INDIAN WELLS VALLEY WATER DISTRICT
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INDIAN WELLS VALLEY WATER DISTRICT
FINAL 2020 URBAN WATER MANAGEMENT PLAN

AUGUST 2021

Prepared by

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For Electronic Submission To

California Department of Water Resources
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SIGNATURE _____

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INDIAN WELLS VALLEY WATER DISTRICT
Ridgecrest, California

2020 URBAN WATER MANAGEMENT PLAN
CONTACT SHEET

Date plan submitted to the Department of Water Resources:	**August 31, 2021**
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The Water Supplier is a:	**Water District**
The Water Supplier is a:	**Retailer**
Utility services provided by the Water Supplier include:	**Domestic water supply**
Is this Agency a Bureau of Reclamation Contractor?	**No**
Is this Agency a State Water Project Contractor?	**No**

SECTION 1

INTRODUCTION AND LAY DESCRIPTION

SECTION 1
INTRODUCTION AND LAY DESCRIPTION

Water Code

10630.5. Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.

A. INTRODUCTION

Urban Water Management Plans (UWMPs) are prepared by urban water suppliers every five years in accordance with the requirements set forth in California Water Code (CWC) Sections 10610-10656 and 10608. These plans support the suppliers' long-term resource planning to ensure that adequate water supplies are available to meet existing and future water needs. Copies of the relevant sections of the CWC are included in **Appendix A** herein.

B. LAY DESCRIPTION

1. Water Availability

Water provided to customers by the Indian Wells Valley Water District (IWVWD, or the District) is extracted (pumped) from the Indian Wells Valley Groundwater Basin (IWVGB), an aquifer underlying the Indian Wells Valley, by the District's ten (10) groundwater wells. Water is then pumped from the wells through transmission pipelines to eleven water storage reservoirs with a total storage capacity of 17 million gallons. From there, water is delivered by gravity through distribution pipelines to the District's customers.

This UWMP refers to quantities of water in units of acre-feet (AF). One AF is equal to approximately 326,000 gallons, or enough water to cover an acre of land one foot deep.

The District has facilities capable of providing up to 20,000 AF of water per year (AF/Yr); however, the District only extracts and uses the water needed to meet customer demands

and incidental losses. For example, in calendar year 2020, the District extracted approximately 6,311 AF of water.

2. Future Water Needs

Based on past uses and projected future population increases within the District's service area, it is expected that increasing quantities of water will be needed to meet demands each year.

The District projects that it will need approximately 6,930 AF of water in year 2025, and quantities needed are expected to increase each year, reaching approximately 8,050 AF by 2045.

3. Challenges

The IWVGB, the underlying aquifer from which the District obtains its water supply, is in a condition of overdraft, and has been for many years. Overdraft means that more water is extracted than is naturally recharged, from sources such as rainfall. The water within the Basin is not unlimited, and water must be managed in a sustainable manner in order to preserve valuable groundwater resources for future water supply needs.

4. Strategies for Meeting Water Needs

In order to meet its water needs for the future, the District continuously implements conservation measures, encourages customers to conserve water where possible, and participates in local efforts to support the sustainability of the IWVGB. Conservation measures help a great deal, but additional action is needed to reverse conditions of overdraft in the Basin.

The District and other local entities have formed the Indian Wells Valley Groundwater Authority (IWVGA). The IWVGA has proposed a number of projects and management actions to achieve basin sustainability. Examples of these projects and management actions include increasing the use of recycled water for approved uses (such as irrigation or

groundwater replenishment), purchasing water from sources outside the Indian Wells Valley, and implementing basin-wide conservation measures.

The projects and management actions are described in additional detail in the document, *Groundwater Sustainability Plan for the Indian Wells Valley Groundwater Basin*, dated January 2020 (the GSP). The GSP has been submitted to the State's Department of Water Resources for review and approval. A copy of the GSP (minus appendices, due to length) is included in **Appendix E** herein, and a copy of the complete GSP, including appendices, is available online at https://sgma.water.ca.gov/portal/gsp/preview/59.

SECTION 2

PLAN PREPARATION

SECTION 2
PLAN PREPARATION

A. BASIS FOR PREPARING AN URBAN WATER MANAGEMENT PLAN

> *Water Code*
>
> **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…
>
> **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.

Indian Wells Valley Water District (IWVWD or the District) has prepared this 2020 Urban Water Management Plan in accordance with the Urban Water Management Planning Act (UWMP Act), as set forth in Part 2.6 of Division 6 of the CWC, and the Water Conservation Act of 2009, as set forth in Part 2.55 of Division 6 of the CWC. The District serves greater than 3,000 active water service connections and supplies more than 3,000 acre-feet (AF) of water per year, and therefore meets the definition of an urban water supplier pursuant to CWC Section 10617, cited above. As an urban water supplier, IWVWD is required to prepare and adopt an UWMP every five years and to submit same to the California Department of Water Resources (DWR). Copies of the applicable sections of the CWC are included in **Appendix A** herein.

The District operates a public water system (PWS), as defined in California Health and Safety Code Section 116275(h), which defines a PWS as "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." PWSs are regulated by the State Water Resources Control Board, Division of Drinking Water. An urban water supplier may operate one or more PWS. IWVWD operates a single PWS.

B. COORDINATION

Water Code

10620. (a) Every urban water supplier shall prepare and adopt an urban water management plan in the manner set forth in Article 3 (commencing with Section 10640).

(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.

(e) The urban water supplier may prepare the plan with its own staff, by contract, or in cooperation with other governmental agencies.

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 form the five years preceding each update.

(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 urban water supplier may consult with, and obtain comments from, any city or county that receives notice pursuant to this subdivision.

IWVWD has actively encouraged community participation in its urban water management planning efforts since its first UWMP was developed in 1985. The District has adopted an updated version of its UWMP every five years since, which reflected then-current conditions within the District's boundaries, including projected water supplies and demands.

This 2020 UWMP supersedes the District's 2015 UWMP and fulfills the requirements of the Urban Water Management Planning Act and the Water Conservation Act of 2009, also known as SB X7-7, as amended. Copies of these sections of the CWC are included in **Appendix A** herein.

On June 9, 2021, the District notified the City of Ridgecrest, County of Kern, and County of San Bernardino about the District's review of its UWMP and its Water Shortage Contingency Plan (WSCP) and its intent to revise said documents in accordance with all applicable requirements. These notices are also referred to as 60-day notices, copies of which are included in **Appendix B** herein.

Beginning with the 2020 UWMP, a WSCP is required to be included in the UWMP. The WSCP is a separate, stand-alone document that is adopted separately from the UWMP; however, it is included within the UWMP. The District's 2020 WSCP is included in **Appendix F** herein.

On July 22, 2021, draft copies of the District's 2020 WSCP and 2020 UWMP were made available for public review at the District's office, located at 500 West Ridgecrest Boulevard, Ridgecrest, California 93556, during regular business hours, and on the District's website at www.iwvwd.com/public-documents/public-reports/. Notice of the Draft 2020 UWMP and 2020 WSCP availability and upcoming public hearing was sent on July 23, 2021 to City of Ridgecrest, County of Kern, and County of San Bernardino, via both mail and email. Public notice of the public hearing was published in The Daily Independent on July 24, 2021 and July 31, 2021. Copies of the notices are included in **Appendix B** herein.

On August 9, 2021, the District held public hearings to receive comments on, and consider adoption of, its 2020 WSCP and 2020 UWMP. All comments received prior to and during the public hearings were taken into consideration prior to adoption of the District's 2020 WSCP and 2020 UWMP. Following the public hearings, the District's Board of Directors adopted the WSCP and the UWMP.

Table 1 summarizes the efforts that IWVWD has taken to include various agencies and citizens in its UWMP planning process.

TABLE 1
COORDINATION WITH APPROPRIATE AGENCIES

Entities	Participated in UWMP Development	Commented on Draft	Attended Public Meetings	Contacted for Assistance	Sent 60-Day Notice	Sent Notice of Public Hearing	Sent Notice of Final 2020 UWMP Availability
City of Ridgecrest				✓	✓	✓	✓
Kern Council of Governments	✓			✓			
Kern County Planning Department					✓	✓	✓
San Bernardino County Planning Department					✓	✓	✓
General Public	✓		✓		✓(1)	✓(1)	✓(1)

(1) Available for public review at the District's office and posted on the District's website at www.iwvwd.com/public-documents/public-reports/.

C. PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

Water Code

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 both the plan and the water shortage contingency plan. Prior to adopting either, 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. Prior to any of these hearings, notice of the time and place of the hearing shall be published within the jurisdiction of the publicly owned water supplier pursuant to Section 6066 of the Government Code. The urban water supplier shall provide notice of the time and place of a hearing to any city or county within which the supplier provides water supplies. Notices by a local public agency pursuant to this section shall be provided pursuant to Chapter 17.5 (commending with Section 7290) of Division 7 of Title 1 of the Government Code. After the hearing or hearings, the plan or water shortage contingency plan shall be adopted as prepared or as modified after the hearing or hearings.

10643. An urban water supplier shall implement its plan adopted pursuant to this chapter in accordance with the schedule set forth in its plan.

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…

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 District prepared its WSCP and this UWMP in 2021. The WSCP and this UWMP were adopted by the District's Board of Directors following a public hearing on August 9, 2021 and submitted to the DWR and the California State Library within 30 days of Board approval. Copies of the signed Ordinance adopting the WSCP and Resolution adopting the UWMP are included in **Appendix C** herein. Copies of documentation of submittal of the UWMP to DWR and the California State Library are included in **Appendix D** herein.

Within 30 days of adoption by the Board, notices were provided to the City of Ridgecrest, County of Kern, and County of San Bernardino advising where to obtain digital copies of the adopted WSCP and UWMP. The final, adopted 2020 WSCP and the final adopted 2020 UWMP, including any adopted amendments, are available for public review during normal business hours at the District's office located at 500 West Ridgecrest Boulevard, Ridgecrest CA 93556 and are also available online at www.iwvwd.com/public-documents/public-reports/.

In addition to the UWMP Act and the Water Conservation Act of 2009, the District, in preparing this UWMP, referenced guidance available from DWR, including that set forth in the document titled *Urban Water Management Plan Guidebook 2020*, prepared by DWR, dated March 2021, and referred to herein as the DWR Guidebook.

This 2020 UWMP will be implemented as set forth herein. Since UWMPs are due for revision every five years, this UWMP is expected to be in effect until mid-2026, at which time the District's 2025 UWMP will be developed and adopted.

D. WATER MANAGEMENT TOOLS AND OPTIONS

Water Code

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.

To facilitate effective and efficient management of water supplies, and in compliance with the Urban Water Management Planning Act and the Water Conservation Act of 2009 (copies of applicable sections are included in **Appendix A**), the District has prepared this 2020 UWMP. This UWMP includes background information regarding groundwater supply and historic water use within the District's service area, as well as water management tools and options that will enable the District and area residents to maximize efficient use of the limited available water resources, reduce per capita water use, and decrease the potential future need to import water from other regions. Refer also to **Sections 4 and 9** herein. The District will implement its UWMP as described herein.

A checklist citing the location of UWMP content required by the CWC is included in **Appendix G** herein for DWR's use in its review of this 2020 UWMP. Additionally, the tables included herein are specific to this 2020 UWMP, and the standardized tables required by DWR are included in **Appendix H** herein.

SECTION 3

SYSTEM DESCRIPTION

SECTION 3
SYSTEM DESCRIPTION

Water Code

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:
(a) Describe the service area of the supplier, including current and projected population, climate, and other demographic factors affecting the supplier's water management planning. The projected population estimates shall be based upon data from the state, regional, or local service agency population projections within the service area of the urban water supplier and shall be in five-year increments to 20 years or as far as data is available. 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.

A. DISTRICT FORMATION AND PURPOSE

IWVWD was organized in 1955 in accordance with the State of California County Water District Law (CWC Section 30000 *et seq.*), with the powers and authorities set forth in said code, for the purpose of providing domestic water supplies within its service area.

The District is empowered to manage water resources and to construct, operate, maintain, repair, and replace water system facilities as needed to provide water service in compliance with applicable standards and regulations. The District routinely constructs new facilities, maintains them, and replaces them as necessary to maintain adequate, reliable, and safe water service to its customers.

B. SERVICE AREA DESCRIPTION

The District is situated in the Indian Wells Valley, which lies in the northern portion of the Mojave Desert, southeasterly of the Sierra Nevada, and southerly of the Owens Valley. As the primary purveyor of public water supplies in the Ridgecrest area of Kern and San Bernardino Counties (see **Figure 1**, Vicinity Map, and **Figure 2**, Service Area Boundary), the District carries a significant portion of the responsibility for managing the area's limited water resources.

The District's service area encompasses approximately 38 square miles of the 360 square-mile floor of the Indian Wells Valley, as depicted on **Figure 2**. Ground surface elevations within the District's service area range from approximately 2,250 feet above sea level to approximately 3,200 feet above sea level.

A majority of the District's service area is in Kern County, in areas within and surrounding the City of Ridgecrest (the City). The City encompasses an area of approximately 21.4 square miles, approximately 9 square miles of which lies within the China Lake Naval Air Weapons Station (China Lake NAWS), which is under the jurisdiction of the Navy. The District does not provide water to the Navy. The predominant land use within the City of Ridgecrest is residential, which makes up approximately 39% of the City's land uses. Based on the City's most recent general plan, adopted December 2009, the land use within the City's planning area, excluding federal lands, consists of 39% residential, 3.5% commercial, 1.0% industrial, 52.5% open space, and 3.9% other (including City and county facilities, utilities, and other institutional uses).

