendix A.

3.4 Service Area Population and Demographics

3.4.1 Service Area Population

Law

CWC Section 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.

ENCSD provides water service to portions of the City of Bakersfield and unincorporated areas in Kern County. ENCSD does not have land use planning authority and relies on the City and County to identify potential new developments and overall population growth within the service area. The City and County will coordinate with the District during the review process for new developments within the service area. The ENCSD's 2020 service area population estimate was provided by the Kern Council of Governments (KCOG). The estimate was generated using American Community Service (ACS) 2019 data and the ENCSD boundaries. With respect to population growth within the service area, several planning documents were reviewed to determine the appropriate growth rate to use for the 2020 update. The following planning documents included proposed population estimates through 2050 for the County of Kern:

- Kern Council of Governments 2015-2050 Growth Forecast Update dated August 2015 included growth scenarios through 2050 including:
  - Projected a 2050 population of 1,641,000 with an annual average growth rate 1.8% (2015 to 2050)
- California Department of Finance (DOF) Total Estimated and Projected Population for California and Counties: July 1, 2010, to July 1, 2060, in 1-year increments.
  - Projected a 2050 population of 1,165,210 with an annual average growth rate of 0.80% (2015 to 2050)

To estimate the future population through 2045, a growth rate of 1.8% from the KCOG was applied to the 2020 DWR population tool estimate of 32,517 people residing within the service area. **Table 3-1** provides a summary of 2020 and future population projections within the ENCSD service area through 2045.

Table 3-1 Retail: Population - Current and Projected						
Population Served	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
	32,517	35,551	38,868	42,494	46,459	50,793
NOTES: The 2020 population estimate was provided by KCOG.						

3.4.2 Other Social, Economic, and Demographic Factors

Law

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

The District's service area is largely residential with areas of commercial, industrial, and agricultural uses intermixed. There are significant differences in residential lot types, such as the larger lots in the Bakersfield Country Club location, the agricultural areas in the southern part of the service area, and smaller lots in the central part of the District. Although there may be changes in the individuals residing at any given address through the year (potentially tied to agricultural seasonal work), the number of connections and usage per connection appears to remain consistent.

The following information was obtained from the US Census Bureau to describe the demographics of the customer base within the ENCSD service area (City of Bakersfield specifically):

- The population includes 49.2% male and 50.8% female with 60% of the population between the ages of 18 and 65.
- Approximately 33.5% of the population is White with 49.5% being Hispanic or Latino.
- The KCOG determined that the median household income is $52,422 within the ENCSD service area.

3.5 Land Uses within Service Area

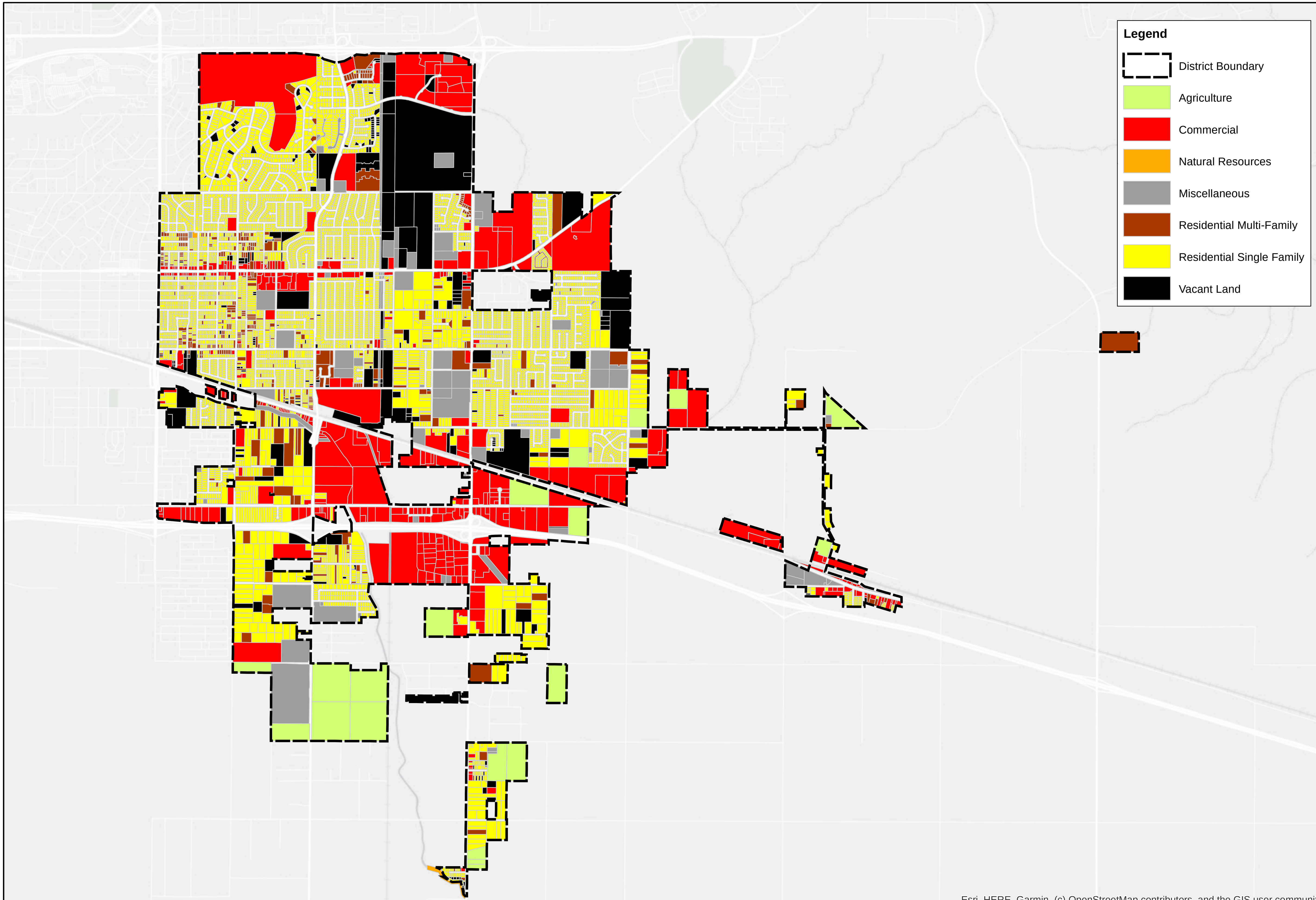
Law

CWC Section 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 ENCSD service area (4,879 acres) is located within the City of Bakersfield and Kern County. The District's two largest land use types are single family residential and commercial. **Table 3-2** shows a summary of the currently developed land uses throughout the existing service area. **Figure 3-3** provides an overview of the overall land use categories within the service area.

Table 3-2: Developed Land Use Summary within Service Area

Land Use Category	Gross Acres	Percent of Total
Agriculture	350	7%
Commercial	1,389	28%
Natural Resources	6	0.1%
Miscellaneous Use	53	1%
Residential Multi-Family	292	6%
Residential Single Family	2,113	43%
Vacant Land	676	14%
	Total	**4,879**



East Niles Community Services District

2020 Urban Water Management Plan

Figure 3-3:

Land Use Map

N

1 inch = 3,000 feet

0 1,500 3,000

CHAPTER 4 WATER USE CHARACTERIZATION

New Requirements for 2020 Update

Per Water Code, the following new requirements are necessary for this chapter of the UWMP 2020 update.

- ❑ Suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land uses information for projecting water use in five-year increments, up to the year 2045.
- ❑ Suppliers shall provide a simple lay description of their projected water use for the foreseeable future.
- ❑ Suppliers shall provide quantified distribution system losses for each of the five preceding years and whether or not the state standard was met.
- ❑ Both Wholesale and Retail Suppliers shall include a DRA for a drought period that lasts five consecutive water years, starting from the year following the assessment, which would be 2021 for this round of UWMPs (see Chapter 7). The DRA requires a comparison of water supplies with total projected water use. Therefore, the Supplier must produce a projected water use for the years 2021 through 2025 as part of the water use projections, up to the year 2040.
- ❑ Both Wholesale and Retail Suppliers will have to conduct an annual water supply and demand assessment on or before July 1 of each year, starting in 2022. The annual assessment will include current year unconstrained demand. Suppliers are encouraged to consider unconstrained demand as the expected water use in the upcoming year, based on recent water use, and before any projected response actions a Supplier may trigger under its Water Shortage Contingency Plan (see Chapter 8).

4.1 Non-Potable Versus Potable Water Use

Currently, no recycled water is used by the District to offset potable and raw water demands. ENCSD has contracts with the City of Bakersfield to treat the District’s wastewater at the City’s Wastewater Treatment Plant No. 2 and with Kern Sanitation Authority to treat wastewater at its wastewater treatment plant. At both wastewater treatment plants, the wastewater is treated to a secondary level and used to irrigate crops for restricted uses.

4.2 Past, Current, and Projected Water Use by Sector

Law

> ***CWC 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.*
>
> ***CWC 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.

In this section current and projected water usage is addressed. **Table 4-3** displays water use in five-year increments from 2025 to 2045.

4.2.1 Water Use Sectors Listed in Water Code

CWC 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 uses:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural

(J) Distribution system water loss

ENCSD's service area includes the following water demand sectors listed in the California Water Code:

- ❑ Single Family: Single family detached dwellings
- ❑ Multi-Family: Apartments, condominiums, town houses, duplexes and trailer parks
- ❑ Commercial: Retail establishments, office buildings, laundries, schools, hospitals, nursing homes, hotels, churches
- ❑ Industrial: All manufacturing
- ❑ Landscape: Parks, play fields, cemeteries, median strips, golf courses
- ❑ Agricultural Irrigation
- ❑ Distribution system water loss

The following sectors are not applicable to the ENCSD UWMP:

- ❑ Sales to other agencies
- ❑ Saline water intrusion barriers, groundwater recharge, or conjunctive use

4.2.2 Water Use Sectors in Addition to Those Listed in Water Code

The following sectors listed in Water Code are not applicable to the ENCSD UWMP:

- ❑ Exchanges
- ❑ Surface Water Augmentation
- ❑ Transfers
- ❑ Wetlands or Wildlife Habitat

4.2.3 Past Water Use

Table 4-0 provides historical water usage by customer type from 2015 through 2019.

Table 4-0: Historical Water Usage						
Use Type	**Water Use (AF)**					**% of Total**
	2015	**2016**	**2017**	**2018**	**2019**	
Single Family	4,262	4,489	4,640	4,679	4,464	61
Multi-Family	874	891	951	931	900	12
Commercial	902	902	958	948	835	12
Industrial	44	100	77	256	290	2
Landscape	640	700	562	641	547	8
Agricultural	25	33	30	33	31	0.4
Other	755	759	403	12	-495	3.9
Total (AF)	**7,502**	**7,874**	**7,621**	**7,500**	**6,572**	**100%**
NOTES: Values represent metered use as reported to DWR for 2020. Percentage of total based on average of the last 5 years. The District replaced meters and recalibrated the system during this 5-year period. “Other” use has been computed as the difference between total production and metered use. Values include system losses and metering error, and do not reflect detailed loss values from the ENCSD water loss worksheets.						

4.2.4 Distribution System Water Loss

CWC 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…

(J) Distribution system water loss….

CWC 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
(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.
(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

Table 4-4 includes projected water losses, reported in five-year increments for the next 20 years. Section 4.2.6 contains **Table 4-5** which identities distribution system water losses for each of the five years preceding the plan update.

4.2.5 Current Water Use

Table 4-1 provides an overview of the existing water demands by use type within ENCSD's service area for calendar year 2020.

Table 4-1 Retail: Demands for Potable - Actual		
Use Type	2020 Actual	
	Level of Treatment When Delivered	Volume (AF)
Single Family	Drinking Water	4,882
Multi-Family	Drinking Water	941
Commercial	Drinking Water	897
Industrial	Drinking Water	389
Landscape	Drinking Water	571
Agricultural Irrigation	Drinking Water	31
Other	Drinking Water	437
	TOTAL (AF)	**8,148**
NOTES: Values represent metered use as reported to DWR for 2020. "Other" use has been computed as the difference between total production and metered use. The category includes system losses and metering error.		

4.2.6 Projected Water Use

Law

CWC 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.

CWC 10631 (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).

CWC 10631 (d)(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.

Based on the 2015 UWMP, ENCSD is required to comply with an urban water use target of 311 gallons per capita per day (gpcd) by 2020. **Table 4-1a** provides a summary of historical gpcd within the service area over the past five years.

Table 4-1a : Historical Use Rates (GPCD)					
Year	Service Area Population	Water Production (AF)	Gross Water Use (gpcd)	Metered Residential Use (AF)	Residential Water Use (gpcd)
2015	31,500	7,502	213	5,136	146
2016	31,500	7,874	223	5,380	152
2017	31,772	7,621	214	5,591	157
2018	31,772	7,500	211	5,610	158
2019	32,293	6,572	182	5,364	148
2020	32,517	2,655	224	1,897	160
		5-Year Average	**211**		**153**
NOTES: Potable Demand based on historical production values provided by ENCSD. 5-year average includes 2015-2020.					

4.2.6.1 20-Year Planning Horizon

Annual water demand within the service area was assumed to increase in proportion to the population of the ENCSD service area. The demand projections in **Table 4-2** are based on historical gpcd trends (**Table 4-1a**), includes mandatory water use prohibitions as requested by the State, and incorporates the required target per-capita water use per SB X7-7 (311 gpcd) for ENCSD to meet the 20% reduction by 2020. Future water demand projections were calculated by multiplying annual population projections shown in **Table 3-2** by the historical 5-year running average gross water use, which is within the SB X7-7 target.

Table 4-2 Retail: Demands for Potable Water - Projected					
Use Type	Projected Water Use (AF)				
	2025	2030	2035	2040	2045
Single Family	5,108	5,584	6,106	6,675	7,298
Multi-Family	1,031	1,127	1,232	1,347	1,473
Commercial	1,030	1,126	1,231	1,346	1,472
Industrial	174	190	208	227	248
Landscape	700	766	837	915	1,001
Agricultural Irrigation	34	38	41	45	49
Other	325	355	389	425	464
TOTAL (AF)	**8,402**	**9,186**	**10,044**	**10,980**	**12,005**
NOTES: Future water demands based on population projections and the 5-year average (2015-2020) gross water use rate. "Other" use has been computed as the difference between total production and metered use. The category includes system losses and metering error.					

Table 4-3 summarizes projected water demands through 2045 including potable water only.

Table 4-3 Retail: Total Water Use						
	2020	2025	2030	2035	2040	2045
Potable Water (AF)	8,148	8,402	9,186	10,044	10,980	12,005
NOTES: Future water demands based on population projections and the 5-year average (2015-2020) gross water use rate.						

Table 4-4 summarizes the distribution system water losses for each of the five years preceding the plan update.

Table 4-4 Retail: Last Five Years of Water Loss Audit Reporting	
Reporting Period Start Date	Volume of Water Loss (AF)
01/2015	656
01/2016	733
01/2017	407
01/2018	-89
01/2019	-583
NOTES: Water loss based on AWWA water audit worksheet completed by ENCSD. In 2019 the District replaced customer meters and groundwater production meters due to inaccuracies in reporting.	

The individual audit reports from 2015 to 2019 are included in Appendix B.

4.2.6.2 Water Year Types

Water year types including a normal, single dry year and multiple dry years for the ENCSD service area have been identify and reported in Table 7-1.

4.2.7 Characteristic Five-Year Water Use

CWC 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.

ENCSD does not currently have any water usage restrictions in place However, ENCSD has enforced a "No Waste" Resolution previously during periods of extreme water shortage. ENCSD urges its customers to conserve water through information posted on their website, and the staff routinely monitors for leaks and makes necessary repairs. Since ENCSD is currently implementing actions to reduce water use, future demands presented in this UWMP update (**Tables 4-2** and **4-3**) assume that the characteristic use represents constrained demands. **Table 4-4a** provides a summary of the characteristic five-year water use with and without the normal Stages 1 and 2 conservation actions.

Table 4-4a: Characteristic Five-Year Water Use					
	2021	**2022**	**2023**	**2024**	**2025**
Constrained Potable and Raw Water (AF) with conservation	7,824	7,965	8,108	8,254	8,403
Unconstrained Potable and Raw Water (AF) with 10% increase	8,606	8,761	8,919	9,079	9,243
NOTES: Future water demands based on population projections and the 5-year average (2015-2020) gross water use rate.					

4.3 Worksheets and Reporting Tables

All required worksheets and reporting tables have been provided throughout this Chapter.

4.4 Water Use for Lower Income Households

Law

CWC 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.

California Health and Safety Code Section 50079.5 (a)

"Lower income households" means persons and families whose income does not exceed the qualifying limits for lower income families… In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.

ENCSD does not account for water savings from codes, standards, ordinances, or transportation and land use plans that are also known as "passive savings." However, for new development within the City of Bakersfield, builders are required to implement water efficient landscape and irrigation per the City's building code. These various factors generally decrease the water use for new and future customers, compared to historical customers.

Lower income residential demands are included in ENCSD's future demand projections via housing projections prepared by the City of Bakersfield and County of Kern. The City and County are required to plan for lower income residential units within the City/County limits.

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/page where citations of the codes, are found.	-
Are Lower Income Residential Demands Included in Projections?	Yes

4.5 Climate Change Considerations

With respect to climate change, ENCSD has not participated in or conducted an official climate change vulnerability or risk assessment for the existing water service area. However, climate change considerations for ENCSD's groundwater supply were incorporated into the KRGA GSP and the executive summary of the GSP has been included in Appendix A.

CHAPTER 5 SBX7-7 BASELINES, TARGETS, AND 2020 COMPLIANCE

New Requirements for 2020 Update

With the adoption of the Water Conservation Act of 2009, also known as the SB X7-7, the State is required to set a goal of reducing urban water use by 20 percent by the year 2020. Therefore, each retail urban water supplier was required to determine a baseline water use during their baseline as well as target water use for the years 2020 and 2025 in order to help the State achieve the 20 percent reduction. ENCSD has updated their baseline water usage and goal of reducing urban water use by 20 percent by the year 2020.

5.1 Guidance for Wholesale Suppliers

Law

CWC 10608.12. (w)

"Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

ENCSD is a retail water supplier, and this section does not apply.

5.2 SB X7-7 Forms and Summary Tables

5.2.1 SB X7-7 Verification Form (Baselines and Targets)

ENCSD's SB X7-7 Verification Form submitted for the 2015 UWMP has been include as a reference document in the 2020 UWMP as Appendix C.

5.2.2 SB X7-7 2020 Compliance Form

ENCSD has completed the 2020 SB X7-7 Compliance Form and included it as Appendix D.

5.2.3 Submittal Tables 5-1 and 5-2

Submittal **Table 5-1** and **Table 5-2** from the 2020 SB X7-7 Compliance are included in Section 5.5.

5.2.4 Regional UWMP/Regional Alliance

ENCSD has developed an UWMP that reports solely on its service area and will not be participating in a regional UWMP update.

5.3 Baseline and Target Calculations for 2020 UWMPs

Suppliers that have submitted a 2015 UWMP with the SB X7-7 Verification Form and have not had a change to their service area do not need to recalculate their baselines and targets in their 2020 UWMPs.

5.3.1 Supplier Submitted 2015 UWMP, No Change to Service Area

ENCSD submitted a 2015 UWMP and has had no change to the service area since the submittal of the plan.

5.3.2 Supplier Did Not Submit 2015 UWMP

This topic does not apply to ENCSD.

5.3.3 Supplier Newly Subject to UWMP Requirements

This topic does not apply to ENCSD.

5.3.4 Distribution Area Expansion

This topic does not apply to ENCSD.

5.3.5 Distribution Area Contraction

This topic does not apply to ENCSD.

5.3.6 Large Partial Customers Become Whole Customers

This topic does not apply to ENCSD.

5.4 Methods for Calculating Population and Gross Water Use

5.4.1 Service Area Population

Law

> ***CWC 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.*
>
> ***CWC 10644***
> *(a)(2) The plan…shall include any standardized forms, tables or displays specified by the department.*

Since the ENCSD service area extends outside the limits for the City of Bakersfield and includes areas of Kern County, the 2020 ENCSD service area population was provided by the KCOG. The KCOG used ACS 2019 data and the ENCSD service area boundaries to estimate the 2020 population within the District's service area.

5.4.2 Gross Water Use

Law

> ***CWC 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.*
>
> ***California Code of Regulations Title 23 Division 2 Chapter 5.1 Article***
> *Section 596 (a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculation of its gross water use to avoid a disproportionate burden on another customer sector.*

Historical gross water use for this UWMP was obtained from ENCSD's Yearly Public Water System Statistic reports submitted to the DWR from 1995-2007.

5.5 2020 Compliance Daily Per-Capita Water Use (GPCD)

Law

CWC 10608.12
(f) "Compliance daily per-capita water use" means the gross water use during the final year of the reporting period…

CWC 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.

The baseline daily per capita water use for ENCSD for this UWMP update is shown in **Table 5-1**.

Table 5-1 Baselines and Targets Summary				
Baseline Period	**Start Year**	**End Year**	**Average Baseline GPCD***	**Confirmed 2020 Target***
10-15 year	*1995*	*2004*	*389*	*311*
5 Year	*2003*	*2007*	*333*	
*All values are in Gallons per Capita per Day (GPCD)				

ENCSD has not applied any adjustments to the 2020 gross water use for this UWMP update.

Table 5-2: 2020 Compliance				
Actual 2020 GPCD*	**2020 GPCD**		**2020 Confirmed Target GPCD***	**Did Supplier Achieve Targeted Reduction for 2020? Y/N**
	2020 TOTAL Adjustments*	**Adjusted 2020 GPCD***		
224	0	224	311	Y
NOTES: **All values are in Gallons per Capita per Day (GPCD)*				

5.5.1 <u>2020 Adjustments for Factors Outside of Supplier's Control</u>

Law

CWC 10608.24
(d)(1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, Methodology 4

This section discusses adjustments to compliance-year GPCD because of changes in distribution area caused by mergers, annexation, and other scenarios that occur between the baseline and compliance years.

ENCSD has not included any adjustments (including Extraordinary Institutional Water Use, Economic Adjustment (CII), or Weather Normalization) for the 2020 GPCD compliance evaluation.

5.5.2 Special Situations

ENCSD does not have any special situations that require them to recalculate their baselines and 2020 Target in the 2020 UWMP.

5.5.3 If Supplier Does Not Meet 2020 Target

As shown in **Table 5-2**, ENCSD has met the 2020 GPCD compliance target.

5.6 Regional Alliance

ENCSD has developed an UWMP that reports solely on its service area and will not be participating in a regional UWMP update and SB X7-7 compliance will be for the ENCSD service area only.

CHAPTER 6 WATER SUPPLY CHARACTERIZATION

New Requirements for 2020 Update

Per Water Code, the following new requirements are necessary for this chapter of the UWMP 2020 update.

- ❑ The new requirements for a water supply analysis are largely in the application of that analysis to the new Drought Risk Analysis (DRA), Water Shortage Contingency Plan (WSCP), and consideration of climate change in future projections.
- ❑ The conclusions drawn from the water supply characterization integrate into a specific understanding of a Supplier's new drought risk in the DRA and inform the management and mitigation actions a Supplier must address in the newly required WSCP, along with consideration of climate change and coordination with land use and planning authorities for future projections. For example, an analysis that concludes that a water supply portfolio is reliable under all conditions conceivable may have fewer supply augmentation actions or demand management actions in a WSCP.
- ❑ Water supply analysis conclusions translate into a realistic DRA and implementable actions listed in the WSCP in the event of water shortage conditions.

6.1 Water Supply Analysis Overview

Law

> ***CWC 10631 (b)***
> *Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier [in five-year increments to 20 years or as far as data is available]1 providing supporting and related information, including all of the following:*
>
> *(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.*
>
> *(2) When multiple sources of water supply are identified, a description of the management of each supply in correlation with the other identified supplies.*
>
> *(3) For any planned sources of water supply, a description of the measures that are being undertaken to acquire and develop those water supplies.*
>
> ***CWC 10631 (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).*

6.2 Water Supply Characterization

6.2.1 Purchased or Imported Water

With the expansion of the Henry C. Garnett Water Purification Plant (HCGWPP) in connection with the KCWA Improvement District No. 4 (ID4), ENCSD was able to execute a contract for 11,000 AFY of treated surface water annually.

Per the September 2005 Agreement Between Kern County Water Agency and East Niles Community Services District for a Water Supply (see copy in **Appendix E**), the water supply is for the benefit of the lands and inhabitants served by ENCSD within the confines of KCWA's ID4. If and when the District acquires a water supply that could be treated at the HCGWPP, then water (with agreement from KCWA) could be moved to serve other areas within the District which may be outside of KCWA's ID4. **Tables 6-8** and **6-9** summarize the current and projected KCWA surface water supply.