A relatively small portion of the District's service area is within an unincorporated area of San Bernardino County, adjoining the eastern boundary of the City. Land use within the San Bernardino County portion of the District's service area consists of residential use designated as "Rural Living", allowing for a maximum of one dwelling unit per 2.5-acre lot.

C. SERVICE AREA POPULATION

The District currently serves a population of approximately 35,800 people through approximately 12,600 active service connections. The population estimates (for years 2015 and 2020) and the population projections (for years 2035 and 2042) for the portion of the District's service area within Kern County were provided by the Kern Council of Governments (KernCOG) and are based on data from the U.S Census Bureau, the California Department of Finance, and the California Employment Development Department. The population projections for years 2025, 2030, 2040, and 2045 were estimated based on the data and projections provided by KernCOG for the Kern County portion of the District's service area. A copy of the data and projections provided by KernCOG is included in **Appendix R** herein.

Population estimates and projections for the portion of the District's service area within San Bernardino County are based on the number of active District connections in that area (83 in 2015 and 95 in 2020), as well as the average number of persons per household (2.57 in 2015 and 2.61 in 2020) for the City of Ridgecrest, obtained from U.S. Census Bureau data. The San Bernardino County portion of the service area was assumed to grow at the same rates as the Kern County portion of the service area.

Estimated past, current, and projected populations within the District's service area are set forth in **Table 2**. As shown therein, the District's service area population is projected to increase from approximately 35,800 currently to approximately 42,826 by 2045.

TABLE 2
ESTIMATED POPULATION – PAST, CURRENT, AND PROJECTED

Service Area	2015	2020	2025	2030	2035	2040	2045
Kern County	33,256	35,580	36,633	37,686	38,739	40,672	42,606
San Bernardino County	220	220	220	220	220	220	220
Total Service Area Population	**33,476**	**35,800**	**36,853**	**37,906**	**38,959**	**40,892**	**42,826**

D. SERVICE AREA CLIMATE

Temperatures in the District's service area often exceed 100 degrees Fahrenheit (°F) during summer months, with an annual average daily temperature of approximately 80°F. Annual rainfall averages less than 5 inches; most rainfall occurs between November and March, while some thundershowers occur during the summer monsoons.

The maximum and minimum monthly average temperatures as well as monthly average evapotranspiration rates (ETo) within the District's service area are shown in **Table 3**.

TABLE 3
CLIMATE AND EVAPOTRANSPIRATION

Month	Monthly Average Reference ETo (inches)	Average Rainfall (inches)	Average Maximum Temperature (°F)	Average Minimum Temperature (°F)
January	1.86	0.88.	61.3	30.6
February	2.80	0.79	63.7	34.6
March	4.65	0.78	74.4	40.1
April	6.00	0.13	76.1	45.6
May	8.06	0.11	85.9	52.8
June	9.00	0.02	98.2	63.1
July	9.92	0.09	101.8	68.4
August	8.68	0.31	101.9	67.4
September	6.60	0.24	94.3	59.4
October	4.34	0.18	81.2	48.3
November	2.70	0.27	64.3	33.8
December	1.86	0.47	58.5	26.1
Annual	66.47	4.27	80.1	47.5

Note: Rainfall and temperature data were obtained from the China Lake NAF, California Station (041733), as provided on the National Weather Service Western Regional Climate Center website at http://www.wrcc.dri.edu for the period of record February 1, 1944 to June 10, 2016. Evapotranspiration rate (ETo) data are based on the monthly average reference ETo for Zone 17, as provided by the California Irrigation Management Information System (CIMIS) on their website, http://wwwcimis.water.ca.gov. Copies of the downloaded data are provided in **Appendix I**.

The Indian Wells Valley watershed consists of approximately 860 square miles; nearly 500 square miles in the mountains and hills and approximately 360 square miles on the valley floor. Average precipitation within the watershed ranges from approximately 2 to 5 inches per year, with the surrounding mountains receiving varying quantities of rainfall up to 10 inches per year. The Indian Wells Valley is bounded by the Sierra Nevada on the west, the Coso Range on the north, the Argus Range on the east, and the El Paso Mountains on the south.

E. OTHER SOCIAL, ECONOMIC, AND DEMOGRAPHIC FACTORS

The District's service area is located along the southerly border of China Lake Naval Air Weapons Station (referred to herein as China Lake NAWS or the Navy). As the largest single employer in the area, the number of personnel employed by the Navy has a substantial influence on the number of people residing within the District's service area. Diminished employment by the Navy largely resulted in a decrease in population within the District's service area during the period 1990 through 2000, and augmented employment by the Navy later resulted in an increase in population in the District's service area during the period 2000-2010. Since 2010, population within the District's service area has increased an average of approximately 1.5% per year, and is projected to increase at a rate of approximately 1% per year through 2045. Refer to **Section 5.B** herein for a summary of lower-income households within the District's service area.

SECTION 4

WATER SUPPLY CHARACTERIZATION

SECTION 4
WATER SUPPLY CHARACTERIZATION

A. WATER SUPPLY SOURCE

Water Code

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:
(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:
(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 water supplier's service area.
(B) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater. …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).

1. Indian Wells Valley Groundwater Basin

The sole source of potable water supply in the Indian Wells Valley is groundwater. The groundwater body from which the District and all other water producers in the valley extract groundwater is the Indian Wells Valley Groundwater Basin (also referred to herein as the IWVGB or the Basin). The District does not purchase or otherwise obtain water from a wholesale water supplier, and recycled water is not currently available to the District. The District expects that groundwater extracted from the IWVGB will continue to be its primary source of water through the year 2045, and possibly beyond.

The IWVGB underlies a surface area of approximately 382,000 acres (approximately 600 square miles) within portions of Kern, Inyo, and San Bernardino Counties. The Sierra Nevada bound the Basin on the west, the Coso Range on the north, the Argus Range on the east, and the El Paso Mountains on the south. Surface water flows from the surrounding mountains drain to China Lake, a large playa (dry lake) located in the central north-east part of the Basin.

Most reports specific to the Basin identify four primary geographic areas of groundwater supply within the Basin:

- The Ridgecrest Area, which generally lies within the City of Ridgecrest;
- The Intermediate Area, which lies between the City of Ridgecrest and the community of Inyokern;
- The Southwest Area, which lies to the southwest of Ridgecrest and south of Inyokern; and
- The Northwest Area, which lies to the northwest of Ridgecrest and north of Inyokern.

The District obtains most of its water supply from the Intermediate and Southwest Areas.

2. Sustainable Groundwater Management Act

On September 16, 2014, Governor Brown signed three bills (AB 1739, Dickinson; SB 1168 and SB 1319, Pavley) that create a framework for sustainable local groundwater management. This legislation, referred to as the Sustainable Groundwater Management Act, or SGMA, empowers local agencies to manage groundwater basins in a sustainable manner over a long-term horizon and to tailor groundwater sustainability plans to their regional economic and environmental needs. SGMA provides five to seven years (depending on the groundwater basin) for locals to form a Groundwater Sustainability Agency (GSA) and to create a groundwater sustainability plan. In medium and high priority basins (including the IWVGB) GSAs must be formed by June 30, 2017, and have a groundwater sustainability plan in place by January 31, 2020.

In accordance with SGMA, DWR developed the California Statewide Groundwater Elevation Monitoring (CASGEM) program to track seasonal and long-term trends in groundwater elevations in California's groundwater basins. Through its CASGEM program, DWR ranked the priority of each groundwater basin in California as either very low, low, medium, or high.

In addition, DWR, as required by SGMA, identified the basins and subbasins that are in conditions of critical overdraft. Twenty-one basins and subbasins, including the IWVGB, were identified as critically-overdrafted basins. In its *California's Groundwater - Interim Update 2016*, DWR identified the IWVGB as a critically overdrafted basin of medium priority. The IWVGB is now designated as a critically overdrafted basin of high priority, as set forth in the document *Sustainable Groundwater Management Act 2018 Basin Prioritization: Process and Results*, published by DWR in January 2019.

As required by SGMA, basins that are identified as critically overdrafted and are also designated as either high or medium priority must be managed under a groundwater sustainability plan by January 21, 2020. All other high and medium priority basins must be managed under a groundwater sustainability plan by January 31, 2022. The Basin's GSA and groundwater sustainability plan are described in **Section 4.A(3)** below.

3. Groundwater Sustainability Plan

On July 15, 2016, Kern County, Inyo County, San Bernardino County, City of Ridgecrest, and IWVWD entered into a joint exercise of powers agreement to form the IWVGA. On December 8, 2016, the IWVGA Board of Directors adopted Resolution No. 02-16, establishing the IWVGA as the exclusive GSA for the entirety of the IWVGB.

The IWVGA, as the sole GSA for the IWVGB, is responsible for complying with SGMA requirements, including the preparation and implementation of the GSP. The *Groundwater Sustainability Plan for the Indian Wells Valley Groundwater Basin* (GSP; Stetson 2020), was adopted by the IWVGA Board of Directors on January 16, 2020 and was submitted to DWR on January 31, 2020. The GSP is currently under review by DWR. The current status of the GSP with DWR is available on DWR's groundwater sustainability plan status summary page, https://sgma.water.ca.gov/portal/gsp/status. A copy of the GSP (without

appendices, due to length) is included in **Appendix E** herein. A copy of the complete GSP, with all appendices, is available on DWR's groundwater sustainability plan website at https://sgma.water.ca.gov/portal/gsp/preview/59.

SGMA requires local agencies to develop and implement groundwater sustainability plans that achieve sustainable groundwater management by implementing projects and management actions intended to ensure the Basin is operated within its sustainable yield by avoiding undesirable results. Undesirable results are represented in the GSP by six sustainability indicators applicable to the IWVGB: reduction of groundwater in storage, chronic lowering of groundwater levels, seawater intrusion, degraded water quality, land subsidence, and depletion of interconnected surface water. Undesirable results occur when any of the groundwater conditions related to six sustainability indicators become significant and unreasonable.

The GSP discusses Basin management strategies that will culminate in the absence of undesirable results and unsustainable groundwater conditions in the IWVGB. The GSP recommends management actions and projects, and provides measurable sustainability objectives and milestones that are intended to achieve Basin sustainability. These management actions and projects are described in detail in Section 6 of the GSP, a copy of which is included in **Appendix E**. Given the available data and current conditions of the IWVGB, all of the proposed planned projects and management actions are required to be implemented by 2040 in order to reach sustainability.

4. Basin Adjudication

The IWVGB is not adjudicated. The District is initiating a water rights lawsuit (action) to resolve the long-standing overdraft conditions in the IWVGB where water extractions have exceeded natural recharge for years. This action is referred to as a "comprehensive adjudication" and should determine the water rights and quantities of all groundwater pumpers in the IWVGB. This action by the District is necessary to protect and conserve the limited water supply that is vital to the public health, safety, and welfare of all persons and entities in the Basin area.

Conditions of overdraft have existed in the IWVGB for decades as a result of groundwater pumping exceeding natural recharge into the Basin. Approximately 301,000 acres (of the total 382,000 acres) of land overlying the Basin are federal property managed by the Navy, the Bureau of Land Management, and the United States Forest Service. The non-federal lands overlying the Basin consist of the City of Ridgecrest and unincorporated land in the Counties of Kern, San Bernardino, and Inyo.

Water rights of the federal government are beyond the jurisdiction of the State to regulate. Under applicable law, the federal government may only participate in a water rights lawsuit if such a case is considered to be a comprehensive adjudication. Such steps will involve all stakeholders and pumpers, protect the general welfare of the Basin, protect the District's right to pump groundwater from the Basin, protect groundwater quality, and manage water costs to the public. The lawsuit will be filed by the District individually, and not as a member of the IWVGA.

5. Water Quality

Certain portions of the IWVGB contain water with concentrations of total dissolved solids (TDS) greater than what is recommended for domestic use. For this reason, the District's domestic water supply wells are located in areas where the water has lower TDS concentrations, and are spaced far enough apart to prevent migration of higher TDS water into the pumping zones. Additionally, the District treats water from four of its domestic water supply wells to remove arsenic prior to distributing the water to customers. A copy of the District's most recent water quality report, for calendar year 2020, is included in **Appendix J.**

6. Water Supply Enhancement General Plan

The *Indian Wells Valley Water District Water Supply Enhancement General Plan* (last revised on November 9, 2007, herein referred to as the WSE General Plan) describes the efforts being undertaken by the District to eliminate the long-term overdraft condition in the IWVGB.

The goals of the WSE General Plan are:

- To further the District's ongoing efforts to optimize use of the existing water supply (groundwater), and
- To evaluate the feasibility of obtaining or developing one or more supplemental water supplies for potential future use.

To implement the WSE General Plan, the District will conduct various studies that may evaluate, but are not limited to, the following:

- Optimizing use of the existing groundwater supply
- Developing supplemental water supplies, inside and outside the Indian Wells Valley
- Site selection and source evaluation in analyzing supplemental water supplies
- Evaluating water quality and quantity characteristics of potential supplemental water supply sources
- Working with local communities to determine local needs
- Institutional considerations relating to federal, state, and local concerns
- Conveyance and storage requirements
- Environmental considerations
- Financing, cost comparison, and alternatives

Those items listed above are discussed in additional detail in the District's WSE General Plan, a copy of which is included in **Appendix K** herein.

B. GROUNDWATER SUPPLIES

Water Code

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following:
(b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:
(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.

The District's potable water supply consists exclusively of groundwater from the Basin and is extracted as needed. **Tables 4 and 5** below include, respectively, the annual quantities of groundwater pumped during 2015 through 2020 and the quantities of groundwater projected to be pumped in 2025 through 2045, in five-year intervals.