According to the Draft ID4 2020 UWMP Update, Water Service Reliability and Drought Risk Assessment, ID4 has determined that there are adequate supplies to meet demand in a normal year, a single dry year, and five consecutive dry years. Therefore, this water supply source is considered 100% reliable and available during normal, single, and multiple dry year conditions.

However, if a temporary and or extended water shortage condition exists, ID4 could impose the following conditions stated in Article 12 of the Water Shortage Agreement Between Kern Water Agency and East Niles Community Services District for a Water Supply:

"(A) At times there may occur a shortage during any year in the quantity of water available for delivery to the Purveyor by the Agency pursuant to this Agreement. However, if the Agency can prevent or diminish a shortage in treated water by temporarily halting or curtailing its spreading of water for recharging the underground in improvement District No. 4, it may do so at its discretion. The Agency may use Improvement District No. 4 groundwater banking projects or in-district wells for reducing shortages subject to a separate agreement with the Purveyor.

(B) To eliminate or reduce shortages, Customers may secure and deliver non-Improvement District No. 4 surface water to the Henry C. Garnett Water Purification Plant for treatment under the following terms:

> *(I) A request for delivery and subsequent treatment of any non-Improvement District No. 4 surface water shall require Agency approval.*
>
> *(2) A request to deliver non-Improvement District No. 4 water shall be submitted in writing to the Agency for review ninety (90) days prior to the expected date of delivery. Such request shall include information as to the quantity, quality and origin of the source water. Requesting Customer shall provide all information pertaining to the source as requested by Agency.*
>
> *(3) Improvement District No. 4 shall be responsible for the scheduling of all non-Improvement District No. 4 surface water and shall coordinate the delivery of non-Improvement District No. 4 surface water with Customer. The point of delivery for any non-Improvement District No. 4 surface water shall be the headworks of the Henry C. Garnett Water Purification Plant or any other point of delivery available to Customer and Improvement District No. 4 which is mutually agreeable.*

(C) No liability shall accrue against the Agency or any of its officers, agents, or employees for any damage, direct or indirect, arising from a shortage on account of drought or other unavoidable causes. In any year in which such a shortage may occur for any cause so that the total quantity of water available to the Agency for distribution to the Purveyor and other Customers taking water from the treatment facilities is less than the total of all quantities contracted for by the Purveyor and other Customers, the Agency shall apportion the available treated water among the Customers in proportion to their Total Annual Entitlements, for the current year, as set forth in Exhibit D and pursuant to Articles 8 and 10.

(D) The Agency shall give the Purveyor written notice as far in advance as reasonably possible of any such reduction in delivery to it. [1]"

---

[1] Agreement Between Kern County Water Agency and East Niles Community Services District for a Water Supply

6.2.2 Groundwater

Law

CWC 10631 (b)(4)
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:

(A) The current version of any groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720), any groundwater management plan adopted by the urban water supplier, including plans adopted pursuant to Part 2.75 (commencing with Section 10750), or any other specific authorization for groundwater management for basins underlying the urban water supplier's service area.

(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. For basins that a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the urban water supplier has the legal right to pump under the order or decree. For a basin that has not been adjudicated, information as to whether the department has identified the basin as a high- or medium-priority basin 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 coordinate with groundwater sustainability agencies or groundwater management agencies listed in subdivision (c) of Section 10723 to maintain or achieve sustainable groundwater conditions in accordance with a groundwater sustainability plan or alternative adopted pursuant to Part 2.74 (commencing with Section 10720).

(C) 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.

(D) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the urban water supplier. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Over the years, surface water sources have become available to the District and currently represent approximately half of the total water supply. The District operates their system to prioritize the use of the surface supply (within ID4) and supplements with the groundwater supply. It is expected that the District will continue to use the combination of surface and groundwater supply sources to meet existing and future customer demands within the District's service area.

The District extracts water from the Kern County Subbasin which is described by the California Department of Water Resources Bulletin 118-Update 2003 as a subbasin of the Tulare Lake Groundwater Basin, as shown in **Figure 6-1**. ENCSD presently has six active groundwater wells spaced throughout the southern portion of the District. The pumping capacities for the six wells are as follows (the annual capacities listed assume wells operate 75% of day):

- Well 14 – 850 gpm (1,028 AFY)
- Well 18 – 550 gpm (887 AFY)
- Well 19 – 2,000 gpm (2,420 AFY)
- Well 20 – 1,600 gpm (1,936 AFY)
- Well 21 – 1,400 gpm (1,694 AFY)
- Well 22 – 450 gpm (544 AFY)

All of the wells, except for Well 21, are configured such that they do not pump directly into the distribution system, but rather all pump to a common distribution location, which is called the Kern Citrus Tank Facility. The District relies on the booster pump station at the Kern Citrus Tank Facility to pump the well water into the higher elevation storage reservoirs in the northern portion of the District. Although the combined capacity of all wells is slightly more than 8,200

AFY (assuming wells operate 75% of the day), the amount of water that is available to the District, except that area served by Well 21, is limited by the capacity of the Kern Citrus booster pump facility, which is currently approximately 5,806 AFY. The Kern County Subbasin is not adjudicated, ENCSD is a member of the Kern River Groundwater Sustainability Agency (KRGSA) which is a Groundwater Sustainability Agency that oversees groundwater use within the Subbasin.

Figure 6-1: Kern County Subbasin

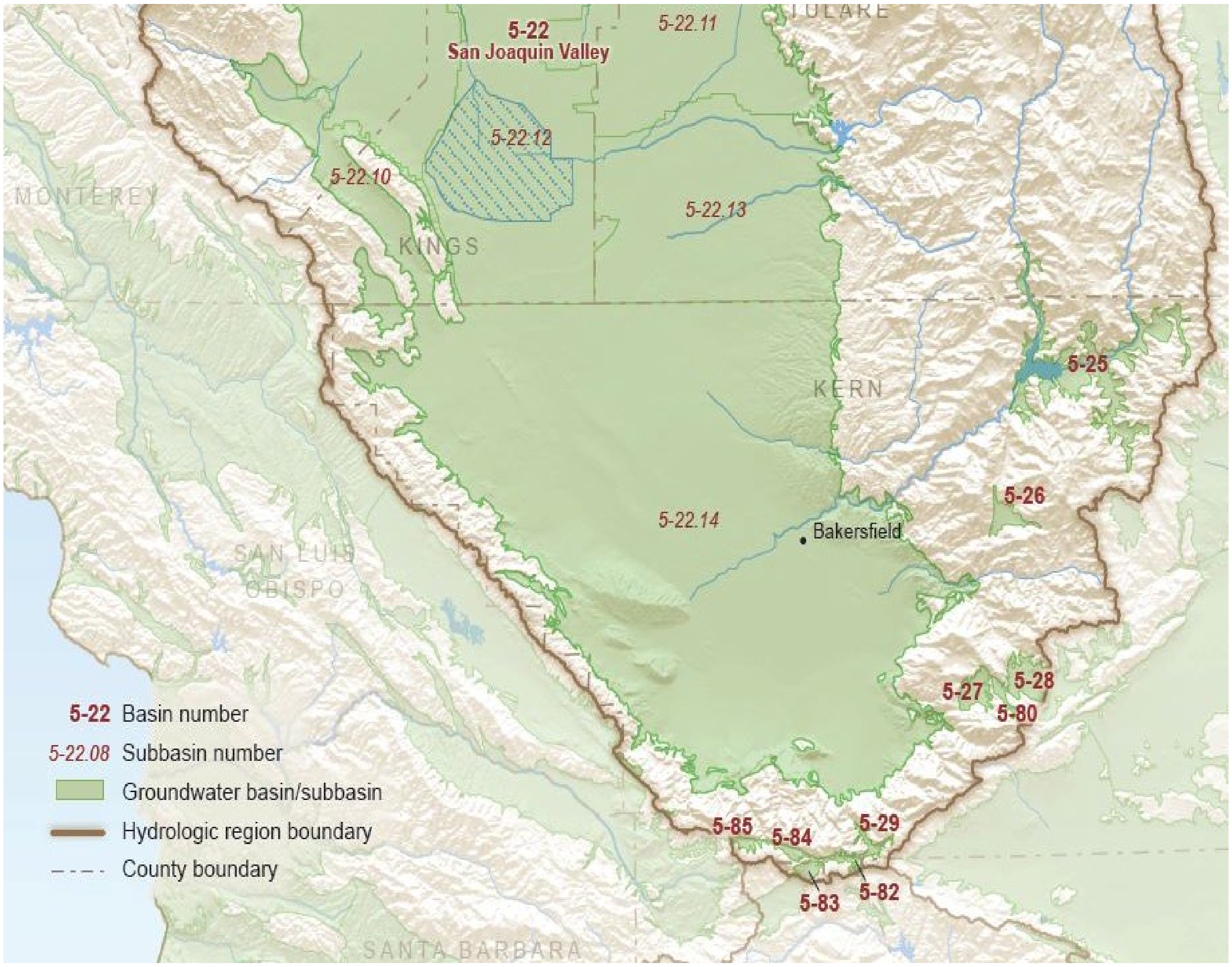


Figure 6-1: Kern County Subbasin (ENCSD 2015 UWMP Update)

6.2.1.1 Basin Description

The KRGSA Groundwater Sustainability Plan (GSP) area covers 361 square miles (13%) of the Kern County Subbasin, as shown in **Figure 6-2**. The 2019 KRGSA GSP included the following description of the Kern County Subbasin:

> *Kern County Subbasin consists of the upper portion of a deep structural trough between the crystalline basement rocks of the Sierra Nevada and the Coast Ranges. The deeper portions of the trough contain mostly Miocene and older marine sedimentary units. The upper trough has been infilled over time with Upper Miocene/Plioceneand younger continental sediments, which contain most of the Subbasin groundwater.*
>
> *Groundwater beneath the Plan Area occurs under unconfined to semi-confined conditions in the continental sediments of the Kern River Formation and overlying alluvium, collectively forming the*

Principal Aquifer. The interbedded nature of the gravels, sands, silts, and clays of the Principal Aquifer are illustrated on the cross section below; although clay content generally increases with depth, clay layers are often discontinuous and most wells are screened over a large interval, making it difficult to clearly define more than one Principal Aquifer. The Subbasin extends several thousand feet beneath the Plan Area with the bottom defined by either the base of the Underground Source of Drinking Water (USDW, defined by USEPA), oilfield-exempted aquifers, or oil-producing zones, whichever is shallowest. Trends and fluctuations in groundwater elevations are illustrated in the GSP by a series of hydrographs. Over time, water levels have declined and recovered during drought and wet periods with fluctuations of less than 50 feet to more than 150 feet (at groundwater banking areas). During the drought of 2013-2016, water levels declined an average of 50 feet across the Plan Area to reach historic lows. In some banking areas, the difference between the high-water level (1998) and historic low water level (2015) is more than 350 feet.