TABLE 4
QUANTITIES OF GROUNDWATER PUMPED (AF/Yr)

Basin Name	2015	2016	2017	2018	2019	2020
Indian Wells Valley Groundwater Basin	6,145	6,381	6,507	6,765	6,116	6,311

TABLE 5
QUANTITIES OF GROUNDWATER PROJECTED TO BE PUMPED (AF/Yr)

Basin Name	2025	2030	2035	2040	2045
Indian Wells Valley Groundwater Basin	6,930	7,130	7,690	7,830	8,050

In **Table 4**, the quantities of groundwater pumped are based on the District's records of gross well production. In **Table 5**, the quantities of groundwater projected to be pumped are based on population projections (refer to **Section 3.C** herein), customer-type proportions, and production per connection in 2018.

The District's estimated total groundwater supply is 20,000 acre-feet per year (AF/Yr), based on the maximum quantity of water that the District is capable of producing if all existing wells operate continuously for 24 hours per day (20,856 AF/Yr rounded down).

The District anticipates a continued reliance on groundwater as its primary source of potable water, and has consistently made efforts to efficiently manage the valuable groundwater resources in the Basin. Refer also to **Section 4.B** above.

Because the District's water supply consists solely of groundwater pumped from the underlying IWVGB, the District is not subject to short-term shortages caused by periodic drought, including droughts lasting up to five years in duration. The IWVGA considered climate change in developing the GSP. Based on the climate change discussion in Section 3.5 of the GSP, the Desert Research Institute (McGraw et al, 2016) examined the predicted precipitation quantities for several published Intergovernmental Panel on Climate Change (IPCC) climate models, and documented conflicting results; that is, some models predicted decreases in future precipitation, while other models predicted increases in future precipitation with the assumed driver of carbon dioxide increase. The GSP does not incorporate any precipitation change in model simulations other than annual fluctuations similar to those that have been observed in recorded data. In the absence of any additional data, it is presumed that climate change will have no adverse impacts on the District's groundwater supply.

C. TRANSFER OPPORTUNITIES

Water Code	
10631.	A plan shall be adopted in accordance with this chapter and shall do all of the following: (c) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

1. Short-Term Transfer Opportunities

The District has interconnection agreements with the China Lake NAWS (the Navy) and Searles Valley Minerals (SVM). These interconnections enable the District to obtain water from, or provide water to, these other local suppliers in an emergency.

The District's interconnection with the Navy includes facilities with an estimated capacity of approximately 3,000 gallons per minute (gpm), to be used for water transfers to or from the District only during emergency conditions. The District's interconnection with SVM (formerly North American Chemical Company) consists of a single tie-in located in the northern half of the District's service area, and allows SVM to take up to approximately 750 gpm from the District under emergency conditions. Since SVM does not perform well-head disinfection, the District cannot currently accept water from SVM.

The long-term transfer opportunities described below also include potential for short-term transfers.

2. Long-Term Transfer Opportunities

The District does not currently have the infrastructure or agreements that would enable importation of water from outside the local area. Procuring an imported water supply would require purchasing water supplies as well as constructing additional infrastructure.

The GSP includes a project identified as "Project No. 1: Develop Imported Water Supply". The majority of the IWVGB is within the boundaries of the Kern County Water Agency (KCWA), which is a State Water Project (SWP) Contractor. The District has had discussions with KCWA in the past regarding short-term and long-term water acquisition, exchanges, and transfers; however, KCWA does not have any unused SWP water that can be made available.

A small portion in the southern part of the IWVGB is within the boundaries of Antelope Valley - East Kern Water Agency (AVEK). The nearest existing imported water conveyance facilities are the Los Angeles Department of Water and Power's (LADWP's) Los Angeles Aqueduct (LA Aqueduct) and AVEK's water transmission pipeline that terminates near California City (California City Pipeline). The LA Aqueduct conveys surface water runoff from the Eastern Sierra Nevada in Inyo County as well as groundwater from the Mono Basin (collectively referred to herein as Owens Valley water). The LA Aqueduct extends through the western portion of the IWVGB, including through the Freeman-Dixie Wash and El Paso areas. The California City pipeline is located at California City, approximately 15 miles south of the IWVGB boundaries and 50 miles south of the City of Ridgecrest.

"Project No. 1: Develop Imported Water Supply" includes two options, and it is anticipated that either one or both options will be fully implemented by 2035. These two options are summarized below and are described in additional detail in Section 5.3 of the GSP.

Under Option 1: Direct Use Project with AVEK, the IWVGA would purchase SWP Table A Entitlement water or potentially a combination of other short- and long-term water supplies in coordination with KCWA, and the IWVGA would arrange for the purchased water to be wheeled through existing AVEK facilities.

Under Option 2: Groundwater Recharge Project with LADWP, the IWVGA would purchase SWP Table A Entitlement water or potentially a combination of other short- and long-term water supplies in coordination with KCWA, and the IWVGA would arrange for the purchased water to be delivered to The Metropolitan Water District of Southern California (MWD) and subsequently provided to LADWP for use in LADWP's service area. In exchange, LADWP would provide Owens Valley water from the LA Aqueduct to the IWVGB for use in a groundwater recharge project.

D. WATER SUPPLY PROJECTS

Water Code

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:
(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 normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

1. District Projects

The District plans to take actions to improve its water supply commensurate with increases in demand over the next ten years or more. These actions are part of the District's Water Supply Improvement Project (WSIP), the original version of which was described in the *Draft Environmental Impact Report, Water Supply Improvement Project*, October 2011, prepared by ECORP Consulting, Inc. The WSIP has been modified since its inception, and the current version of the WSIP is described in an addendum to said EIR. Said addendum was approved by the District's Board of Directors on December 14, 2015.

The WSIP involves increasing the nominal pumping capacity of one of the District's existing wells (Well 34), constructing an additional well (Well 35), and increasing the nominal pumping capacity of Well 35 in the future. The WSIP is intended to meet existing and future maximum day demand with a 20 percent reduction in capacity that could result from a mechanical failure or water quality issue in one or more of IWVWD's production facilities on a maximum demand day.

As of this writing, the capacity of Well 34 has been increased from 1,200 gpm to 2,000 gpm, and Well 35 has been constructed with a capacity of 1,200 gpm. The District plans to increase Well 35's capacity to 2,200 in the future, at a time deemed appropriate by the District's Board of Directors.

The District continues to investigate a variety of potential opportunities to augment the water supply in the Indian Wells Valley, including the possibility of groundwater replenishment using imported water. Further, the District will participate in water supply, demand management, and direct recharge projects set forth in the GSP, which are summarized below.

2. GSP Projects

As a member of the IWVGA, the District is involved in the projects described in the GSP. The GSP includes various water supply projects, as described in Section 5 of the GSP, intended to achieve the sustainability goal. The sustainability goal is to manage and preserve the IWVGB groundwater resource as a sustainable water supply. Some of these

projects are briefly described below and are described in detail in Section 5 of the GSP, a copy of which is included in **Appendix E** herein.

- Project No. 1: Develop Imported Water Supply

  This project includes purchasing and arranging for delivery of water from outside the IWVGB and is described in additional detail in **Section 4.D(2)** herein. It is anticipated that design, permitting, and construction of the infrastructure for this project will begin in January 2026 and will be completed in January 2035.

- Project No. 2: Optimize Use of Recycled Water

  This project involves three subprojects that include using recycled water for either landscape irrigation or groundwater recharge, which are currently being evaluated. The City of Ridgecrest has contractually committed approximately 2,000 AF/Yr of effluent from its wastewater treatment facility to this purpose. The recycled water subprojects are contingent upon the relocation, expansion, and enhancement of the existing City of Ridgecrest Wastewater Treatment Facility, which is currently in the planning stages. It is anticipated that the recycled water permitting and regulatory process for this project will commence in January 2022 and will be completed in January 2023. Construction of the infrastructure for this project is anticipated to begin in January 2023 and completed in January 2025.

- Project No. 3: Basin-Wide Conservation Efforts

  This project includes conferring with groundwater producers to discuss historical and current conservation measures, which will be used as a guide to establish new Basin-wide conservation measures. Specifically, the IWVGA will evaluate practices that potentially waste water as well as health and safety water use requirements for domestic water use. IWVGA will retain the services of a professional water conservation consultant to prepare a Water Conservation Strategic Plan that will incorporate IWVGA's discussions with domestic and municipal groundwater producers as well as the IWVGA's evaluation of health and safety water use requirements for all communities served by the IWVGB. The IWVGA will implement the Water Conservation Strategic Plan in all domestic and municipal uses of groundwater in the IWVGB that are within IWVGA's

jurisdiction. It is anticipated that the Water Conservation Strategic Plan will be completed by January 2023.

E. DESALINATED WATER OPPORTUNITIES

> ***Water Code***
>
> **10631.** A plan shall be adopted in accordance with this chapter and shall do all of the following:
> (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.

In 2010, the District completed a feasibility study, preliminary design report, and a pilot study for treatment of brackish water from the site of the former Neal Ranch in the northwest portion of the Indian Wells Valley. The studies, conducted for the District by Carollo Engineers, evaluated treatment alternatives and produced preliminary design criteria. Although the District no longer owns the former Neal Ranch site, it is currently evaluating potential scenarios for implementation of the report's findings, and is moving forward with a brackish water resource study in partnership with other local stakeholders to identify the potential brackish water resources within the Indian Wells Valley that can be cost-effectively exploited using the technology identified in the feasibility study.

The Brackish Water Resources Partnership, consisting of IWVWD; the Coso Operating Company; Mojave Pistachios; SVM; and Meadowbrook Dairy was formed to evaluate the feasibility of extracting and treating brackish groundwater from the IWVGB to produce fresh water for beneficial use. The Brackish Groundwater Feasibility Study will examine the feasibility of extracting brackish groundwater, options for treating the brackish groundwater, and options for delivery of all water quality types to the various connection points.

The *Brackish Water Siting and Resource Quantification Study* is currently in progress and is funded by a grant from DWR. The Study is intended to identify and quantify potential sources of brackish groundwater suitable for treatment and domestic (or other) use.

F. ENERGY USE

Water Code

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 District uses energy to power its well pumping plants, booster pumping stations, treatment facilities, monitoring facilities, and operations center. A portion of the energy used is generated by solar facilities located at various District facilities, and the remainder of the energy needed is purchased through the local electric utility, Southern California Edison. An estimate of the energy used is included in Table O-1B in **Appendix L** herein.

G. WASTEWATER SYSTEM DESCRIPTION AND OPPORTUNITIES FOR RECYCLED WATER USE

Water Code

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.

1. Wastewater Treatment

Although the District has the authority to accept, treat, and deliver wastewater effluent as reclaimed water, it does not have access to wastewater effluent, which is currently under the jurisdiction of the City of Ridgecrest (City).

The City of Ridgecrest is responsible for the collection, conveyance, treatment, and disposal of wastewater generated within a majority of the District's service area (City of Ridgecrest) and China Lake NAWS (Navy). All wastewater collected is conveyed through

regional wastewater conveyance facilities (trunk sewer, lift station, and force main) to the City of Ridgecrest's Regional Wastewater Treatment Facility (WWTF).

The City's WWTF is located on Navy property and has generated secondary effluent in the quantities shown in **Table 6**. The current permitted capacity of the Regional Wastewater Treatment Plant is 3.6 million gallons per day (approximately 11 acre-feet per day). The current discharge from the City WWTF is approximately 2,464 AF/Yr. The WWTP currently meets its permit requirements; however, it is very old and in need of major repairs. In its current condition, it will be difficult for the WWTP to comply with future regulations.

TABLE 6
QUANTITIES OF WASTEWATER TREATED
AT CITY OF RIDGECREST WWTF (AF/Yr)

2015	2016	2017	2018	2019	2020
2,442	2,520	2,733	2,520	2,476	2,464

Note: All treatment plant effluent is either treated further and used for irrigation or is percolated into the ground to supply water to the Lark Seep. Historical quantities of wastewater are based on Technical Memorandum: City of Ridgecrest Updated Flows and BOD Loading, July 10,2021, prepared by Provost & Pritchard Consulting Group, a copy of which is included in **Appendix Q** herein.

In October 2020, the City of Ridgecrest and the US Navy reached a 50-year land easement agreement and a 10-year wastewater service contract between the Navy and the City of Ridgecrest. This agreement creates the framework for the City of Ridgecrest to upgrade and expand the existing City WWTF.

Based on preliminary planning documents for the proposed new WWTF, the City anticipates a design capacity of 3.6 million gallons per day (MGD) annual average daily flow (AAD), with a future expansion of up to 5.4 MGD AAD.

In addition, the City is considering constructing new tertiary recycled water treatment facilities to produce up to 1.8 MGD (2,016 AF/Yr) of recycled water.

Quantities of wastewater projected to be treated by the City of Ridgecrest for the next 25 years are shown in **Table 7**.

TABLE 7
PROJECTED QUANTITIES OF WASTEWATER REQUIRING TREATMENT AND DISPOSAL (AF/Yr)

	2025	2030	2035	2040	2045
Total	**2,957**	**3,137**	**3,327**	**3,529**	**3,753**

Note: All treatment plant effluent is either treated further and used for irrigation or is percolated into the ground to supply water to the Lark Seep. Projected quantities of wastewater are based on *Technical Memorandum: City of Ridgecrest Updated Flows and BOD Loading, July 10,2021,* prepared by Provost & Pritchard Consulting Group (based on 1.2% per year estimated growth). A copy of said technical memorandum is included in **Appendix Q** herein.

2. Recycled Water Use

a. Recycled Water Currently Being Used

Secondary effluent is currently used by the City of Ridgecrest and the Navy for the purposes described in the following paragraphs.