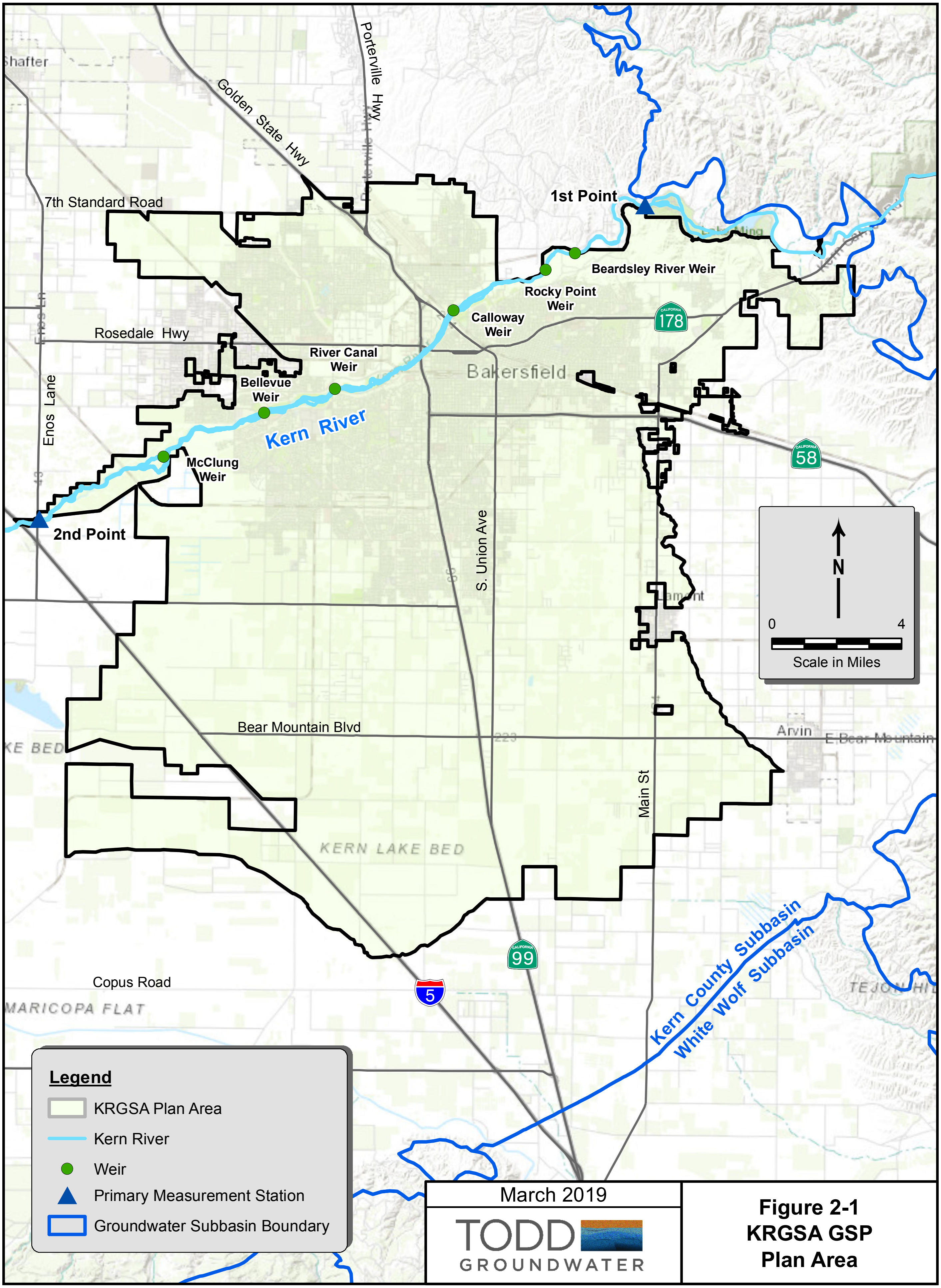


Figure 6-2: KRGSA Plan Area (KRGSA Groundwater Sustainability Plan, Plan Area dated March 2019)

6.2.2.2 Multiple Groundwater Basins

The District only pumps water from the Kern County Subbasin.

6.2.2.3 Other Considerations

The KRGSA GSP provided the following background information about the KRGSA:

> *The KRGSA is an exclusive Groundwater Sustainability Agency (GSA) composed of member agencies including the City of Bakersfield, Kern Delta Water District (KDWD), Kern County Water Agency (KCWA) Improvement District No. 4 (ID4), North of the River Municipal Water District/Oildale Mutual Water Company (NORMWD/OMWC), and East Niles Community Services District (ENCSD).*
>
> *The Plan Area will be cooperatively managed by member agencies of the KRGSA along with Greenfield County Water District, which is its own GSA and is cooperatively participating in the KRGSA GSP. The KRGSA has a diverse portfolio of water sources managed by member agencies and other entities in the Plan Area. Local surface water from the Kern River, imported water from the State Water Project (SWP), recycled water, and other surface water sources provide about one-half of the total water supply to the Plan Area (about 327,786 AFY on an average annual basis) to support beneficial uses. These surface water sources are supplemented by groundwater (average of about 321,871 AFY) and managed conjunctively throughout the Plan Area.*
>
> *The Sustainability Goal of the KRGSA GSP (Water Code §10721(u)) is to manage groundwater sustainably in the KRGSA Plan Area to:*
>
> - ❑ *Support current and future beneficial uses of groundwater including municipal, agricultural, industrial, public supply, domestic, and environmental.*
> - ❑ *Optimize conjunctive use of surface water, imported water, and groundwater.*
> - ❑ *Avoid or eliminate undesirable results throughout the planning horizon.*

The KGRSA GSP has the authority to develop and implement SGMA within its service area by adopting standards for measuring and reporting groundwater use, implementing policies to eliminate overdraft, implementing conservative management practices, and metering and monitoring groundwater pumping. The KGRSA GSP identified minimum thresholds for water levels as a sustainability indicator for the subbasin. The ENCSD wellfield's minimum threshold is 50 feet below the historic low water level, which is defined as the lowest water level observed in the area during the 2013-2016 drought.

ENCSD in partnership with KGRSA has implemented the ENCSD North Weedpatch Highway Water System Consolidation Project to help reach the sustainability goals identified in the GSP. According to the GSP the project:

- ❑ Consolidates up to 6 small water systems with ENCSD to address water quality concerns.
- ❑ Reduces nitrate concentrations in drinking water.
- ❑ Provides for 1,2,3-TCP and arsenic treatment to improve drinking water for disadvantaged communities.

ENCSD participates in the ongoing management actions described by the KRGSA GSP:

Management actions provide a framework for overall groundwater management including establishing GSP policies and filling data gaps. Ten management actions have been identified for implementation:

- ❑ *5-Step Action Plan if Minimum Thresholds are exceeded.*
- ❑ *Optimize Conjunctive Use in the KRGSA.*
- ❑ *Implement a Well Metering Program.*
- ❑ *Implement a Groundwater Extraction Reporting Program.*
- ❑ *Support California Delta Conveyance to Preserve Imported Supplies.*
- ❑ *Incorporate Climate Change Adaptation Strategies.*
- ❑ *Support Sustainable Groundwater Supplies for KRGSA Disadvantaged Communities.*
- ❑ *Improve Groundwater Monitoring in the KRGSA Plan Area.*
- ❑ *Incorporate a Policy of Adaptive Management in the GSP Process*

The Executive summary of the KRGSA GSP has been included as Appendix A.

6.2.2.4 Groundwater Volume Pumped in Last Five Years

Law

CWC 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.

Table 6-1 provides an overview of the groundwater sources and the annual quantity pumped to meet the demands of the ENCSD customers from 2016 to 2020.

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**
Alluvial Basin	San Joaquin Valley Groundwater Basin - Kern County Subbasin 5-22.14	2,678	2,649	2,811	2,477	2,249
	TOTAL	**2,678**	**2,649**	**2,811**	**2,477**	**2,249**
NOTES: Groundwater pumped from the Kern County Subbasin.						

Based on redundancy within ENCSD's existing well field and groundwater management practices under the KRGSA GSP, this water supply source is considered 100% reliable and available during normal, single, and multiple dry year conditions.

6.2.3 Surface Water

ENCSD has evaluated options for obtaining a self-supplied surface water source. At present, the District does not use nor plan to use a self-supplied surface water as part of its water supply. Surface water used by the District is supplied by the KCWA and has been reported in Section 6.1.

6.2.4 Stormwater

The District recognizes the benefits of storm water reuse but does not currently participate in a storm water reuse program. The District will continue to examine available water reuse options including beneficial use of storm water to alleviate possible strains on its water supply needs.

6.2.5 Wastewater and Recycled Water

Law

CWC 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, and shall include all of the following:

(a) A description of 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.

(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.

(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.

(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.

(f) A description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.
(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.

ENCSD manages wastewater collection for its customers, but treatment is provided by the City of Bakersfield at Wastewater Treatment Plant No. 2 and the Kern Sanitation Authority at the Kern County Wastewater Treatment Plant. ENCSD understands that wastewater recycling is an important tool to use in reducing demands upon the groundwater basin as well as surface water supplies. The District is a member of a wastewater Technical Advisory Committee, along with the City of Bakersfield and Kern Sanitation Authority, which discusses options for increases in the use of recycled water. At present, the District is not able to implement recycled water use on its own as no sources are available.

6.2.5.1 Recycled Water Coordination

CWC 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.

ENCSD does not currently nor does ENCSD intend to provide recycled water service to customers within the service area.

6.2.5.2 Wastewater Collection, Treatment, and Disposal

Law

CWC 10633 (a)
A description of 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.

ENCSD provides sewer collection for its customers within its service area boundary. Collected sewage is sent to the City of Bakersfield's Wastewater Treatment Plant No. 2 and the Kern Sanitation Authority Wastewater Treatment Plant where it is treated to a secondary level and then used as an irrigation supply for restricted farming uses. It is expected that this practice will continue in the future and aid the groundwater basin through in lieu recharge.

Exact wastewater production records for ENCSD are not possible to calculate because the City of Bakersfield, Kern Sanitation Authority, and the District all share common trunk lines. However, to estimate the total wastewater production in the District, the per capita wastewater generation was estimated to be 100 GPD. Based on this estimate, the District should have produced approximately 10.53 acre-feet per day (AFD) of wastewater in 2020. **Table 6-2** provides the estimated volume of wastewater collected by the District's collection system during 2020.

Table 6-2 Retail: Wastewater Collected Within Service Area in 2020						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
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?
ENCSD	Estimated	3,844	City of Bakersfield & Kern Sanitation Authority	Wastewater Treatment Plant No. 2 & Kern County Wastewater Plant	No	Yes
Total Wastewater Collected from Service Area in 2020 (AF):		3,844				

No recycled water is discharged into ENCSD's service aera, **Table 6-3** does not apply.

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									
						2020 volumes				
Wastewater Treatment Plant Name	**Discharge Location Name or Identifier**	**Discharge Location Description**	**Method of Disposal**	**Does This Plant Treat Wastewater Generated Outside the Service Area?**	**Treatment Level**	**Wastewater Treated**	**Discharged Treated Wastewater**	**Recycled Within Service Area**	**Recycled Outside of Service Area**	**Instream Flow Permit Requirement**
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
					Total (AF):	NA	NA	NA	NA	NA

6.2.5.3 Recycled Water System Description

Law

CWC 10633 (c)

(b) 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.

Recycled water is not currently being used in ENCSD's service area.

6.2.5.4 Potential, Current, and Projected Recycle Water Uses

Law

CWC 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) (Provide) a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

ENCSD does not currently nor does ENCSD intend to provide recycled water service to customers within the service area.

Table 6-4 Retail: Current and Projected 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 Agency Producing (Treating) the Recycled Water:									
Name of Supplier Operating the Recycled Water Distribution System									
Supplemental Water Added in 2020									
Source of 2020 Supplemented Water									
Beneficial Use Type	**Potential Beneficial Use of Recycled Water**	**General Description of 2020 Uses**	**Level of Treatment**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045 (opt)**
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
			Total (AF):	NA	NA	NA	NA	NA	NA

As shown in **Table 6-5**, recycled water was not used in 2015 nor projected for use in 2020.

Table 6-5 Retail: 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**
NA	NA	NA
Total (AF):	NA	NA

6.2.5.5 Actions to Encourage and Optimize Future Recycled Water Use

Law

> *CWC 10633*
> *(f) (Describe the) actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.*
>
> *CWC 10633*
> *(g) (Provide 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 District is relying upon its continued participation in the City of Bakersfield Regional Wastewater Treatment facility (WWTP No. 2) for disposal of treated effluent. However, the District is also participating in ongoing discussions with the City of Bakersfield regarding expansion of the WWTP. Recycled water facilities will be a topic of discussion with the City in any proposed expansion. Until discussions with the City progress, it is not possible to project which types of incentives may be employed.

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.		
6-9	Provide page location of narrative in UWMP		
Name of Action	**Description**	**Planned Implementation Year**	**Expected Increase in Recycled Water Use**
NA	NA	NA	NA
		Total	0

6.2.6 Desalinated Water Opportunities

Law

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

ENCSD is not located near the ocean or any significant brackish groundwater supplies. However, ENCSD has in the past preliminary evaluated the feasibility of treating impaired groundwater supplies on the west side of the San Joaquin Valley for potential treatment and delivery to a water storage district on the west side of the valley. If this type of project were developed, it is presumed that an equivalent amount of State Water Project water from a west side district could then be delivered to ENCSD. At present, the implementation of such a program is not believed to be financially feasible.

6.2.7 Water Exchanges and Transfers

Law

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

ENCSD is not currently engaged in any water transfers or exchanges. However, the District does benefit from KCWA's involvement in multiple transfer and exchange opportunities that contribute to the reliability of the District's KCWA surface water supply.

6.2.8 Future Water Projects

Law

> ***CWC 10631***
> *(f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. 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 average, single-dry, and multiple-dry 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.*

ENCSD does not anticipate being involved in any planned or potential future water projects or programs to increase its water supply over the available from existing sources. ENCSD will continue to receive imported water from KCWA ID4 and pump groundwater from the Kern County Subbasin.

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.					
Page 6-9	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency (AFY)
NA	NA	NA	NA	NA	NA	NA

6.2.9 Summary of Existing and Planned Sources of Water

Law

CWC 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 10631(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).

6.2.9.1 Description of Supplies

The District's existing water supply sources include local groundwater and imported surface water. Based on historical production information provided by the District, the Kern County Subbasin and ongoing water resources planning efforts, it was assumed that the District's water supplies are considered reliable and 100% available during normal, single, and multiple drought conditions.

6.2.9.2 Quantification of Supplies

Table 6-8 provides an overview of the actual source and volume of water for the year 2020 that is available to serve the ENCSD customer base.

Table 6-8 Retail: Water Supplies — Actual			
Water Supply	Additional Detail on Water Supply	2020	
		Actual Volume	Water Quality
Groundwater	Kern County Subbasin	2,249	Drinking Water
Imported Water (Surface Water KCWA)	KCWA -ID4	5,899	Drinking Water
	Total (AF)	**8,148**	

Table 6-9 provides an overview of the projected water supplies available to ENCSD to serve future demands through 2045.

Table 6-9 Retail: Water Supplies — Projected						
Water Supply	Additional Detail on Water Supply	**Projected Water Supply**				
		2025	**2030**	**2035**	**2040**	**2045**
		Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume	Reasonably Available Volume
Groundwater	Kern County Subbasin	5,806	5,806	5,806	5,806	5,806
Purchased or Imported water	Kern County Water Agency-ID4	11,000	11,000	11,000	11,000	11,000
Total (AF)		**16,806**	**16,806**	**16,806**	**16,806**	**16,806**

For the UWMP it is assumed that ENCSD will receive 11,000 AFY as needed from the Kern County Water Agency- ID4 to supplement/offset future groundwater pumping from the Kern County Subbasin. ENCSD groundwater production is assumed to be limited only by the Kern Citrus booster pump capacity of 5,806 AFY.

6.2.10 Special Conditions

ENCSD does not have any special conditions that may affect future water supplies.

6.2.10.1 Climate Change Effects

With respect to climate change, the District has not participated in or conducted an official climate change vulnerability or risk assessment for the existing water service area. However, climate change considerations for ENCSD's groundwater supply were incorporated into the KRGSA GSP and a copy of the executive summary has been included in Appendix A.

6.2.10.2 Regulatory Conditions and Project Development

There are no known regulatory changes that would impact future water characterization within the ENCSD service area.

6.2.10.3 Other Locally Applicable Criteria

There are no known local flow criteria that would impact future water supply within the ENCSD service area.

6.3 Submittal Tables

All required submittal tables for ENCSD's water supply characterization are included throughout this chapter.

6.4 Energy Intensity

Law

> ***CWC 10631.2. (a)***
> *In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:*
>
> *(1) An estimate of the amount of energy used to extract or divert water supplies.*
>
> *(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.*
>
> *(3) An estimate of the amount of energy used to treat water supplies.*
>
> *(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.*
>
> *(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.*
>
> *(6) An estimate of the amount of energy used to place water into or withdraw from storage.*
>
> *(7) Any other energy-related information the urban water supplier deems appropriate.*

The water system is comprised of approximately 110 miles of distribution piping and 13 storage tanks with a combined capacity of 13.8 MG. There are 6 active wells and 9 booster pump stations located throughout the system. Elevations range from 900 feet to less than 400 feet above sea level. There are three reporting options based on available data which include the following:

- ❑ Option 1: Energy Intensity – Water Supply Process Approach by the individual Water Management Processes
- ❑ Option 2: Energy Intensity – Total Utility Approach using the sum of all Water Management Processes and total energy for the system.
- ❑ Option 3: Energy Intensity – Multiple Water Delivery Products by breaking down percentages for retail potable, retail non-potable, agricultural, etc.

Table 6-10 summarizes the ENCSD's supply facilities energy intensity using Option 2: Energy Intensity – Total Utility Approach.

Table 6-10: Recommended Energy Intensity - Total Utility Approach				
Enter Start Date for Period	1/1/2020	**Urban Water Supplier Operational Control**		
End Date	12/31/2020	**Sum of all Water Processes**	**Non-Consequential Hydropower**	
		Total Utility	**Hydropower**	**Net Utility**
Volume of Water Entering Process (AF)		2,250	0	0
Energy Consumed (kWh)		543,938.22	0	0
Energy Intensity (kWh/AF)		241.8	0	0

CHAPTER 7 WATER SUPPLY RELIABILITY ASSESSMENT

New Requirements

Per the Water Code, the following new requirements are necessary for this chapter of the UWMP 2020 update.

- The new UWMP requirements is manifest in the application of new criteria to the Water Use Analysis in Chapter 4, the Water Supply Analysis in Chapter 6, and the resulting water service reliability assessment in this chapter—including the requirement for a five-consecutive dry years analysis compared to the 2015 UWMPs, which included only a three-year analysis.
- A new DRA is now also required under California Water Code (Water Code) Section 10635, and it must be prepared as a component of the 2020 UWMP. The DRA requires a methodical assessment of water supplies and water uses under an assumed drought period that last five consecutive years. The newly required WSCP is described in Chapter 8.

7.1 Introduction

Assessing water service reliability is the fundamental purpose for an urban water supplier to prepare and update their UWMP. Water service reliability reflects the Supplier's ability to meet the water needs of its customers with water supplies under varying conditions. ENCSD's UWMP considers the reliability of meeting customer water use by analyzing plausible hydrological variability, regulatory variability, climate conditions, and other factors that could affect ENCSD's water supply and its customers' water uses. This chapter synthesizes the details imbedded in the other chapters (including 4, 6, 8, and 9) and it provides a rational basis for future decision-making related to supply management, demand management, and project development. In addition, this chapter includes a new requirement for a Drought Risk Assessment (DRA) that enables ENCSD to evaluate its risk under a severe drought period lasting for the next five consecutive years.

7.2 Water Service Reliability Assessment

Law

> ***CWC 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 total projected water use over the next 20 years, in five-year increments, for a normal water year, a single dry water year, and multiple dry 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.*

ENCSD has never had a single year or multiple dry years in which it did not meet 100% of its demand, regardless of regional hydrology. Therefore, there is no basis in the hydrologic record for reducing supply reliability based upon single and/or multiple dry year conditions when imported water supply is available in addition to historical groundwater production. On this assumption, ENCSD's supply is presented as 100% reliable for single and multiple dry year periods as summarized in the following sections.

ENCSD developed **Table 7-0**, which involved a preliminary climate change vulnerability screening (including impacts from extreme heat, water quality, sea level rise, flooding, and wildfire) for its water supplies.

The water service reliability assessment summarizes ENCSD's expected water service reliability for a normal year, single dry year, and five consecutive dry years projections for 2025, 2030, 2035, and through 2045.

7-0: Preliminary Climate Change Vulnerability Screening			
		Kern County Subbasin	
Item	Assessment	Response	Level of Risk
I. Water Supply and Demand			
1	Are the water supply diversions sensitive to climate change?	Yes	3
2	Is the water supply source affected by urban or agricultural water demand that might be climate sensitive?	Yes	5
3	Is groundwater a major supply source?	Yes	4
4	Does the water supply source rely on or could it be affected by snowmelt?	Yes	4
5	Does the water supply source come from or could it be affected by coastal aquifers? Has saltwater intrusion been a problem in the past?	No	Not applicable
6	Does the water supply source rely on or could it be affected by changes in stored water supplies?	Yes	4
II. Extreme Heat			
1	Could extreme heat impact operations of the water supply project or diversions?	Yes	4
2	Does the supply source rely on equipment or infrastructure that could be impacted by extreme or prolonged heat?	Yes	3
III. Water Quality			
1	Could water quality issues, such as low dissolved oxygen, algal blooms, disinfectant biproducts affect the water supply source?	No	Not applicable
2	Could reduction in assimilative capacity of a receiving water body affect the water supply source?	No	Not applicable
3	Could the water supply source be affected by water quality shifts during rainfall/runoff events?	Yes	3
IV. Sea Level Rise			
1	Is any of the water supply source infrastructure located in area that could be exposed to rising tides?	No	Not applicable
2	Could coastal erosion affect the water supply source?	No	Not applicable
3	Is the water supply source dependent on coastal structures, such as levees or breakwaters, for protection from flooding?	No	Not applicable
V. Flooding			
1	Is the water supply or any of its associated infrastructure located within the 200-year floodplain? Does the water supply source rely on flood protection infrastructure such as levees or dams?	Yes	3
VI. Wildfire			
1	Is the water supply source located in an area that is expected to experience an increase in wildfire activity or severity? Would a wildfire result in damage to the water supply source infrastructure or interruption of its ability to perform as designed? Could the water supply source be affected by an increase in wildfire activity or severity in an upstream watershed or other adjacent area?	Yes	3
Notes: Level of Risk: 1-low, 3-medium, 5-high			

7.2.1 Service Reliability- Constraints on Water Sources

Law

> ***CWC 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.*

As described in Chapter 6, ENCSD's supply portfolio includes imported surface water from KCWA-ID4, with a maximum allocation of 11,000 AFY and groundwater pumping from the Kern County Subbasin with a maximum pumping capacity of 5,806 AFY. ENCSD benefits from having multiple water sources to draw from during shortages. Based on redundancy within ENCSD's existing well field and groundwater management practices under the KRGSA GSA, ENCSD's water supply sources are considered 100% reliable and available during normal, single, and multiple dry year conditions. ENCSD has never had a single year or multiple dry years in which it did not meet 100% of its demand, regardless of regional hydrology. The District works diligently to build redundancy into their supplies. The surface water supply from KCWA-ID4 is in excess of the current demands excluding groundwater sources. Due to this redundancy, the District has had consistent supplies even in years when supplies would be anticipated to be inconsistent due to climactic conditions.

With respect to quality of groundwater the KRGSA GSP reported that the most common water quality issues within the Subbasin are nitrate, arsenic, boron, 1,2,3-trichlorpropane (TCP), total dissolved solids (TDS), sodium, and chloride. The District has observed high arsenic and TCP concentrations in the past and currently operates and maintains three arsenic treatment systems and is in the process of installing one TCP treatment system.

7.2.2 Service Reliability- Year Type Characterization

To determine the normal, single dry year, and five consecutive dry years within the service area, ENCSD reviewed historical rainfall data from NOAA Bakersfield Airport Station's precipitation gauge. The results of the historical rainfall data review are presented in **Figure 7-1**.