1. Irrigation of City-managed alfalfa fields (30 Ac): approximately 220 AF/Yr. This use will be discontinued after construction of new City recycling facilities.

2. Irrigation of Navy golf course: Per an agreement between the City and the Navy, the Navy has been allocated 748 AF/Yr for irrigation of a golf course on Navy property (after disinfection). The Navy actually uses approximately 500 AF/Yr for this purpose.

3. Sustaining of water levels in Lark and G-1 Seeps, which serve as a refuge for the Mohave tui chub *(Siphateles bicolor mohavensis),* an endangered species of fish. The Mohave tui chub are native to the Mojave River, but faced extinction there due to competition from introduced species and were relocated to the Lark and G-1 Seeps by the U.S. Fish and Wildlife Service in 1971. The quantity of water used to sustain the seeps has been estimated at 805 AF/Yr. The U.S. Fish and Wildlife Service is considering

relocation of the Mohave tui chub population to other locations within 5 to 10 years.

The remainder of treated effluent is evaporated or percolated in evaporation and facultative ponds. None of the treated effluent is currently used by IWVGA or IWVWD due to lack of adequate treatment or distribution facilities.

Table 8 shows the quantities of secondary-treated effluent used during the period 2016 through 2020.

TABLE 8
HISTORICAL RECYCLED WATER USE(1)
(AF/Yr)

	2016	2017	2018	2019	2020
Navy	500	500	500	500	500
City of Ridgecrest(2)	1,215	1,428	1,215	1,171	1,159
Maintenance of Fish Refuge	805	805	805	805	805
IWVWD	0	0	0	0	0
Total	**2,520**	**2,733**	**2,520**	**2,476**	**2,464**

(1) All treatment plant effluent is either treated further and used for irrigation or is percolated into the ground to supply water to the Lark Seep.

(2) Alfalfa irrigation and percolation/evaporation

b. Potential Uses of Recycled Water

If irrigation of the alfalfa farm is discontinued, the Mohave tui chub is relocated by the U.S. Fish & Wildlife Service, and irrigation of the Navy golf course is limited to 500 AF/Yr, approximately 2,830 AF/Yr of secondary effluent would be available for recycling and other use by 2035. The City's preliminary plans for the new tertiary recycled water treatment facilities are for facilities with a capacity of up to 1.8 MGD (2,016 AF/Yr) of recycled water (approximately 1,250 gpm with flow equalization).

The following potential recycled water uses are currently being evaluated jointly by IWVWD and the Indian Wells Valley Groundwater Authority (IWVGA):

1. Alternative 1: Indirect Potable Reuse (IPR), i.e. groundwater replenishment

    a. Surface (percolation ponds)

    b. Subsurface (direct injection)

2. Alternative 2: Landscape Irrigation (Community College, schools, parks, fairgrounds, sports complex, Navy) with Seasonal Storage (approximate demand of 930 AF/Yr)

3. Alternative 3: Industrial use (boiler feed) at Searles Valley Minerals Company (SVM) (up to approximately 2,000 AF/Yr)

4. Alternative 4: Combination of Landscape Irrigation and IPR

5. Alternative 5: Combination of Industrial Use at SVMC and IPR

Based on preliminary investigations and cost comparisons, IWVWD is emphasizing Alternative 1.b. (subsurface IPR) as the most feasible alternative, for the following reasons:

1. For Alternative 2 (landscape irrigation): demand for recycled water for landscape irrigation will diminish to essentially zero during the wet months, requiring wet-weather storage of essentially the entire discharge of the recycled water treatment facilities. In addition, due to economic factors, demands for landscape irrigation water by individual business customers will be unstable, and thus unreliable, in the long term.

2. For Alternatives 3 and 5 (Industrial use by SVMC): SVMC's willingness to participate in the program is uncertain, and would require construction

of a lengthy pipeline to the Searles Valley (which is located outside IWVWD's service area), along with separation of local distribution facilities to avoid potential cross-contamination of the domestic water supply.

3. For Alternative 4 (Combination of landscape irrigation with IPR): The IPR facilities would be required to accept the entire quantity of recycled water production during wet weather, and would, therefore, need to be designed to accommodate the entire the entire discharge of the recycled water treatment facilities. The IPR facilities for Alternative 4 would need to be essentially the same as the IPR facilities for Alternative 1. Therefore, Alternative 1 would be simpler and considerably more cost-effective.

4. For Alternative 1.a. (surface IPR): Previous studies in the Indian Wells Valley have indicated that percolation basins are inefficient with respect to conveying water into the usable aquifer, due to both evaporation from the percolation ponds and geological factors.

c. Projected Recycled Water Use

Because the City is planning construction of a new wastewater treatment facility, it is possible that treatment plant effluent may be available from the City at some point in the future for use by the IWVGA and/or the District. The City has already contractually committed approximately 2,000 AF/Yr of WWTF effluent to IWVGA for recycling purposes. However, at this time, there are no specific plans for effluent water allocations for District recycling use. Projected use of recycled secondary-treated effluent for the period 2025 through 2045 is shown in **Table 9**, assuming relocation of the Mohave tui chub.

TABLE 9 PROJECTED RECYCLED WATER USE (AF/Yr)					
	2025	2030	2035	2040	2045
Navy	500	500	500	500	500
City of Ridgecrest[1]	1,652	2,637	827	1,029	1,253
Maintenance of Fish Habitat	805	0	0	0	0
IWVGA, IWVWD	0	0	2,000	2,000	2,000
Total	**2,957**	**3,137**	**3,327**	**3,529**	**3,753**

(1) Alfalfa irrigation and percolation/evaporation.

d. Encouraging Recycled Water Use

As discussed above, recycled water is currently unavailable in the District's service area. WWTP produces secondary treated effluent, a portion of which is further treated by the Navy for use as irrigation water. Remaining quantities are used by the City of Ridgecrest to irrigate a City-managed alfalfa farm, as well as for percolation that contributes water to a reserve for the Mohave tui chub, an endangered fish species. Therefore, the District is not encouraging recycled water use within its service area at this time.

Although the City is currently in the planning stages for a new wastewater treatment facility that may include tertiary treatment facilities, it is likely that the recycled water produced by the new facilities will be used for groundwater replenishment, not for use by individual water customers. Therefore, the District is not planning to encourage recycled water use within its service area in the foreseeable future.

3. Recycled Water Optimization Plan

As described above, it is not currently feasible to purvey recycled water within the District's service area, and future recycled water production will likely be used for groundwater replenishment, rather than being made available for individual water customers. Therefore, a Recycled Water Optimization Plan has not been prepared.

SECTION 5

WATER USE CHARACTERIZATION

SECTION 5
WATER USE CHARACTERIZATION

A. PAST, CURRENT, AND PROJECTED WATER DEMANDS

Water Code

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(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:

(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.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

Currently, the District's service area consists of approximately 35,800 residents, a small commercial and industrial sector, a small institutional sector, and no agricultural connections. Based on 2020 data, approximately 76% of the water produced by the District is used by single family residential services, approximately 9% is used by multi-family residential services, and approximately 15% is used by commercial/institutional services.

Table 10 is arranged by customer type and shows past, current, and projected numbers of customer connections and quantities of water delivered. **Table 11** lists quantities of water for uses other than deliveries to customers, as well as water losses, and **Table 12** shows the District's total water production for 2015 and 2020, as well as projections through 2045 as the sum of **Tables 10 and 11**.

TABLE 10
PAST, CURRENT, AND PROJECTED WATER DELIVERIES (AF/Yr)

Year	Metered/ Unmetered[1]	Water Use Sectors	Single Family[2]	Multi-Family[3]	Commercial/ Institutional	Total
2015[4]	Metered	# of Accounts	10,700	342	635	11,677
		Deliveries	4,440	547	877	**5,864**
2020[4]	Metered	# of Accounts	11,416	366	707	12,489
		Deliveries	4,393	490	547	**5,430**
2025	Metered	# of Accounts	11,905	356	714	12,975
		Deliveries[5]	4,688	549	963	**6,200**
2030	Metered	# of Accounts	12,246	366	735	13,347
		Deliveries[5]	4,824	565	991	**6,380**
2035	Metered	# of Accounts	12,586	377	755	13,718
		Deliveries[5]	5,203	610	1,068	**6,881**
2040	Metered	# of Accounts	13,211	395	793	14,399
		Deliveries[5]	5,297	621	1,088	**7,006**
2045	Metered	# of Accounts	13,835	414	831	15,080
		Deliveries[5]	5,446	638	1,119	**7,203**

(1) All of the District's service connections are metered.
(2) Includes deliveries for lower-income single family residences. See also **Section 5.B.**
(3) Includes deliveries for lower-income multi-family residences. See also **Section 5.B.**
(4) Data for 2015 and 2020 are based on District records for those years.
(5) Projected demands were estimated using population projections (refer to **Section 3.C**), gross 2018 per capita water usage, and the 2018 proportions of total water use by sector. Projected demands do not include water savings from codes, standards, ordinances, and land use plans, also known as "passive savings".

TABLE 11
ADDITIONAL WATER USES AND LOSSES (AF/Yr)

Water Use	2015	2020	2025	2030	2035	2040	2045
System Water Losses[1]	273	573	417	428	461	470	483
Other Potable Uses[2]	8	308	313	322	348	354	364
Recycled Water	0	0	0	0	0	0	0
Total	**281**	**881**	**730**	**750**	**809**	**824**	**847**

(1) System water losses for 2015 are based on the water audit prepared for the 2015 reporting year. System water losses for 2020 are based on the difference between consumption and well production, and differ somewhat from the water audit for reporting year 2020, which is based on fiscal year July 1, 2019 through June 30, 2020. Projected future water losses are estimated based on a factor of 6% of total production.
(2) Other potable uses include fire suppression, street cleaning, line flushing, construction meters, and temporary meters.

TABLE 12
TOTAL WATER USE (AF/Yr)

Water Distributed	2015	2020	2025	2030	2035	2040	2045
Sum of Tables 10 and 11	6,145	6,311	6,930	7,130	7,690	7,830	8,050

1. Residential Sector

The District's residential sector is comprised of its single family and multi-family customers. Based upon District records for 2020, its single family residential sector accounts for approximately 91% of the District's service connections and approximately 76% of water use within the District, while the District's multi-family residential sector accounts for approximately 3% of the District's service connections and approximately 9% of its total water use.

Numbers of accounts and quantities of water usage set forth in **Table 10** include accounts and usage for residential housing units needed for lower-income households, as required by CWC Section 10631.1. See **Section 4.B.** for a discussion of water needed for lower-income housing units.

2. Commercial/Industrial Sector

The District has a complex mix of commercial customers, ranging from family restaurants, insurance offices, beauty shops, and gas stations to hotels, motels, shopping centers and high-volume restaurants, as well as other facilities that serve the non-resident population. The commercial sector has grown steadily each year, and some growth is expected to continue to occur over the next several years.

The District serves a small industrial sector, including information technology, supply distribution, servicing of industrial equipment, and some light manufacturing. The industrial sector has not grown much in the last decade or so, and is not expected to increase significantly over the next 25 years. The District estimates the number of industrial customers to be less than ten at this time. The District's Commercial/Industrial water use is included in the Commercial/Institutional category in **Table 10**.

3. Institutional/Governmental Sector

The District has a stable institutional/governmental sector, comprised primarily of local government, parks, schools, hospital, and other types of public facilities. This sector is not expected to increase significantly over the next 25 years; however, recycled water use for irrigation of some of these facilities may become available in the foreseeable future, as described in **Section 4.F** herein, which would offset the use of potable water for such irrigation. The District's Institutional/Governmental water use is included in the Commercial/Institutional category in **Table 10**.

4. Landscape/Recreational Sector

Landscape and recreational customer demand is expected to increase gradually at a rate of approximately 2% per year over the next 25 years, due primarily to continued growth in visitor-serving facilities. Increased efficiency and landscape conversions at existing parks, as well as the District's Ordinances 98, 99, and 103 pertaining to water-efficient landscapes and water conservation measures (copies included in **Appendix M**), should help offset new demand resulting from projected increases in this sector. Additionally, recycled water for irrigation use may become available in the foreseeable future, as described in **Section 4.F.** herein. Landscape/Recreational water use is included in the Commercial/Institutional category in **Table 10**.

B. WATER SUPPLIES FOR LOWER-INCOME HOUSING

Water Code	
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.

In accordance with CWC Section 10631.1, this UWMP includes projected water use for residential housing needed for lower-income households. "Lower-income household" is defined in Health and Safety Code Section 50079.5 as persons and families whose income does not exceed the qualifying

limits for lower-income families as established and amended from time to time pursuant to Section 8 of the United States Housing Act of 1937.

The *Regional Housing Needs Allocation Plan* (RHNA Plan) was adopted by the KernCOG on June 19, 2014 and approved by the California Department of Community Development on September 10, 2014. Pursuant to the RHNA Plan, approximately 21.6% of households in the Ridgecrest area are considered lower-income households (11.8% very low income and 9.8% low income).

Based on the above, it is estimated that approximately 22% of households within the District's service area are lower-income households; therefore, approximately 22% of water for residential uses is needed for lower-income housing. The ratio of total water use that is projected as needed for residential housing for lower-income households to that for moderate income households is expected to vary over the next 25 years.

IWVWD has a civic and legal responsibility to provide water service to customers within its service area. IWVWD does not give priority to one residential area over another, and all residential customers are served equally during water shortage emergencies in terms of service and delivery. IWVWD does not deny water service to non-delinquent accounts. Water use priority does not differ based on income level, but is classified by type of use in accordance with the sectors listed in **Table 10** herein.