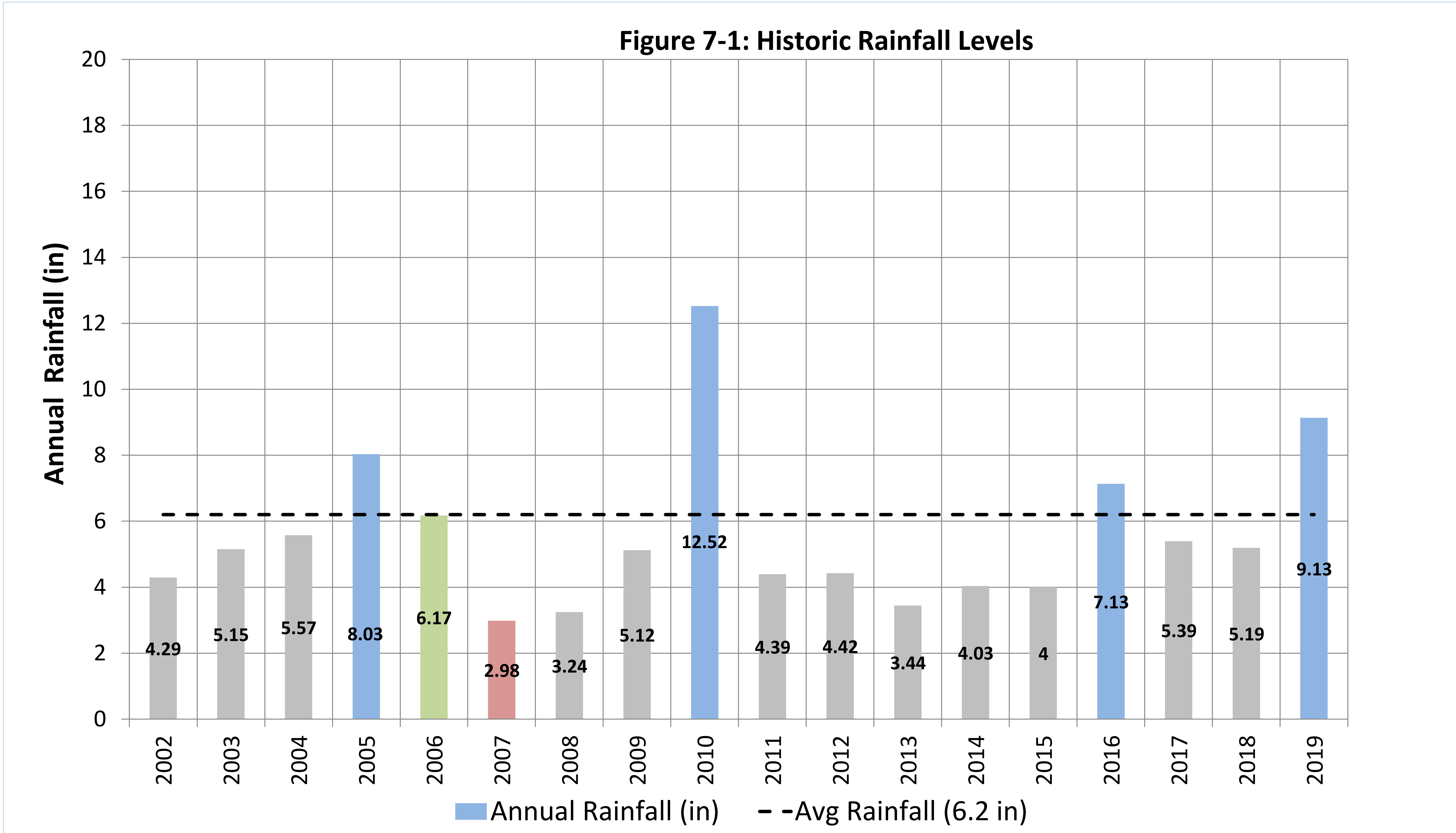


Figure 7-1: Historic Rainfall Levels
Annual Rainfall (in)
0
2
4
6
8
10
12
14
16
18
20
4.29
5.15
5.57
8.03
6.17
2.98
3.24
5.12
12.52
4.39
4.42
3.44
4.03
4
7.13
5.39
5.19
9.13
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
Annual Rainfall (in)
Avg Rainfall (6.2 in)

Table 7-1 identifies the basis of water year data as required by the UWMP and identifies the volume of ENCSD 's water supply that was available to serve demands during historical normal, single, and multiple dry year conditions. The volume available shown in the table below represents both imported water from the KCWA-ID4 with a current maximum allocation of 11,000 AFY and groundwater pumping with a maximum pumping capacity of 5,806 AFY. This represented the amount of water supply that was available during historical normal, single, and multiple dry year conditions to serve demands.

Table 7-1 Retail: Basis of Water Year Data				
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.	
		☑	Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)		**% of Average Supply**
Average Year	2006	13,671		100%
Single-Dry Year	2011	16,806		123%
Multiple-Dry Years 1st Year	2011	16,806		123%
Multiple-Dry Years 2nd Year	2013	16,806		123%
Multiple-Dry Years 3rd Year	2014	16,806		123%
Multiple-Dry Years 4th Year	2015	16,806		123%
Multiple-Dry Years 5th Year	2016	16,806		123%
NOTE: The contract with ENCSD and KCWA ID4 was not fully executed in 2006 and not all 11,000 AF were supplied.				

Table 7-1a supplements information in the **Table 7-1** above, in that it summarizes the actual water supply produced during historical normal, single, and multiple-dry year conditions to serve customer demands. Because of ENCSD's forward thinking, regional water resource planning efforts, and groundwater management they have developed a robust water supply portfolio for serving existing and future customer demands. In addition, as seen in calendar years 2014 – 2016, ENCSD's existing water shortage contingency plan policies and demand management measures (DMMs) were effective in implementing consumer conservation efforts to reduce overall system demand during state-wide drought conditions.

Table 7-1a Historical Production			
Year Type	**Year**	**Actual Production (AFY)**	**% of Average Production**
Average Year	2006	10,388	100%
Single-Dry Year	2009	9,187	88%
Multiple-Dry Years 1st Year	2012	9,187	88%
Multiple-Dry Years 2nd Year	2013	10,126	97%
Multiple-Dry Years 3rd Year	2014	9,342	90%
Multiple-Dry Years 4th Year	2015	7,502	72%
Multiple-Dry Years 5th Year	2016	7,874	76%
NOTE: % of Average Production in the table represents ENCSD's ability to work with customers to reduce water demands during drought years and does not reflect supply limitations.			

7.2.3 Service Reliability – Supply and Demand Comparison

Law

CWC 10631 (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.

7.2.3.1 Water Service Reliability – Normal Year

Table 7-2 provides a summary of ENCSD's projected supply and water demands through 2045. The future demand projections are based on future population projections as described in Section 3.4.1 and historical per capita demands including the implementation of the required SBX7-7 as described in Section 5.6. The future supply projections are based on the reasonably available groundwater and imported water volumes as described in Section 6.2.9. Based on the analysis of ENCSD's current/projected water supply sources ENCSD has sufficient resources to serve existing and future demands.

Table 7-2 Retail: Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply totals (AF)	16,806	16,806	16,806	16,806	16,806
Demand totals (AF)	8,402	9,186	10,044	10,980	12,005
Difference	8,404	7,620	6,762	5,826	4,801

7.2.3.2 Water Service Reliability – Single Dry Year

Table 7-3 provides a summary of ENCSD's projected supply and demand through 2045 for a single dry year.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply totals (AF)	16,806	16,806	16,806	16,806	16,806
Demand totals (AF)	8,402	9,186	10,044	10,980	12,005
Difference	8,404	7,620	6,762	5,826	4,801

7.2.3.3 Water Service Reliability – Five Consecutive Dry Years

Table 7-4 provides a summary of ENCSD's projected supply and demand through 2045 for multiple dry years.

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2025	2030	2035	2040	2045
First year	Supply totals (AF)	16,806	16,806	16,806	16,806	16,806
	Demand totals (AF)	8,402	9,186	10,044	10,980	12,005
	Difference	8,404	7,620	6,762	5,826	4,801
Second year	Supply totals (AF)	16,806	16,806	16,806	16,806	16,806
	Demand totals (AF)	8,402	9,186	10,044	10,980	12,005
	Difference	8,404	7,620	6,762	5,826	4,801
Third year	Supply totals (AF)	16,806	16,806	16,806	16,806	16,806
	Demand totals (AF)	8,402	9,186	10,044	10,980	12,005
	Difference	8,404	7,620	6,762	5,826	4,801
Fourth year	Supply totals (AF)	16,806	16,806	16,806	16,806	16,806
	Demand totals (AF)	8,402	9,186	10,044	10,980	12,005
	Difference	8,404	7,620	6,762	5,826	4,801
Fifth year	Supply totals (AF)	16,806	16,806	16,806	16,806	16,806
	Demand totals (AF)	8,402	9,186	10,044	10,980	12,005
	Difference	8,404	7,620	6,762	5,826	4,801

7.2.4 Description of Management Tools and Options

Law

CWC 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.

ENCSD coordinates closely with the City of Bakersfield and Kern County with respect to regional water resource management. ENCSD has and will continue to participate in the following regional water resource planning efforts:

- KRGSA's Groundwater Sustainability Plan as described in Section 6.2.2.2.
- Member of the Urban Bakersfield Advisory Committee

7.3 Drought Risk Assessment

Law

CWC 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:

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.

(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

(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.

7.3.1 DRA Data, Methods, and Basis for Water Shortage Condition

The following information was used to support ENCSD's DRA to identify water production and consumption to its customers and determine restrictions to supply sources:

- Large Water System Annual Report to The Drinking Water Program
- Annual AWWA Water Loss Audit Worksheet
- KRGSA GSP
- Historical rainfall data from the NOAA Bakersfield Airport Station's precipitation gauge

7.3.2 DRA Individual Water Source Reliability

As identified in Section 7.2.2, ENCSD has never had a single year or multiple dry years in which it did not meet 100% of its demand, regardless of regional hydrology. Therefore, there is no basis in the hydrologic record for reducing supply reliability based upon single and/or multiple dry year conditions when imported water supply is available in addition to historical groundwater production. On this assumption, ENCSD's supply is presented as 100% reliable for single and multiple dry year periods as summarized in the following sections.

7.3.3 DRA Total Water Supply and Use Comparison

Sustainable management of its existing groundwater resources through water-use efficiency measures and use of KCWA-ID4 supplemental water will allow ENCSD to serve existing and future water demands during normal years, single dry years, or multiple dry years.

Table 7-5: Five Year Drought Risk Assessment Tables to address Water Code Section 10635(b)	
2021	**Total**
Gross Water Use	8,027
Total Supplies	8,027
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2022	**Total**
Gross Water Use [Use Worksheet]	8,761
Total Supplies [Supply Worksheet]	8,761
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2023	**Total**
Gross Water Use [Use Worksheet]	8,919
Total Supplies [Supply Worksheet]	8,919
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2024	**Total**
Gross Water Use [Use Worksheet]	9,079
Total Supplies [Supply Worksheet]	9,079
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0
2025	**Total**
Gross Water Use [Use Worksheet]	9,243
Total Supplies [Supply Worksheet]	9,243
Surplus/Shortfall w/o WSCP Action	0
Planned WSCP Actions (use reduction and supply augmentation)	
WSCP – supply augmentation benefit	0
WSCP – use reduction savings benefit	0
Revised Surplus/(shortfall)	0
Resulting % Use Reduction from WSCP action	0

CHAPTER 8 WATER SHORTAGE CONTINGENCY PLANNING

New Requirements

Per the Water Code the following new requirements are necessary for this chapter of the UWMP 2020 update.

- ❑ Key attributes of the water supply reliability analysis conducted pursuant to Water Code Section 10635. [Water Code Section 10632(a)(1)]
- ❑ 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. [Water Code Section 10632 (a)(3)(A)]
- ❑ Locally appropriate "shortage response actions" for each shortage level, with a corresponding estimate of the extent the action will address the gap between supplies and demands. [Water Code Section 10632 (a)(4)]
- ❑ Procedures for conducting an annual water supply and demand assessment with prescribed elements. Under Water Code Section 10632.1, urban water Suppliers are required to submit, by July 1 of each year, beginning in the year following adoption of the 2020 UWMP, an annual water shortage assessment report to the California Department of Water Resources (DWR). [Water Code Section 10632 (a)(2)]
- ❑ Communication protocols and procedures to inform customers, the public, and government entities of any current or predicted water shortages and associated response actions. [Water Code Section 10632 (a)(5)]
- ❑ Monitoring and reporting procedures to assure appropriate data is collected to monitor customer compliance and to respond to any state reporting requirements. [Water Code Section 10632(a)(9)]
- ❑ A reevaluation and improvement process to assess the functionality of its WSCP and to make appropriate adjustments as may be warranted. [Water Code Section 10632(a)(10)]

8.1 Water Supply Reliability Analysis

Law

CWC 10632(a)(1)
The analysis of water supply reliability conducted pursuant to Section 10635.

As described in Chapter 7 of this UWMP ENCSD's water supply has been determined to be reliable. More detail about this section can be found in ENCSD's WSCP in Appendix F.

8.2 Annual Water Supply and Demand Assessment Procedures

Law

CWC 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:

(i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.

(ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.

(iii) Existing infrastructure capabilities and plausible constraints.
(iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
(v) A description and quantification of each source of water supply.

CWC 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. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.

In accordance with CWC 10632 the District will conduct an annual water supply and demand assessment, or annual assessment by July 1st of each year. ENCSD will draft and prepare a written report that discusses the results of the annual water supply and demand assessment. Descriptions of the methodology, key data inputs, and a timeline for the annual assessment can be found in the WSCP.

8.2.1 Decision-Making Process

The written decision-making process can be found in the WSCP.

8.2.2 Data and Methodologies

The data and methodologies can be found in the WSCP.

8.3 Six Standard Water Shortage Levels

Law

CWC 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. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagraph (A) by developing and including a cross-reference relating its existing categories to the six standard water shortage levels.

The WSCP establishes six stages of drought response actions to be implemented in times of shortage, with increasing restrictions on water use in response to decreasing supplies. The WSCP includes both voluntary and mandatory rationing depending on the causes, severity, and anticipated duration of the water supply shortage. A summary of the response actions taken for each shortage level are described in **Table 8-1**, shown below.