C. DISTRIBUTION SYSTEM WATER LOSSES

> ***Water Code***
>
> **10631.** A plan shall be adopted in accordance with this chapter that shall do all of the following:
>
> (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
>
> (d) (3) (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.
>
> (d) (3) (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.

Beginning with the 2015 UWMP, water suppliers were required to report their distribution system water losses based on a methodology and quantification worksheet developed by the American Water Works Association (AWWA). In 2020 and future UWMPs, this distribution system water loss will be included for each of the five years preceding the UWMP. Copies of IWVWD's water audit reports for reporting years 2015 through 2020 are included in **Appendix N** herein.

Pursuant to CWC 10631(d)(3)(C), data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the State Water Resources Control Board (SWRCB) pursuant to CWC 10608.34; however, these standards have not yet been implemented by the SWRCB. Based on the District's water audit reports for prior years, it is anticipated that the District will meet its water loss standard when it is established.

SECTION 6

BASELINE, TARGETS, AND 2020 COMPLIANCE

SECTION 6
BASELINES, TARGETS, AND 2020 COMPLIANCE

Water Code

10608.20. (a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis…and may determine targets on a fiscal year or calendar ear basis.

(2) It is the intent of the Legislature that the urban water use targets described in paragraph (1) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

A. BASE DAILY PER CAPITA WATER USE (BASELINE)

Water Code

10608.12. (b) "Base daily per capita water use" means any of the following:
(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

Base daily per capita water use (also referred to herein as baseline) is defined as set forth in CWC Section 10608.12(b)(1). The District's baseline was determined in its 2010 UWMP in accordance with methodologies developed by the DWR, pursuant to CWC Section 10608.20(h)(1), that are set forth in the document, *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use*, dated October 1, 2010, referred to herein as DWR's *Methodologies*.

A revised version of the *Methodologies* document, titled *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, Final Draft*, dated February 2016 (*2016 Methodologies*), has been made available by DWR; however, the requirements for determining the baseline and the urban water use targets have not changed since the time of the 2010 UWMP.

Pursuant to DWR's *Methodologies* and *2016 Methodologies*, calculating baseline water use involves four steps:

1. Estimate service area population for each year in the base period.

2. Calculate gross water use for each year in the base period, and express gross water use in gallons per day.

3. Divide gross water use by service area population for each year in the base period to calculate daily per capita water use.

4. Calculate the average per capita water use by summing the values calculated in Step 3 above and dividing by the number of years in the base period. The result is the baseline.

The District had selected the ten-year base period of January 1, 1998 through December 31, 2007. The District's service area historical population data was based on data provided by the KernCOG during preparation of the District's 2010 UWMP. The District's water use in acre-feet per year (AF/Yr) is based on the District's water production records. Using this data, the District's baseline was determined to be 264 gallons per capita per day (gpcd), calculated as shown in **Table 13**. This calculation was previously included in the District's 2010 UWMP and 2015 UWMP, and has not since been revised.

TABLE 13 INDIAN WELLS VALLEY WATER DISTRICT'S BASELINE WATER USE				
	Estimated Service Area Population[1]	Gross Water Use		
		AF/Yr[2]	gpd[3]	gpcd[4]
Year	A	B	C (B x 43560 x 7.48/365)	D (C ÷ A)
1998	28,907	8,699	7,765,438	269
1999	28,714	8,154	7,278,926	253
2000	28,522	8,331	7,436,931	261
2001	28,772	8,447	7,540,482	262
2002	29,024	8,865	7,913,623	273
2003	29,279	8,605	7,681,526	262
2004	29,535	8,992	8,026,993	272
2005	29,794	8,543	7,626,179	256
2006	30,056	8,865	7,913,623	263
2007	30,319	9,077	8,102,871	267
Baseline *(Average of Gross Water Use for 1998-2007)*				***264***

(1) Historical population based on data provided by KernCOG
(2) Acre-feet per year (AF/Yr), based on District records of gross well production
(3) Gallons per day
(4) Gallons per capita per day

B. URBAN WATER USE TARGET

In accordance with CWC Section 10608.20(g), an urban retail water supplier may update its 2020 water use target in its 2015 UWMP and may make this update using a different target method than was used in 2010. IWVWD had elected not to update its water use target in 2015; therefore, the water use target and interim water use target described herein are the same as those set forth in IWVWD's 2010 UWMP and 2015 UWMP.

The District's urban water use target was determined during preparation of its 2010 UWMP and is based on one of the four available methods described in CWC Section 10608.20(b). The District had selected DWR's Provisional Method 4 (herein referred to as Method 4) for determining its urban water use target.

Method 4, which is set forth in Appendix B of DWR's *2016 Methodologies* document, had not changed since preparation of IWVWD's 2010 UWMP. Method 4 defines an urban water use target as the baseline minus total water savings assumed due to metering of unmetered water connections and achieving water conservation measures in three water use sectors, as described below, by using the following equation:

Urban Water Use Target	=	Baseline	—	Total Water Savings

Total water savings is equal to the sum of metering savings, indoor residential savings, commercial/industrial/institutional (CII) savings, and landscape and water loss savings.

DWR has developed a calculator for use in determining the total water savings and urban water use target via Method 4. Printouts of the user input page and the target calculation page that were prepared for the 2010 UWMP, and were included in both the 2010 UWMP and 2015 UWMP, are included on the following two pages.

The calculator required the user to input the following information (District information):

- Baseline period (1998-2007)
- Baseline water use (264 gpcd)
- Service area population in midpoint year of baseline period (29,024)
- Number of unmetered connections in midpoint year of baseline period (0)
- Water use by unmetered connections in midpoint year of baseline period (0)
- CII water use in midpoint year of baseline period (1,995 AF)

Using Method 4, the District's urban water use target is 214 gpcd, rounded from 214.2 gpcd.

User Input -- Provisional Method 4 Target

Target Calculation Option (select one): *	Calculate Targets Using Default Indoor Residential Savings
Water Supplier Name: *	Indian Wells Valley Water District

10-15 Year Baseline Water Use Information

Baseline Period: *	1998-2007	Midpoint of Baseline Period:	2002
Baseline Water Use GPCD: *	264.0	Population in Midpoint Year: *	29,024

5 Year Baseline Water Use Information

Baseline Period: *	2005-2009		
Baseline Water Use GPCD: *	256.0	95% of 5-Year Baseline GPCD:	243.2

Unmetered Connections

Number of Unmetered Connections in 2002: *	0
Water Use By Unmetered Connections In 2002: *	0 Acre-Feet

Baseline CII Water Use[1]

CII Water Use in 2002: *	1,995 Acre-Feet
Per Capita Use:	61.4 GPCD

[1]CII = Commercial, Industrial, Institutional.

If you have chosen to calculate targets using the Default Indoor Residential Savings, you do not need to complete the remaining tables.

Note: CII Water Use in 2002 is based on the District's estimate of non-residential water use (approximately 23% of total water production) within its service area.

Target Calculation -- Provisional Method 4 Target

Step 1. Calculation of Landscape Water Use and System Water Loss

Urban Supplier	1998-2007 Baseline GPCD	–	Assumed Indoor Residential per Capita Water Use GPCD	–	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD
Indian Wells Valley Water District	264.0		70.0		61.4		132.6

Step 2. Calculation of Savings Using BMP Calculators

(Alternate) STEP 2 BEING USED TO CALCULATE TARGET

Urban Supplier	Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	Total Savings GPCD
	Single Family Toilets	Multi Family Toilets	Resi-dential Washers	Resi-dential Showers	Total IR Savings								
Indian Wells Valley Water District	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX		XXXX		XXXX		XXXX

(Alternate) Step 2. Calculation of Savings Using Default Indoor Residential Savings

Urban Supplier	Default Resi-dential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD
Indian Wells Valley Water District	15.0		0.0		6.1		28.6		49.8

Step 3. Calculation of Urban Water Use Targets

Urban Supplier	1998-2007 Baseline GPCD	–	Total Savings GPCD	=	Computed 2020 Target GPCD	⇒	Less Than 95% of 5-Year Baseline	⇒	Final 2020 Target	⇒	Final 2015 Target
Indian Wells Valley Water District	264.0		49.8		**214.2**		**TRUE**		**214.2**		**239.1**

(a) In accordance with DWR's Method 4 calculator, CII water savings is assumed to be 10 percent of baseline CII water use, in gpcd.

(b) Landscape irrigation and water loss savings is based on a 21.6% reduction in estimated landscape water use and system water loss. The 21.6% reduction factor was determined by DWR and applies to all water suppliers.

C. MINIMUM WATER USE REDUCTION REQUIREMENT

> ***Water Code***
>
> **10608.12.** (b) "Base daily per capita water use" means any of the following:
> (3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.
>
> **10608.22.** Notwithstanding the method adopted by an urban retail water supplier pursuant to Section 10608.20, an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12…

In accordance with DWR's *Methodologies*, a five-year baseline was calculated in 2010 to determine whether the urban water use target meets the minimum water use reduction requirement pursuant to CWC Section 10608.22. These calculations have not changed during preparation of this UWMP, and they are the same as those included in IWVWD's 2010 UWMP and 2015 UWMP.

The following two steps were used to determine the minimum water use reduction requirement:

1. Calculate baseline water use using a continuous five-year period ending no earlier than December 31, 2007 and no later than December 31, 2010.

2. Multiply the result from the first Step by 0.95. The 2020 urban water use target cannot exceed this value. If the urban water use target is greater than this value, reduce the target to this value.

The District selected a five-year base period of January 1, 2005 through December 31, 2009. The District's five-year baseline water use is calculated as shown in **Table 14**.

TABLE 14
INDIAN WELLS VALLEY WATER DISTRICT'S FIVE-YEAR BASELINE WATER USE

Year	Estimated Service Area Population[1]	Gross Water Use		
		AF/Yr[2]	gpd[3]	gpcd[4]
	A	B	C (B x 43560 x 7.48/365)	D (C ÷ A)
2005	29,794	8,543	7,626,179	256
2006	30,056	8,865	7,913,623	263
2007	30,319	9,077	8,102,871	267
2008	30,585	8,496	7,584,223	248
2009	30,853	8,413	7,510,131	243
Five-Year Baseline *(Average of Gross Water Use for 2005-2009)*				***256***

(1) Historical population based on data provided by KernCOG
(2) Acre-feet per year, based on District records of gross well production
(3) Gallons per day
(4) Gallons per capita per day

The calculation in **Table 14** above yields a five-year baseline water use of 256 gpcd. In accordance with step 2 above, multiplying the five-year baseline by 0.95 yields a value of 243 gpcd.

Pursuant to CWC Section 10608.22, "…an urban retail water supplier's per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use as defined in paragraph (3) of subdivision (b) of Section 10608.12". The District's urban water use target is 214 gpcd, which is less than the 243 gpcd result described above, and therefore meets the minimum water use reduction requirement set forth in CWC Section 10608.22.

D. INTERIM URBAN WATER USE TARGET

Water Code

10608.12. (j) "Interim urban water use target" means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

10608.24. (a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

The interim urban water use target is defined in CWC Section 10608.12(j) and is the midpoint between an urban retail water supplier's baseline and its urban water use target for 2020. Urban retail water suppliers who met their interim urban water use target by December 31, 2015 were generally considered to be on track to meet their urban water use target by December 31, 2020.

Based on the District's baseline of 264 gpcd and its urban water use target of 214 gpcd, the District's interim urban water use target is 239 gpcd.

Based on completion of the SB X7-7 Verification Form provided by DWR in 2015, IWVWD's water use for compliance year 2015 was 189 gpcd, thereby meeting its interim urban water use target of 239 gpcd. Therefore, in 2015, the District had achieved compliance with its interim water use target required by December 31, 2015. The District's completed SB X7-7 Verification Form was included in its 2015 UWMP and a copy is included in **Appendix O** herein for reference.

E. 2020 COMPLIANCE

> *Water Code*
>
> **10608.24.** (b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.
>
> **10608.24.** (c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

As stated in **Section 6.B** herein, the District's water use target is 214 gpcd. Based on completion of the SB X7-7 Compliance Form provided by DWR for 2020 compliance calculations, the District's water use for compliance year 2020 was 157 gpcd, which is below its urban water use target of 214 gpcd. Therefore, the District has met its urban water use target required by December 31, 2020. The District's completed SB X7-7 Compliance Form is included in **Appendix P** herein, the results of which are summarized in **Table 15** below.

TABLE 15
INDIAN WELLS VALLEY WATER DISTRICT
2020 SB X7-7 COMPLIANCE SUMMARY

Estimated 2020 Service Area Population[1]	2020 Gross Water Use			2020 Urban Water Use Target
	AF/Yr[2]	gpd[3]	gpcd[4]	
A	B	C	D	
35,800	6,311	5,633,714	157	214

(1) Based on data described in **Section 3.C** herein.
(2) Acre-feet per year; based on District records of gross well production.
(3) Gallons per day; C = B x 43560 x 7.48 ÷ 365
(4) 2020 compliance water use in gallons per capita per day; D = C ÷ A

SECTION 7

WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

SECTION 7
WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

A. WATER SERVICE RELIABILITY

Water Code

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 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.

10631. (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information, including all of the following:

(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.

The District's sole source of potable water supply water supply consists of groundwater pumped from the Indian Wells Valley Groundwater Basin (IWVGB). Although California had experienced severe drought conditions extending from 2012 through 2016, the IWVWD did not experience any actual supply deficiencies due to its reliance on local groundwater sources.

The IWVGB is one of 21 basins in the state that the DWR determined is in "critical overdraft," meaning that the Basin suffers from chronic overuse of water supplies beyond the natural recharge of the Basin. The region has created a Groundwater Sustainability Agency (the Indian Wells Valley Groundwater Authority or IWVGA) to take policy steps that address the long-term sustainability of the IWVGB. IWVGA is a joint-powers authority consisting of the City of Ridgecrest, County of Kern, County of Inyo, County of San Bernardino, and the Indian Wells Valley Water District.

IWVGA is in the process of implementing a groundwater sustainability plan to reverse the effects of overdraft while maintaining the water needs of area residents and business, which include the Indian Wells Valley Water District. The GSP was submitted to the DWR on January 31, 2020 and is currently in review. While the plan is in review, the IWVGA is implementing a series of projects and management measures to slow the groundwater overdraft and bring the basin back into long-term sustainability.

The GSP includes alternatives for implementation of a recycled water program, alternatives for purchasing and importing water to the IWVGB, and a program to facilitate fallowing of active farmland, among other projects and programs. A copy of the GSP is included in **Appendix E** herein (minus appendices, due to length), and a copy of the complete GSP, including appendices is available on the Department of Water Resources (DWR) GSP website at https://sgma.water.ca.gov/portal/gsp/preview/59.

IWVWD does not have an immediate concern with short-term water supply reliability, and because the District's water supply is groundwater, the District is not subject to short-term water shortages resulting from temporary dry weather conditions or droughts lasting for a period of five years. Even before formation of the IWVGA, the District and other groundwater users in the Indian Wells Valley have been implementing ongoing groundwater management practices to extend the useful life of the groundwater resource to meet current and future demands.

The District's goal is to provide its customers with adequate and reliable supplies of high-quality water, which meet present and future needs in an environmentally and economically responsible manner. The District's projected water supply reliability under normal conditions, during a single dry water year, and during a drought lasting up to five consecutive years, is shown in **Tables 16 through 18** below.

TABLE 16
PROJECTED NORMAL YEAR SUPPLY AND DEMAND COMPARISON

	2025	2030	2035	2040	2045
Supply totals (AF/Yr)	20,000	20,000	20,000	20,000	20,000
Demand totals (AF/Yr)	6,930	7,130	7,690	7,830	8,050
Difference (supply minus demand, in AF/Yr)	13,070	12,870	12,310	12,170	11,950
Difference as % of Supply	65%	64%	62%	61%	60%
Difference as % of Demand	189%	181%	160%	155%	148%

TABLE 17 PROJECTED SINGLE DRY YEAR SUPPLY AND DEMAND COMPARISON					
	2025	2030	2035	2040	2045
Supply totals (AF/Yr)	20,000	20,000	20,000	20,000	20,000
Demand totals (AF/Yr)	6,930	7,130	7,690	7,830	8,050
Difference (supply minus demand, in AF/Yr)	13,070	12,870	12,310	12,170	11,950
Difference as % of Supply	65%	64%	62%	61%	60%
Difference as % of Demand	189%	181%	160%	155%	148%

TABLE 18 PROJECTED MULTIPLE(1) DRY YEARS SUPPLY AND DEMAND COMPARISON					
	2025	2030	2035	2040	2045
Supply totals (AF/Yr)	20,000	20,000	20,000	20,000	20,000
Demand totals (AF/Yr)	6,930	7,130	7,690	7,830	8,050
Difference (supply minus demand, in AF/Yr)	13,070	12,870	12,310	12,170	11,950
Difference as % of Supply	65%	64%	62%	61%	60%
Difference as % of Demand	189%	181%	160%	155%	148%

(1) Based on a drought lasting five consecutive years and ending in the year specified in each column.

The estimated groundwater supply of 20,000 AF/Yr is based on the maximum quantity of water that the District is capable of producing if all existing wells operate continuously for 24 hours per day (20,856 AF/Yr rounded down). The District has not experienced an actual supply deficiency during dry years or multiple dry years. The District is located in an arid high desert region; therefore, supply and demand remain relatively unchanged in the District's service area during dry years, and the District does not expect a decrease in supply based on drought conditions (including a drought lasting up to five years) or climate change.

Table 19 below shows the nominal production capability for each of the District's production wells.

TABLE 19
SUPPLY SOURCE PRODUCTION CAPABILITY

Well No.	Nominal Production Capacity (gpm)
9A	1,000
10	1,100
11	1,200
13	1,200
17	1,200
18	1,200
30	1,400
31	1,200
33	1,200
34	2,000
Total	**12,700**

The District's current pumping plant capacity is capable of providing for the current maximum day demand of 11,050 gpm, with a reserve capacity of 1,650 gpm.

The District does not anticipate any inconsistency in supply due to legal, environmental, water quality, or climate factors. Factors that can cause water supply shortages or supply interruptions for the District are earthquakes, equipment failure, chemical spills, and energy outages at treatment and pumping facilities. The actions the District will take in the event of a water supply shortage or supply interruption are described in the District's Water Shortage Contingency Plan, a copy of which is included **Appendix F** herein.

B. DROUGHT RISK ASSESSMENT

Water Code

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.

1. Data and Methodology

This drought risk assessment considers a severe drought occurring throughout the years 2021-2025. The District's sole source of water supply is the Indian Wells Valley Groundwater Basin (IWVGB). Historically, based on District water production and consumption records, and basin groundwater level monitoring, the District has not experienced any inconsistency in supply resulting from drought, including during the most recent 5-year drought extending from 2012-2016 and prior droughts of 2007-2009, 1987-1992, and 1976-1977.

The existing basin-wide monitoring program was established by the Kern County Water Agency (KCWA) in 1995, and has been continuously operated since then, with the Indian Wells Valley Groundwater Authority (IWVGA) accepting responsibility for the monitoring program in the summer of 2018. Monitoring data is collected and shared among major water producers and local, county, and federal agencies. As of 2019, 198

monitoring wells, two stream gages, and four weather stations contribute data to the monitoring program.

Depth to groundwater is measured biannually at the 198 monitoring wells during March and October to observe seasonal changes in groundwater levels. The existing groundwater level monitoring network is very robust for establishing changes in groundwater levels over time throughout the IWVGB, and many of the wells have been monitored for over 20 years, and some for over 50 years. The monitoring network shows groundwater level declines from 0.5 to 2.5 feet per year near pumping areas in the main basin, and no change or slight increases in other areas of the basin.

As set forth in the GSP, the Desert Research Institute (McGraw et al, 2016) examined the predicted precipitation quantities for several published Intergovernmental Panel on Climate Change (IPCC) climate models and documented conflicting results; that is, some models predicted decreases and some predicted increases in local precipitation in the future with the assumed driver of carbon dioxide increase. Therefore, consistent with the GSP, this drought risk assessment considers annual fluctuations in precipitation similar to those that are included in the historical record but does not incorporate precipitation changes based on climate models.

2. Source Reliability

The reliability of the District's water source is described in **Section 7.A** above. The District's water source, the IWVGB is expected to provide adequate, reliable water supply for the District's service area for the foreseeable future. Although the IWVGB is in a condition of overdraft, implementation of the projects and management measures included in the GSP are anticipated to reduce the condition of overdraft and achieve basin sustainability. The anticipated implementation timeline for the projects and management actions ranges from 2020 to 2035.

3. Water Supply and Demand Comparison

A comparison of the District's estimated water supply and demand for years 2025, 2030, 2035, 2040, and 2045 is included in **Tables 15** through **17** in **Section 7.A** above. **Table 15**

reflects supply and demand during a normal water year, **Table 17** reflects supply and demand during a single dry year, and **Table 18** reflects supply and demand during a multiple dry year period of five years.

The District is located in an arid high-desert region; therefore, supply and demand remain relatively unchanged in the District's service area during dry years, and the District does not expect a decrease in supply based on climate change or drought conditions (including a drought lasting up to five years).

4. Additional Considerations And Summary

There are no anticipated water supply constraints based on climate conditions (refer to **Section 7.B(1)** above), anticipated regulatory changes, or other criteria. **Table 20** below lists estimated supplies and demands for a five-year drought occurring from 2021 to 2025. Refer also to Table 7-5 in **Appendix H**.

TABLE 20
INDIAN WELLS VALLEY WATER DISTRICT
FIVE-YEAR DROUGHT RISK ASSESSMENT

Year	Water Supply (AF/Yr)	Water Use (AF/Yr)
Year 1: 2021	20,000	6,770
Year 2: 2022	20,000	6,810
Year 3: 2023	20,000	6,850
Year 4: 2024	20,000	6,890
Year 5: 2025	20,000	6,930

Based on the District's assessment of the available data, the District has a reliable, adequate supply of water to meet demands within its service area over the 25-year planning horizon of this UWMP, even with extended drought conditions.

SECTION 8

WATER SHORTAGE CONTINGENCY PLAN

SECTION 8
WATER SHORTAGE CONTINGENCY PLAN

> ***Water Code***
>
> **10632.** Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan…

Beginning with the 2020 UWMP, every urban water supplier must prepare and adopt a WSCP and shall include same in its UWMP. The District's 2020 WSCP is included in **Appendix F** herein and supersedes the District's 2017 Water Shortage Contingency Plan (Ordinance No. 101).

The District's 2020 WSCP was adopted by the District's Board of Directors on August 9, 2021, following a public hearing to receive public comments and concerns. A copy of signed Ordinance No. 105 adopting the 2020 WSCP is included in **Appendix C** of this UWMP.

SECTION 9

DEMAND MANAGEMENT MEASURES

SECTION 9
DEMAND MANAGEMENT MEASURES

Water Code

10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:

(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 measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(1)(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.

A. WATER WASTE PREVENTION ORDINANCES

The District currently has multiple ordinances in effect that prohibit or restrict specific water use practices. Ordinance No. 98 requires a water efficient landscape as a condition of receiving new water service, and Ordinance No. 99 requires water efficient landscape as a condition of receiving new multifamily dwellings, commercial, and/or institutional water service. Ordinance No. 103, adopted September 11, 2017 imposes water use prohibitions and restrictions, as well as penalties for noncompliance. It is important to note that, as of the adoption of the WSCP, Ordinance No. 93 is currently superseded by Ordinance No. 100, and Ordinance No. 100 is currently superseded by Ordinance No. 103; however, Ordinance No. 100 will be put back into effect if Ordinance No. 103 is rescinded by the District. Likewise, Ordinance No. 93 will be put back into effect if Ordinance No. 100 is rescinded by the District. Ordinance Nos. 93, 100, and 103 are described below, and copies of these ordinances are included **Appendix M** herein.

1. Ordinance No. 93

a. Summary

The District adopted *Ordinance No. 93 Ordinance of the Board of Directors of the Indian Wells Valley Water District, Kern and San Bernardino Counties, California, Rescinding Ordinance No. 72 in its Entirety; and Adopting Voluntary and Mandatory Conservation Measures and Recommending and/or Requiring Certain Water Conservation Measures*, effective as of May 10, 2010, also referred to as the Water Efficient Landscape Ordinance.

Ordinance No. 93 sets forth landscape procedures for new development (including residential, commercial, industrial, and institutional development), including water features and new swimming pools. Additionally, Ordinance No. 93 includes certain mandatory water restrictions for all District customers.

Ordinance No. 93 is currently superseded by Ordinance No. 100, until such time that Ordinance No. 100 is rescinded by the District's Board of Directors. As noted in Section 1.2, Ordinance No. 103 supersedes Ordinance No. 100. The water use restrictions, the associated penalties, and the appeal process pursuant to Ordinance No. 93 are described in **Items b through d** below.

b. Water Use Restrictions Pursuant to Ordinance No. 93

The following water use restrictions will be in effect in accordance with Ordinance No. 93, upon rescission of Ordinance No. 100:

1) All new single-family residential landscape projects are subject to District Ordinance No. 98, which imposes mandatory restrictions on landscaping and rescinded Ordinance No. 90. All existing single-family residential landscape projects which are not subject to Ordinance No. 98 are encouraged to abide by these recommendations. Existing landscape areas larger than one acre may be audited so recommendations can be made for water savings.

2) **Item (4)** below cites the Approved Plant List. The Approved Plant List is the list formulated by District Staff and approved and/or modified by the District's Board of Directors. The Approved Plant List is a requirement for new development subject to District Ordinance Nos. 98 and 99. The Approved Plant List is a recommendation for existing single-family and multi-family dwellings, commercial, and/or institutional development.

3) The following is recommended for all single-family homes:

a) Turf landscaping should not exceed 2,000 square feet of single family residential lots 10,000 square feet or smaller.

b) Turf landscaping should not exceed 3,000 square feet of single family residential lots 10,001 square feet or larger.

c) Irrigation and Landscape Design. Homebuilders, developers, and/or landscape contractors should provide the residential customer with an irrigation design and landscape design that would, if installed, demonstrate compliance with Ordinance No. 93. Low volume irrigation systems will be demonstrated along with low water use plant material.

d) The irrigation design needs to show proper drainage to eliminate water waste.

e) Irrigation Drainage. All irrigation water is to remain on property during normal water run cycle, such that there is minimal or limited runoff from the area being irrigated, specifically onto sidewalks and streets.

4) All new landscape projects for multi-family residential, commercial, industrial, or institutional customers are subject to District Ordinance No. 99, which imposes mandatory restrictions on:

   a) Turf and/or any plants not on the Approved Plant List (defined in Ordinance No. 93 in **Appendix M** herein) are limited to up to 50% of the landscape area.

   b) Only the plants from the Approved Plant List, on file and maintained by the District, shall be used within the remaining landscape area.

   c) The irrigation system in the remaining landscape area must be a Low Volume Irrigation System, as defined in Ordinance No. 93.

   d) All of the landscape area shall be designed to eliminate any runoff.

   e) An irrigation and landscape plan shall be submitted to the City of Ridgecrest Planning Department, containing low volume irrigation systems and low water use plants. The irrigation plan shall demonstrate drainage to eliminate water waste. The plan must provide adequate water supply such that all of the water needed can be delivered every other day within the water window of 8:00 PM - 8:00 AM during the months of May, June, July, August, September, and October.

   f) Irrigation Drainage. All irrigation water is to remain on property during normal water run cycle, such that there is no runoff from the area being irrigated, specifically onto sidewalks and streets.