Table 8-1: Water Shortage Contingency Plan Levels		
Shortage Level	**Percent Shortage Range**	**Shortage Response Actions** ***(Narrative Description)***
1	Up to 10%	Reserve production capability of 20% above the maximum daily demand representing "Normal" water supply conditions with "Voluntary" (always in place) compliance with water savings measures.
2	Up to 20%	Reserve production capability of 10% above the maximum daily demand representing "Slightly Restricted" water supply conditions with "Mandatory" compliance with water savings measures.
3	Up to 30%	No reserve production capability representing "Moderately Restricted" water supply conditions with "Mandatory" compliance with water savings measures.
4	Up to 40%	Less than 0% reserve production capability representing "Restricted" water supply conditions with "Mandatory" compliance with water savings measures.
5	Up to 50%	Less than 0% reserve production capability representing "Severely Restricted" water supply conditions with "Mandatory" compliance with water savings measures.
6	>50%	Less than 0% reserve production capability representing "Extremely Restricted" water supply conditions with "Mandatory" compliance with water savings measures.

Figure 8-1 provides a crosswalk that shows ENCSD's water shortage levels to those mandated by statute.

Figure 8-1: 2020 Retail Stages of WSCP						
Stages from 2015 UWMP			**Crosswalk**	**2020 WSCP Mandated Shortage Levels**		
Stage	**Percent Supply Reduction**	**Water Supply Condition**		**Stage**	**Percent Supply Reduction**	**Shortage Response Actions (Narrative Description)**
1 (Voluntary)	Up to 15%	Supply is 85% of normal or greater		1	0% to 10%	Voluntary water saving measures are actively encouraged.
				2	10% to 20%	Mandatory demand reduction and supply augmentation measures are enacted.
2 (Mandatory)	Up to 30%	Supply is 70-84% of normal		3	20% to 30%	Mandatory demand reduction and supply augmentation measure are enacted and will be enforced.
3 (Mandatory)	Up to 50%	Supply is 50 - 69% of normal		4	30% to 40%	Mandatory demand reduction and supply augmentation measure are enacted and will be enforced.
				5	40% to 50%	Mandatory demand reduction and supply augmentation measure are enacted and will be enforced.
				6	50% and above	Mandatory demand reduction and supply augmentation measure are enacted and will be enforced.

8.4 Shortage Response Actions

Law

CWC 10632
(a)(1) Stages of action to be undertaken by the urban water supplier in response to water supply shortages, including up to a 50 percent reduction in water supply, and an outline of specific water supply conditions which are applicable to each stage.

(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.

8.4.1 Demand Reduction

Table 8-2 summarizes the restrictions and prohibitions on end uses during each stage of water shortage response implemented by ENCSD in accordance with CWC §10632(a)(4)(B). The shortage response actions are aligned to the six water shortage levels with the goal of reducing the gap between supply and demand by the required amount per level.

Table 8-2: Demand Reduction Actions

Stage Level	Demand Reduction Actions	Estimated Extent of Reducing the Water Shortage Gap	Penalty, Charge, or Other Enforcement?
All Stages	Expand Public Information Campaign	Low	No
1	Public outreach for voluntary reduction in water use by 15%	Medium	No
2	Other - Prohibit use of potable water for washing hard surfaces	Medium	No
2	Landscape – Other landscape restriction or prohibition	High	No
3	CII - Restaurants may only serve water upon request	Low	No
3	CII - Lodging establishment must offer opt out of linen service	Low	No
3	Landscape - Other landscape restriction or prohibition	Medium	No
4	Water Features - Restrict water use for decorative water features, such as fountains	Low	No
4	Other- Only wash vehicles using a bucket and a handheld hose with positive shut off nozzle.	High	No
4	Other- Use recycled or non-potable water for construction purpose when available	High	No
4	Landscape - Other landscape restriction or prohibition	High	No
5	Landscape - Other landscape restriction or prohibition	High	No
5	Landscape - Limit landscape irrigation to specific days	Medium	No
6	Landscape - Limit landscape irrigation to specific times	High	No
6	CII - Other CII restriction or prohibition	Low	No
6	Other	Low	No

A complete description of operational and mandatory restrictions issued by the District can be found in the WSCP.

8.4.2 Supply Augmentation

Table 8-3 summarizes the restrictions and prohibitions on end users during each stage of water shortage responses implemented by ENCSD in accordance with CWC §10632(a)(4)(A).

Table 8-3: Supply Augmentation and Other Actions			
Shortage Level	**Consumption Reduction Methods by Water Supplier**	**How much is this going to reduce the shortage gap?**	**Penalty, Charge, or Other Enforcement?**
All Stages	Expand Public Information Campaign	Low	No
All Stage	Other – Demand Reduction Program	Medium	No
All Stages	Other – Use Prohibitions	Medium	No
All Stage	Other- Voluntary Rationing	Low	No
1 and 2	Other - Flow Restriction	High	No
3 and 4	Other – Restrict only for Priority Users	Medium	No
5	Other – Mandatory Rationing	High	No
6	Stored Emergency Supply	Low	No

A complete description of operational and mandatory restrictions issued by the District can be found in the WSCP.

8.4.3 Operational Changes

In the event of an extreme water shortage ENCSD may implement some or all of the following operational changes in accordance with CWC §10632(a)(4)(C) and §10632.5(a):

- ENCSD shall provide prompt notice to customer whenever ENCSD obtains information that indicates a leak may exist within the end-user's exclusive control. The customer must repair all leaks within twenty-four (24) hours of notification by ENCSD.
- Evaluate maintenance procedures and alter if needed to improve system efficiency.
- Evaluate infrastructure repairs, and complete if possible, to improve system efficiency.

8.4.4 Additional Mandatory Restrictions

ENCSD customers shall comply to the mandatory water shortage response actions listed in **Table 8-2** associated with a level 3 or higher water shortage event in accordance with §10632(a)(4)(D). In the event of a water shortage emergency or severe drought ENCSD may enact additional mandatory restrictions:

- Implement drought water rates.
- Restrict or prohibit the issuance of new water services.

8.4.5 Emergency Response Plan

In the event of an emergency the District will declare a water shortage and enacted the appropriate water savings actions until service is restored to pre-emergency conditions. A more detailed description of the District's emergency response plan and water shortage actions can be found in the WSCP.

8.4.6 Seismic Risk Assessment and Mitigation Plan

Law

> ***CWC 10632.5. (a)***
> *In addition to the requirements of paragraph (3) of subdivision (a) of Section 10632, beginning January 1, 2020, the plan shall include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various facilities of a water system and mitigate those vulnerabilities.*

(b) An urban water supplier shall update the seismic risk assessment and mitigation plan when updating its urban water management plan as required by Section 10621.

(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.

ENCSD participated in the development of the Kern Multi-Jurisdiction 2020 Multi-Jurisdiction Hazard Mitigation Plan, a summary of the seismic risk and mitigation plan can be found in the WSCP.

8.4.7 Shortage Response Action Effectiveness

The District will monitor and evaluate the effectiveness of the shortage response actions. In the event that the shortage response actions are not effective the District will have the power to amend the WSCP. A more detailed description of ENCSD's plan to monitor effectiveness can be found in the WSCP.

8.5 Communication Protocols

Law

CWC 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.

The District will inform customers, the public, and the necessary local, regional, and state government entities in regard to any current or predicted water shortages based on the results of the Annual Water Supply and Demand Assessment. The District will also notify all necessary entities of any shortage response actions mandated in response to the Annual Assessment. A detailed communication plan can be found in the WSCP.

8.6 Compliance and Enforcement

Law

CWC 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.

The District's enforcement policies can be found in the WSCP.

8.7 Legal Authorities

Law

CWC 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. [see below]
(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.

> ***CWC Division 1, Section 350***
> *Declaration of water shortage emergency condition. The governing body of a distributor of a public water supply, whether publicly or privately owned and including a mutual water company, shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.*

The District has the power to declare a water shortage. See the WSCP for the District's declaration of a water shortage.

8.8 Financial Consequences of WSCP

Law

> ***CWC 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 District does not anticipate any financial consequences as a result of the Water Shortage Contingency Plan.

8.9 Monitoring and Reporting

Law

> ***CWC 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.*

Monitoring and reporting procedures can be found in the WSCP.

8.10 WSCP Refinement Procedures

Law

> ***CWC 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.*

Refinement procedures can be found in the WSCP.

8.11 Special Water Feature Distinction

Law

> ***CWC 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.*

A description of special water feature distinction can be found in the WSCP.

8.12 Plan Adoption, Submittal and Availability

Law

> ***CWC 10632 (a)(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.*

The procedures that were used to adopt the WSCP are detailed in the WSCP.

CHAPTER 9 DEMAND MANAGEMENT MEASURES

New Requirements for 2020 Update

There are no new plan preparation requirements for the 2020 UWMP guidance.

9.1 Demand Management Measures for Wholesale Suppliers

ENCSD is not a wholesale agency and is not required by DWR to complete Section 9.1.

9.2 Existing Demand Management Measures for Retail Suppliers

Law

> ***CWC 10631***
> *(e)Provide a description of the supplier's water demand management measures. This description shall include all of the following:*
>
> *(1)(A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.*
> *(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 measures, if implemented*

The UWMP Act requires a discussion of Demand Management Measures (DMMs), including a description of each of the DMMs currently being implemented/scheduled for implementation, the schedule of implementation for all DMMs, and the methods, if any, ENCSD will use to evaluate the effectiveness of DMMs.

9.2.1 <u>Water Waste Prevention Ordinances</u>

The District established a "No-Waste" Resolution in 1992, which is actively enforced. An updated draft "No-Waste Resolution" has been prepared by the District. The District began enforcing this DMM in 1992 and plans to do so indefinitely. Since the passing of the resolution in 1992, no violations have been reported to the ENCSD Board of Directors (Board). ENCSD updated the No Waste Resolution in April 2015 by issuing Ordinance No. 2015-01 which set forth "Mandatory Water Conservation Requirements". The "Mandatory Water Conservation Requirements" included a call for voluntary water reduction, regulated water use for landscape irrigation and commercial use, and required the District to provide education on water conservation to its customers.

9.2.2 Metering

Law

> ***CWC 526***
> *(a) Notwithstanding any other provisions of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract... shall do both of the following:*
>
> *(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings... located within its service area.*
>
> ***CWC 527***
> *(a) An urban water supplier that is not subject to Section 526 shall do both the following:*
>
> *(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.*

ENCSD is fully metered for all customer sectors, including separate meters for single-family residential, commercial, large landscapes, and all institutional/governmental facilities.

Until the summer of 2003, ENCSD had a block rate structure, with a lifeline allotment of 12 billing units (100 cubic feet or 748 gallons) per connection per month for ¾" metered customers (larger baseline allotments were associated with larger meters). However, after the District revised their water rate structure there is no longer a baseline allotment. Instead, each customer pays a ready-to-serve charge and a unit charge for use by volume.

Commercial/industrial/institutional customers are required to have fire sprinkler systems. Separate meters are required on some fire sprinkler systems, with associated monthly service charges.

ENCSD will continue to install and read meters on all new services and will continue to conduct its meter calibration and replacement program for all existing meters. ENCSD plans to continue to bill by volume of use. The District believes that having all customers metered is an effective conservation method.

9.2.3 Conservation Pricing

Until the summer of 2003, ENCSD had a block rate structure. However, after the District revised their water rate structure, there is no longer a baseline allotment. Instead, each customer pays a readiness-to-serve charge and a volume of use charge. The District believes that having all customers metered is an effective conservation method because if customers must pay for all of the water, they use on a volume basis they tend to watch their usage carefully. Furthermore, with volume-based billing, the customers have information available to them regarding their monthly use and can more effectively plan to conserve. ENCSD will continue to install and read meters on all new services and will continue to conduct its meter calibration and replacement program. The District will continue to bill by volume of use.

9.2.4 Public Education and Outreach

ENCSD promotes water conservation and other resource efficiencies in coordination with the Kern County Water Agency and the Water Association of Kern County. ENCSD distributes public information through public service announcements (radio and television), bill inserts, brochures, and special events in conjunction with KCWA and WAKC. ENCSD water bills were redesigned in 2000 to show monthly use for the last billing period compared to the prior eleven months. ENCSD will continue to provide public information services and materials to remind their customers as well as the public about water resource issues on an ongoing basis. It should be noted that the District looks for opportunities to replace existing landscape with drought tolerant plants during routine maintenance and demonstrates drought tolerant planting options at the District headquarters. Information on drought tolerant plants is available at the District office.