5) Public and private swimming pools and water bodies over 300 square feet shall adhere to the goal of water efficiency, as follows:

   a) New swimming pools shall have a swimming pool cover.

b) New swimming pools shall have a drainage plan.

c) Water features, including swimming pools, must have recycling or recirculation features.

6) No water user shall waste water, as described in the following **Items (a) through (d)**.

a) Landscape irrigation to an extent which allows water to runoff the area being irrigated, specifically onto sidewalks and streets creating an undue, continuous flow of water.

b) Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios, or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of hand-held bucket or similar container, a hand-held hose equipped with a positive self-closing water shut-off device or a low-volume water broom, high-pressure cleaning machine equipped to recycle any water used. General maintenance cleaning shall be performed by other means, such as by using a broom.

c) Knowingly allowing water to leak through water connections, hoses, faucets, pipes, outlets, or plumbing fixtures.

d) Limits on washing vehicles: Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat, motor home, or trailer, whether motorized or not is prohibited, except by use of a hand-held bucket or similar container or a hand-held hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility that recycles water.

7) Landscape shall not be irrigated on the surface, except for hand watering and/or the use of a drip irrigation system, between the hours of 8:00 AM - 8:00 PM during the months of May, June, July, August, September, and October, unless a special permit is issued to accommodate newly planted material.

8) No water shall be provided to any structure hereafter constructed or remodeled unless the plumbing fixtures to be installed conform to requirements of law as to flow capacity.

c. Notice and Penalties for Violation of Water Use Restrictions Pursuant to Ordinance No. 93

1) Upon confirmation by the District of any violation of Ordinance No. 93, if in effect, the District shall provide written notice, along with educational materials to the owner of record and/or occupant. The notice shall be dated and shall specify the address, the nature of the violation, list the steps that must be taken to comply with Ordinance No. 93 and the name and telephone number of a District staff person from whom additional information can be obtained. In addition, the notice shall advise the owner/occupant that termination of water service will result from continued non-compliance. These provisions are for a first violation within any consecutive twelve month period.

2) If the owner/occupant fails to comply with the requirements of the notice pursuant to **Item (c)(1)** above, within a reasonable amount of time, a second violation shall occur and a second notice containing the information specified in **Item (c)(1)** shall be issued. The second violation shall impose a fine in an amount not to exceed fifty dollars ($50) and will be charged to and billed on the water user's account. If, under the discretion of the District, satisfactory progress is being made on steps to correct the violation, a second notice will not be issued.

3) If the owner/occupant fails to comply with the requirements of the notice pursuant to **Item (c)(2)** above, within a reasonable amount of time, a third violation shall occur and a third notice containing the information specified in **Item (c)(1)**shall be issued. The third violation shall impose a fine in an amount not to exceed two hundred dollars ($200) and will be charged to and billed on the water user's account.

The third notice shall also notify the owner/occupant that water service will be terminated within thirty (30) calendar days unless the owner/occupant is in compliance with the provisions of Ordinance No. 93. If the owner/occupant fails to comply with the provisions of Ordinance No. 93, the final notice of service termination shall be posted at the entrance to the dwelling/property, which indicates that water service shall be terminated in forty-eight (48) hours.

The District's General Manager shall have the authority to extend any deadlines by a period of time not to exceed an additional 30 days as set forth in Ordinance No. 93.

d. Appeal Process Under Ordinance No. 93

Should a property owner/occupant determined to be in violation of the provisions of Ordinance No. 93 dispute the findings of staff or if said property owner/occupant believes they have sufficient justification for said violation, said property owner/occupant may request a hearing with an appropriate committee of the Board of Directors. The hearing shall be scheduled within thirty (30) calendar days of the request. The hearing shall be attended by the District's General Manager or a designated representative of the General Manager.

The District's General Manager or a designated representative of the General Manager shall mail the property owner/occupant a written decision within ten (10) calendar days of the hearing. If the property owner/occupant is dissatisfied with the outcome of the hearing, the property owner/occupant may request the matter be placed on the agenda of the District's regularly scheduled Board Meeting. The

property owner/occupant may then make his or her petition to the Board of Directors. The Board's determination shall be final.

2. Ordinance No. 100

a. Summary

On January 11, 2016, the District adopted *Ordinance No. 100 Ordinance of the Board of Directors of the Indian Wells Valley Water District, Kern and San Bernardino Counties, California, Rescinding Ordinance Number 97 in its Entirety and Adopting Emergency Water Conservation Mandatory Restrictions*, a copy of which is included in **Appendix M** herein. Ordinance No. 100 includes provisions for compliance with the mandatory restrictions imposed by the SWRCB's emergency water conservation regulations. Ordinance No. 100 supersedes Ordinance No. 93 until such time that Ordinance No. 100 is rescinded by the District's Board. **Ordinance No. 100 is currently superseded by Ordinance No. 103, until such time that Ordinance No. 103 is rescinded by the District's Board of Directors.**

The water use restrictions set forth in Ordinance No. 100 are described below.

b. Water Use Restrictions Pursuant to Ordinance No. 100

The following water use restrictions are in effect in accordance with Ordinance No. 100 (until rescinded by the District's Board of Directors):

1) No water user shall waste water. For the purposes of this section, "waste" includes the following and is prohibited:

a) Landscape irrigation to an extent which allows water to runoff the landscape area being irrigated, specifically onto sidewalks and streets creating an undue, continuous flow of water.

b) Washing down hard or paved surfaces, including but not limited to sidewalks, walkways, driveways, parking areas, tennis courts, patios or alleys, is prohibited except when necessary to alleviate safety or sanitary hazards, and then only by use of handheld bucket or similar container, a handheld hose equipped with a positive self-closing water shut-off device or a low-volume water broom, high-pressure cleaning machine equipped to recycle any water used. General maintenance cleaning shall be performed by other means, such as by using a broom.

c) Knowingly allowing water to leak through water connections, hoses, faucets, pipes, outlets, or plumbing fixtures.

d) Limits on washing vehicles: Using water to wash or clean a vehicle, including but not limited to any automobile, truck, van, bus, motorcycle, boat, motor home, or trailer, whether motorized or not is prohibited, except by use of a handheld bucket or similar container or a handheld hose equipped with a positive self-closing water shut-off nozzle or device. This subsection does not apply to any commercial car washing facility that recycles water.

2) During the months of April, May, June, July, August, September, and October, all customers of the District (including residential, commercial, public, and industrial) with even-numbered addresses may only operate irrigation systems on Tuesday, Thursday, and Saturday, and odd-numbered addresses may only operate irrigation systems on Wednesday, Friday, and Sunday. Irrigation systems may not be operated on Mondays. Landscape Areas shall not be irrigated on the surface, except for hand watering and/or the use of a drip irrigation system, between the hours of 8:00 AM - 8:00 PM, unless a special permit is issued to accommodate newly planted material.

During the months of November, December, January, and February, all customers of the District (including residential, commercial, public, and

industrial) with even-numbered addresses may only operate irrigation systems on Saturday and odd-numbered addresses may only operate irrigation systems on Sunday. Irrigation systems may not be operated on Mondays, Tuesdays, Wednesdays, Thursdays, or Fridays. There will be no daytime watering restrictions during these months.

3) Turf or ornamental landscapes shall not be irrigated during the 48 hours following measurable precipitation.

4) Restaurants and other food service establishments shall only serve water to customers upon request by customer.

5) Operators of hotels and motels shall provide guests with the option of choosing not to have towels and linens laundered daily and prominently display notice of this option.

6) Operating a fountain or Decorative Water Feature is prohibited, unless the water is part of a recirculating system.

7) No water service shall be provided to any structure hereafter constructed or remodeled unless the plumbing fixtures to be installed conform to the requirements of law as to flow capacity.

8) The District's General Manager or designee may provide health and safety exceptions with regards to mandatory measures on a case by case basis.

c. Notice and Penalties for Violation of Water Use Restrictions Pursuant to Ordinance No. 100

Upon confirmation by the District of any violation of Ordinance No. 100, the District shall provide written notice (warning) to the owner of record, and/or occupant, and/or property manager (owner/occupant/manager). The notice shall be dated and shall specify the address, the nature of the violation, list the steps that must be taken to comply with the water use restrictions, and the name and

telephone number of a District staff person from whom additional information can be obtained. In addition, the notice shall advise the owner/occupant/manager that termination of water service may result from continued non-compliance. These provisions are for a first violation of the water use restrictions.

Once a warning has been issued to any owner/occupant/manager, they shall be considered duly informed of the District's mandatory restrictions pursuant to Ordinance 100, and any future violations shall be subject to the provisions in **Items (1) through (4)** below.

1) If the owner/occupant/manager fails to comply with the requirements of the written notice described above, within a reasonable amount of time but not less than two weeks, a second violation shall occur and the District shall provide a second written notice to the owner/occupant/manager. The notice shall be dated and shall specify the address, the nature of the violation, list the steps that must be taken to comply with the water use restrictions, how to obtain educational water conservation materials electronically, and the name and telephone number of a District staff person that can provide additional information including hard copies of educational water conservation materials. In addition, the notice shall advise the owner/occupant/manager that a monetary fine in the amount of fifty dollars ($50) shall be imposed for a third violation of the water use restrictions and that termination of water service may result from continued non-compliance.

2) If the owner/occupant/manager fails to comply with the requirements of the notice given pursuant to **Item (1)** above, within a reasonable amount of time but not less than two weeks, a third violation shall occur and a third notice containing the date, the address, the nature of the violation, and the steps that must be taken to comply with the water use restrictions shall be issued. The third notice shall further advise the owner/occupant/manager that a fine in the amount of two hundred dollars ($200) shall be imposed for a fourth violation of the water use restrictions. The third violation shall impose a fifty dollar ($50) fine charged to and billed on the water user's

account. This fine shall be subject to the District's delinquent charges section, as described in the current Water Sales and Service Policy Manual (refer to **Appendix M** herein). If, in the sole discretion of the District, satisfactory progress is being made on steps to correct the violation, a third notice will not be issued.

3) If the owner/occupant/manager fails to comply with the requirements of the notice given pursuant to **Item (2)** above, within a reasonable amount of time but not less than two weeks, a fourth violation shall occur and a fourth notice containing the date, the address, the nature of the violation, and the steps that must be taken to comply with the water use restrictions shall be issued. The fourth violation shall impose a two hundred dollar ($200) fine charged to and billed on the water user's account on a monthly basis until the violation(s) ceases. This fine shall be subject to the District's delinquent charges section as described in the current Water Sales and Service Policy Manual (refer to **Appendix M** herein).

4) If the owner/occupant/manager fails to comply with the requirements of the notice given pursuant to **Item (3)** above, resulting in repeated and significant water loss as determined by the District, the District may terminate water service within ten (10) calendar days unless the owner/occupant/manager is in compliance with the water use restrictions. If the owner/occupant/manager fails to comply with the water use restrictions, then the final notice of service termination, subject to the District's current 48-hour notice of termination charge, shall be posted at the entrance to the dwelling/property stating that water service shall be terminated in forty-eight (48) hours.

Service may only be restored if the violation has been corrected. Owner/occupant/manager will be required to pay all fines and penalties previously assessed, plus a service reinstatement charge per the Customer Service Charges section of the current Water Sales and Service Policy Manual (refer to **Appendix M** herein).

d. Appeal Process Under Ordinance No. 100

Should an owner/occupant/manager determined to be in violation of the water use restrictions set forth in Ordinance No. 100 dispute the findings of staff or if said owner/occupant/manager believes they have sufficient justification for said violation, said owner/occupant/manager may request a hearing with an appropriate committee of the Board of Directors. The hearing shall be scheduled within thirty (30) calendar days of the request. The hearing shall be attended by the District's General Manager or a designated representative of the General Manager.

The District's General Manager or a designated representative of the General Manager shall mail the owner/occupant/manager a written decision within ten (10) calendar days of the hearing. If the owner/occupant/manager is dissatisfied with the outcome of the hearing, the owner/occupant/manager may request the matter be placed on the agenda of the District's regularly scheduled Board Meeting. The owner/occupant/manager may then make his or her petition to the Board of Directors. The Board's determination shall be final.

e. Administrative Exceptions Under Ordinance No. 100

The General Manager of the District or District's designee may provide administrative exceptions to the landscape and irrigation plan requirements of Ordinance No. 100 on a case by case basis.

The General Manager of the District or designee will notify the City Manager of any administrative exemption granted pursuant to Ordinance No. 100 prior to the date the exception becomes effective.

The City Manager or designee after consultation with and approval from the General Manager of Indian Wells Valley Water District may grant an administrative exception.

3. Ordinance No. 103

a. Summary

On September 11, 2017, the District adopted *Ordinance No. 103 Ordinance of the Board of Directors of the Indian Wells Valley Water District, Kern and San Bernardino Counties, California, Rescinding Ordinance Number 100 in its Entirety and Adopting Emergency Water Conservation Mandatory Restrictions*, a copy of which is included in **Appendix M** herein. Ordinance No. 103 includes provisions for compliance with the mandatory restrictions imposed by the SWRCB's emergency water conservation regulations. Ordinance No. 103 supersedes Ordinance No. 100 until such time that Ordinance No. 103 is rescinded by the District's Board. **Ordinance No. 100 is currently superseded by Ordinance No. 103, until such time that Ordinance No. 103 is rescinded by the District's Board of Directors.**

The water use restrictions set forth in Ordinance No. 103 are identical to those described in Ordinance No. 100, except with regard to landscape irrigation restrictions during the months of November through February. Ordinance No. 103 allows for landscape irrigation on three days per week (alternating days for even- and odd-numbered addresses), while Ordinance No. 100 allowed for landscape irrigation only one day per week (on different days for even- and odd-numbered addresses).

Ordinance No. 103 states the following with regard to irrigation during the months of November through February:

"During the months of November, December, January, and February, all customers of the District (residential/commercial/public/industrial) with even-numbered addresses may only operate irrigation systems on Tuesday, Thursday and Saturday and odd numbered addresses may only operate irrigation systems on Wednesday, Friday and Sunday. Irrigation systems may not be operated on Mondays. Landscape Areas may be irrigated by hand watering and/or the use of a drip

irrigation system at any time. There will be no daytime watering restriction during these months."

For comparison, Ordinance No. 100, currently rescinded, states the following with regard to irrigation during the months of November through February: "**During the months of November, December, January, and February**, all customers of the District (including residential, commercial, public, and industrial) with even-numbered addresses may only operate irrigation systems on Saturday and odd-numbered addresses may only operate irrigation systems on Sunday. Irrigation systems may not be operated on Mondays, Tuesdays, Wednesdays, Thursdays, or Fridays. There will be no daytime watering restrictions during these months."

B. METERING

All of the District's customers have metered connections tied to the District's Automated Metering Infrastructure (AMI) system.

C. CONSERVATION PRICING

The District's tiered rate structure is set forth in the *Indian Wells Valley Water District Water Sales & Service Policy Manual* (Ordinance No. 104), a copy of which is included in **Appendix M** herein. The rate structure is organized into usage tiers based on quantity, meter size, and connection type. The quantities of water designated in **Table 21** and Ordinance No. 104 are given in units of hundred cubic feet (HCF), which is the standard measurement for all District water deliveries and is indicated on the District's water bills and water meters. One HCF is equivalent to 748 gallons of water.

TABLE 21
USE ALLOTMENT PER TIER IN HUNDRED CUBIC FEET (HCF)
PER ORDINANCE NO. 104 - WATER SALES AND SERVICE POLICY MANUAL

SINGLE FAMILY RESIDENCE:

Tier	All Meter Sizes
Tier 1	0 - 9
Tier 2	9.01 - 24
Tier 3	24.01 - 45
Tier 4	45.01 and Over

TABLE 21 USE ALLOTMENT PER TIER IN HUNDRED CUBIC FEET (HCF) PER ORDINANCE NO. 104 - WATER SALES AND SERVICE POLICY MANUAL				
NON-SINGLE FAMILY RESIDENCE:				
Tier	**3/4" Meter**	**1" Meter**	**1-1/2" Meter**	**2" Meter**
Tier 1	0 - 9	0 - 15	0 - 30	0 - 48
Tier 2	9.01 - 24	15.01 - 40	30.01 - 80	48.01 - 128
Tier 3	24.01 - 45	40.01 - 75	80.01 - 150	128.01 - 240
Tier 4	45.01 and Over	75.01 and Over	150.01 and Over	240.01 and Over
NON-SINGLE FAMILY RESIDENCE:				
Tier	**3" Meter**	**4" Meter**	**6" Meter**	**8" Meter**
Tier 1	0 - 96	0 - 150	0 - 300	0 - 690
Tier 2	96.01 - 256	150.01 - 400	300.01 - 800	690.01 - 1280
Tier 3	256.01 - 480	400.01 - 750	800.01 - 1500	1280.01 - 2400
Tier 4	480.01 and Over	750.01 and Over	1500.01 and Over	2400.01 and Over

D. PUBLIC EDUCATION AND OUTREACH

The District provides free water conservation reference materials at its office. In addition, the District's website (www.iwvwd.com/conservation) features descriptions of, and links to, the District's conservation ordinances, along with additional educational and reference materials and resources pertaining to xeriscaping and water efficient landscaping, proper maintenance of evaporative coolers, and installation and covering of pools and spas, and a phone number for questions and assistance.

E. ADDITIONAL CONSERVATION

In 2017, the District began implementing a flushing program utilizing the Neutral Output-Discharge Elimination System (NO-DES) flushing and filtration system with technology from the company NO-DES, Inc. NO-DES involves flushing system pipelines and keeping the water contained within the system, resulting in no loss of potable water. During the first year of operating this system, the District saved over 3 million gallons of potable water, and has saved over 8 million gallons to date.

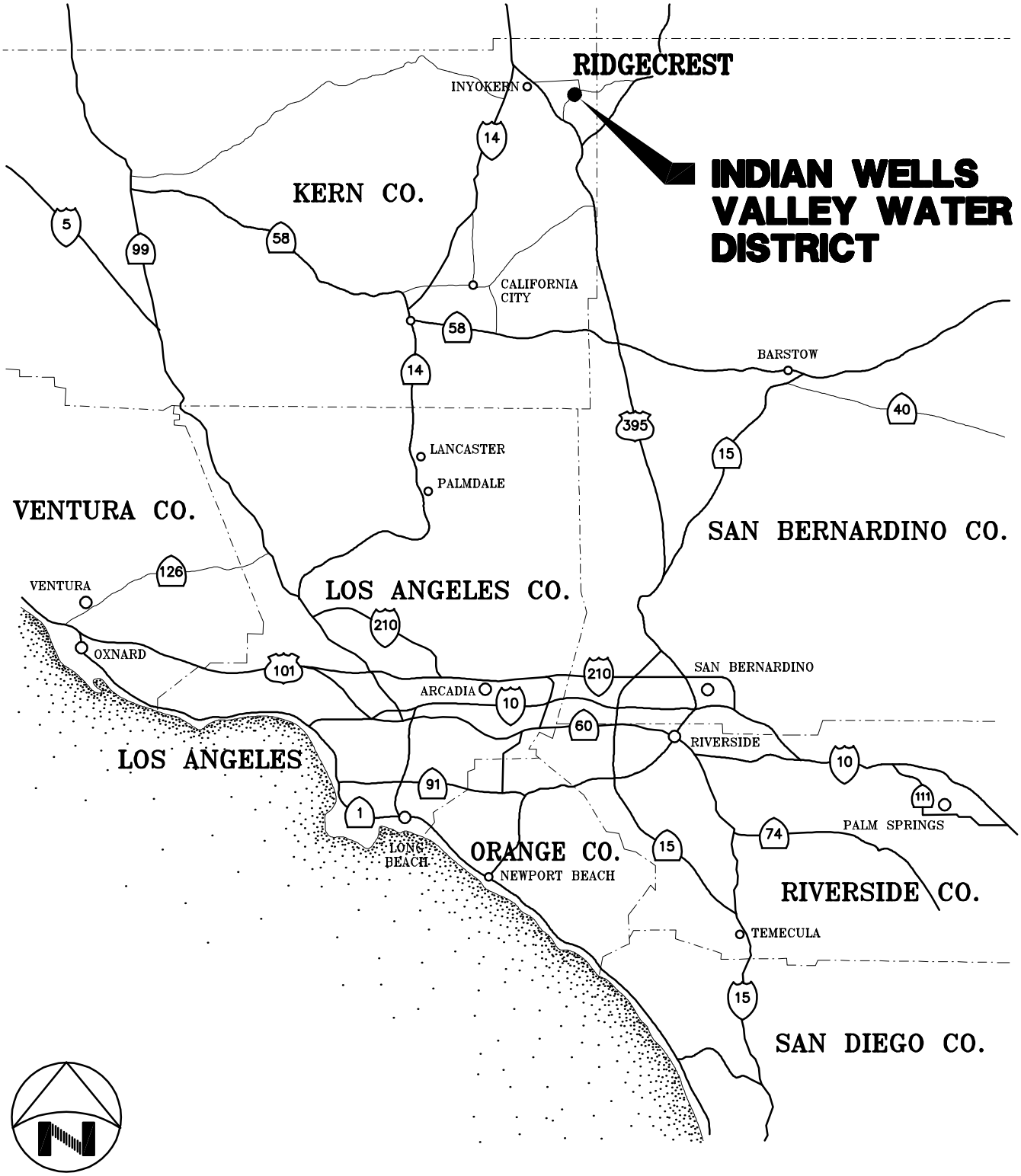
F. PROGRAMS TO ASSESS AND MANAGE DISTRIBUTION SYSTEM REAL LOSS

The District continuously monitors the operation of its reservoirs, wells, and pumping stations using its Supervisory Control and Data Acquisition (SCADA) system, and routinely evaluates the system for leaks, which are promptly repaired upon discovery.

G. WATER CONSERVATION PROGRAM COORDINATION AND STAFFING SUPPORT

The District's water conservation program is coordinated by the District's Chief Financial Officer (who oversees Field Services, Customer Services, metering, and AMI). The program is estimated to spend approximately $11,807 for fiscal year 2021 and has a budget of $13,700 for fiscal year 2022.

FIGURES



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INDIAN WELLS VALLEY WATER DISTRICT

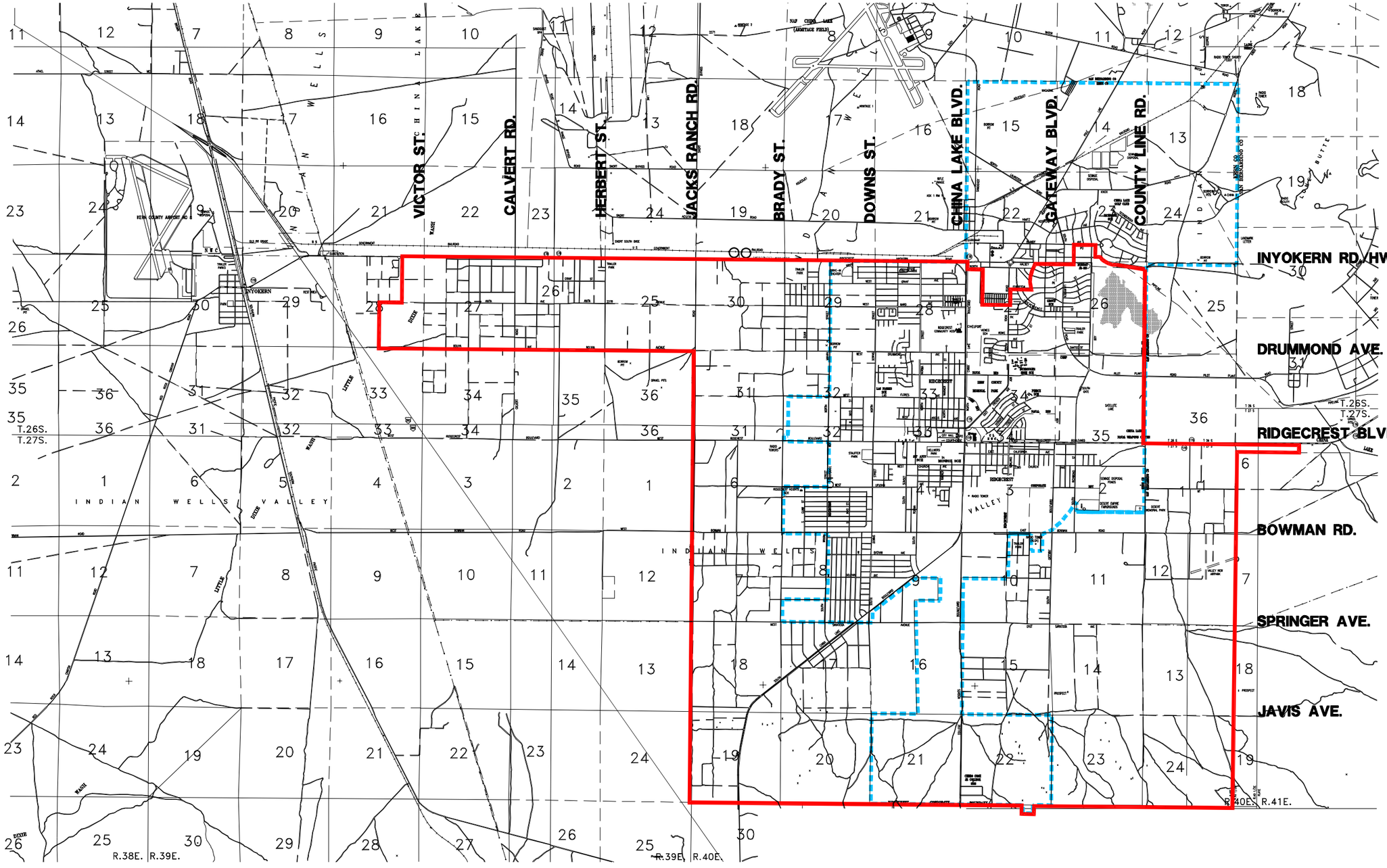
2020 URBAN WATER MANAGEMENT PLAN

VICINITY MAP

FIGURE 1 OF 2

SCALE: N.T.S. DATE: 07/19/21 DRAWN BY: SPK CHECKED BY: VEM W.O.: 178-64.6

178-64p6f1.dwg



LEGEND

- INDIAN WELLS VALLEY WATER DISTRICT BOUNDARY
- CITY OF RIDGECREST BOUNDARY

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

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INDIAN WELLS VALLEY WATER DISTRICT

2020 URBAN WATER MANAGEMENT PLAN

DISTRICT SERVICE AREA BOUNDARY

SCALE: 1"=6000' DATE: 07/19/21 DRAWN BY: SPK CHECKED BY: VEM W.O.: 178-64.6

FIGURE 2 OF 2

178-64p6f2.dwg