ENCSD works with the Kern County Water Agency, the Water Association of Kern County, and school districts to promote water conservation and other resource efficiencies at school facilities and to educate students about these issues.

A range of grade levels are provided with educational materials, which include the following: State and County water system maps, posters, workbooks, interactive computer software, and videos. The District through KCWA has hosted tours of water facilities, sponsored teachers' Project Water Education for Teachers (WET) training, sponsor science fairs, and sponsor water conservation contests. ENCSD will continue to implement this DMM.

9.2.5 Programs to Assess and Manage Distribution System Real Loss

Water Survey Programs for Single-Family and Multi-Family Residential Customers

ENCSD offers free residential water use surveys to single-family and multi-family customers when requested by the customer. ENCSD has specifically focused on any customer who has experienced elevated water usage. It is ENCSD's goal to complete surveys for all customers who make such requests. Single-family surveys take about one hour to complete and are conducted by ENCSD staff.

During the landscape portion of the survey, District personnel show the customer the location of the water meter and how to read it, measure the landscaped areas, test the sprinkler system for irrigation efficiency and distribution uniformity, teach the customer how to set the irrigation controller, develop a three-season irrigation schedule (based on soil type, evapotranspiration, and irrigation system), recommend sprinkler system repairs or improvements, and provide brochures on water efficient landscaping, design, and plants. This DMM was first implemented in 2000 and is expected to continue indefinitely. Records of savings are not kept by the District as it is extremely difficult to determine if the recommendations of the survey are being implemented by the customer.

System Water Audits, Leak Detection, and Repair

ENCSD has conducted water audits and leak detection and repair for many years. Since ENCSD is located in an earthquake zone, it has permanently incorporated the system water audit, leak detection, and meter calibration programs (for both production and customer meters) into its utility operations. ENCSD recognizes that as meters age they may under-register. As a result, the District developed and implemented a meter replacement program that replaces approximately 400 meters each year. ENCSD has permanently incorporated this DMM into its operations and maintenance procedures. ENCSD personnel will continue to survey mains and service lines on an on-going basis. The meter replacement program will also continue at a rate of approximately 400 meters per year. Staff uses production and consumption data records to monitor unaccounted for water losses.

9.2.6 Water Conservation Program Coordination and Staffing Support

Water Conservation Coordinator

The General Manager, in conjunction with the Board of Directors and committees of the Board dealing with conservation and education, acts in the role of Water Conservation Coordinator for the District. The General Manager's job description includes scheduling of the District's surface water supplies and determination of appropriate groundwater pumping and therefore the General Manager is best suited to help lead conservation efforts. The District intends to implement this DMM indefinitely. The Water Conservation Coordinator monitors wasted water within the District and notifies customers of apparent wasteful activities.

9.2.7 Other Demand Management Measures

Law

> ***CWC 10631***
> *(e) Provide a description of the supplier's water demand management measures. This description shall include all of the following:*
>
> *(1)(A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.*
>
> *(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 significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.*

Residential Plumbing Retrofit

Subject to available funding, ENCSD participates in the distribution of toilet tank leak detection tablets. Conservation savings have not been calculated by ENCSD as it is extremely difficult for the District to identify if the use of the tablets has resulted in plumbing retrofits. ENCSD will continue to implement this DMM indefinitely.

High-Efficiency Washing Machine Rebate Program

The District monitors available rebate programs for high efficiency washing machines and informs their customers of the availability of rebates through public outreach (i.e., mailing, public speaking, etc.). ENCSD will continue to monitor available rebate programs with both local and national vendors. The District also includes information throughout the year in the form of "Smart Tips" on customer billing statements reminding customers to look for high-efficiency products when shopping for appliances such as washing machines. The District will also continue to incorporate available information into the water conservation section of the website. It is very difficult for the District to determine which customers have purchased high-efficiency appliances.

Residential Ultra-low-flush Toilet Replacement Program

ENCSD monitors available rebate programs associated with Ultra-low-flush toilets. The District plans includes information throughout the year in the form of "Smart Tips" on customer billing statements reminding customers to look for high-efficiency products when shopping for appliances such as toilets. The District will also continue to incorporate available information into the water conservation section of the website.

9.3 Reporting Implementation

Law

> *CWC 10631*
> *(e) Provide a description of the supplier's water demand management measures. This description shall include all of the following:*
>
> *(1)(A) … a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.*

9.3.1 Implementation over the Past Five Years

Law

> *CWC 10631*
> *(e) Provide a description of the supplier's water demand management measures. This description shall include all of the following:*
>
> *(1)(A) … a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.*

ENCSD has implemented the required DMMs per CWC 10631 to achieve its water use targets pursuant to Section 10608.20 and described in Chapters 5 and 8 in the past 5 years. ENCSD continues to implement water conservation and educational programs as well as system water audits, leak detection, and system repairs.

9.3.2 Implementation to Achieve Water Use Targets

Law

> ***CWC 10631***
> *(f)(1)(A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.*

ENCSD has implemented the required DMM per CWC 10631 to achieve its water use targets pursuant to Section 10608.20. Baseline and target 2020 GPCD are described in Chapter 5 of the UWMP. ENCSD adopted its WSCP (see Chapter 8) at its June 2021 Board meeting which outlines measures ENCSD will take to achieve water use targets.

9.4 Water Use Objectives (Future Requirements)

The Water Code requires suppliers to develop new water use objectives by 2023 that align with the supplier's conservation management actions. ENCSD describes its water use objectives during water shortages in its WSCP and will further develop objectives by 2023.

CHAPTER 10 PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

New Requirements for 2020 Update

- ☐ Since 2015, the public processes for completing the UWMP have not been revised. However, the Water Shortage Contingency Plan is a new component of the 2020 UWMP that can be amended separately from the UWMP (see Chapter 8)

10.1 Inclusion of all 2020 Data

This 2020 UWMP update includes water use and planning data for the entire 2020 calendar year.

10.2 Notice of Public Hearing

10.2.1 Notice to Cities and Counties

Law

> ***CWC 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 waters supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.*
>
> ***CWC 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…*

10.2.1.1 60 Day Notification

ENCSD notified these agencies at least sixty (60) days prior to the public hearing of the preparation of the 2020 Plan and invited them to participate in the development of the Plan. A copy of the notification letters sent to these agencies is provided in Appendix G.

10.2.1.2 Notice of Public Hearing

The Notice of the public hearing, held June 28, 2021, at the ENCSD office, was sent to the City of Bakersfield and County of Kern on May 17, 2021. A copy of the letters from ENCSD to the City and County are included in Appendix G of this UWMP.

10.2.1.3 Submittal Tables

Table 10-1 summarizes the agencies which were provided notifications by the ENCSD.

Table 10-1 Retail: Notification to Cities and Counties		
City Name	**60 Day Notice**	**Notice of Public Hearing**
City of Bakersfield	☑	☑
County Name	**60 Day Notice**	**Notice of Public Hearing**
Kern County	☑	☑

10.2.2 Notice to the Public

Law

> ***CWC 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…*
>
> ***Government Code 6066***
> *Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.*

The public hearing was noticed in the local newspaper as prescribed in Government Code 6066. This notice included time and place of hearing, as well as the location where the UWMP and WSCP is available for public inspection. A copy of the newspaper notice is included in Appendix H.

10.3 Public Hearing and Adoption

Law

> ***CWC 10642***
> *…Prior to adopting either, the [plan or water shortage contingency plan], the urban water supplier shall make both the plan and the water shortage contingency plan available for public inspection and shall hold a public hearing or hearings thereon.*
>
> ***CWC 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.*

10.3.1 Public Hearing

Prior to adopting the 2020 UWMP and WSCP, ENCSD held a public hearing on June 28, 2021, which included input from the community regarding the ENCSD draft 2020 UWMP and WSCP. As part of the public hearing, ENCSD provided information on determination of its water use targets and action plan in case of severe water shortage conditions.

10.3.2 Adoption

Law

> ***CWC 10642***
> *…After the hearing, the plan shall be adopted as prepared or as modified after the hearing.*

The 2020 UWMP and WSCP was adopted on June 28, 2021, during a regularly scheduled board meeting. A copy of the resulting adoption and meeting minutes is included in Appendix I of this UWMP.

10.4 Plan Submittal

Law

> ***CWC 10621***
> *(e) Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021…*
>
> ***CWC 10644***
> *(a)(1) An urban water supplier shall submit to the department, the California State Library, and any city or county within which the supplier provides water supplies a copy of its plan no later than 30 days after adoption.*
>
> *(a)(2) The plan, or amendments to the plan, submitted to the department… shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.*
>
> ***CWC 10635***
> *(c) The urban water supplier shall provide that portion of its urban water management plan prepared pursuant to this article to any city or county within which it provides water supplies no later than 60 days after the submission of its urban water management plan.*

10.4.1 Submitting a UWMP and Water Shortage Contingency Plan to DWR

Within 30 days of adoption of the 2020 UWMP by Board and by July 1, 2021, the District will submit the adopted 2020 UWMP to DWR, as required by CWC 10621 and 10644. The 2020 UWMP will be submitted through DWR's "Water Use Efficiency (WUE) Data Online Submittal Tool" website.

DWR previously provided a checklist to make determine if an Urban Water Management Plan has addressed the requirements of the California Water Code. The District has completed the DWR checklist by indicating where the required CWC elements can be found within the District's 2020 UWMP (See Appendix J).

10.4.2 Electronic Data Submittal

Law

> ***CWC 10644***
> *(a)(2) The plan, or amendments to the plan, submitted to the department… shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.*

Within 30 days of adoption of the 2020 Plan, ENCSD will also submit all data tables associated with the 2020 Plan through DWR's "Water Use Efficiency (WUE) Data Online Submittal Tool" website.

10.4.3 Submitting a UWMP, including WSCP, to the California State Library

Within 30 days of adoption of the 2020 UWMP by the Board, a copy (CD or hardcopy) of the 2020 Plan will be submitted to the State of California Library. A copy of the letter to the State Library will be maintained in the District's file. The 2020 Plan will be mailed to the following address if sent by regular mail:

California State Library
Government Publications Section
P.O. Box 942837
Sacramento, CA 94237-0001
Attention: Coordinator, Urban Water Management Plans

The 2020 Plan will be mailed to the following address if sent by courier or overnight carrier:

California State Library
Government Publications Section
914 Capitol Mall
Sacramento, CA 95814

10.4.4 Submitting a UWMP to Cities and Counties

Within 30 days of adoption of the 2020 Plan by the Board, a copy of the 2020 UWMP will be submitted to the County of Kern Registrar/ Recorders, the City of Bakersfield Registrar/ Recorders office, and ENCSD office. A copy of the letter to the County of Kern and City of Bakersfield will be maintained in the District's file.

10.5 Public Availability

Law

CWC 10645
(a) Not later than 30 days after filing a copy of its plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.
(b) Not later than 30 days after filing a copy of its water shortage contingency plan with the department, the urban water supplier and the department shall make the plan available for public review during normal business hours.

The adopted 2020 UWMP is available on ENCSD's website at **www.eastnilescsd.org** and at ENCSD's office at 1417 Vale Street, Bakersfield, CA between the hours of 8:30 AM and 4 PM Monday through Friday.

10.6 Notification to Public Utilities Commission

Law

CWC 10621(c)
An urban water supplier regulated by the Public Utilities Commission shall include its most recent plan and water shortage contingency plan as part of the supplier's general rate case filings.

The section is not applicable to ENCSD.

10.7 Amending an Adopted UWMP or Water Shortage Contingency Plan

Law

CWC 10621
(d) The amendments to, or changes in, the plan shall be adopted and filed in the manner set forth in Article 3 (commencing with Section 10640).

(a)(1) Copies of amendments or changes to the plans shall be submitted to the department, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

10.7.1 Amending a UWMP

If ENCSD amends the adopted 2020 UWMP, the amended UWMP will undergo adoption by the ENCSD's governing board. Within 30 days of adoption, the amended UWMP will then be submitted to DWR, the State of California Library, the County of Kern and City of Bakersfield Recorders office, and the ENCSD office.

10.7.2 Amending a Water Shortage Contingency Plan

If ENCSD amends the adopted 2020 WSCP, the amended WSCP will undergo adoption by the ENCSD's governing board. Within 30 days of adoption, the amended WSCP will then be submitted to DWR, the State of California Library, the County of Kern and City of Bakersfield/ Recorders office, and the ENCSD office.