# 2020 PART 2: LOCAL AGENCY UWMPs

UPPER SANTA ANA RIVER WATERSHED

# INTEGRATED REGIONAL URBAN WATER MANAGEMENT PLAN

SOUTH MESA WATER COMPANY

# 2020 IRUWMP

## Part 2 Chapter 9

## SMWC 2020 UWMP

**JUNE 30, 2021**

Prepared by Water Systems Consulting, Inc.

WSC

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RETAIL URBAN WATER MANAGEMENT PLAN

# 9 South Mesa Water Company

**This chapter describes information specific to the South Mesa Water Company, its supplies, demands and water use efficiency programs. The information and analysis in this chapter is supplemental to the regional information presented in Part 1 of the 2020 IRUWMP and is provided to meet the South Mesa Water Company's reporting requirements for 2020 under the UWMP Act[1].**

## 9.1 System Description

South Mesa Water Company (SMWC) is a mutual water company, which was established in 1912 as a successor to the earliest land and water companies in the area dating back to 19th Century. SMWC provides domestic and irrigation water service to its shareholders within its service territory, which comprises a portion of the City of Yucaipa in San Bernardino County and a portion of the City of Calimesa in Riverside County. SMWC currently supplies water to just under 3,000 water service connections but anticipates exceeding that level in the very near future. SMWC's water supply includes locally produced groundwater from the Yucaipa Sub-basin (DWR 8-02.07), and also groundwater produced from the adjacent adjudicated portion of the San Timoteo Sub-basin (DWR 8-02.08) in accordance with SMWC's adjudicated water rights.

IN THIS SECTION


- System Description
- Water Use and SBX7-7 Compliance
- Water Supply
- Water Service Reliability and Drought Risk Assessment
- Water Shortage Contingency Plan Summary
- Demand Management Measures
- Adoption, Submittal, and Implementation


[1] This chapter was prepared by SMWC and its consultant, Land Engineering Consultants, Inc.

The service area is approximately 50% built-out with ongoing developments under construction or being approved by the planning departments of the governing agencies. The majority of the population in the service area is from the City of Yucaipa at 55% and City of Calimesa at 45%.

The SMWC service area consists of various land uses, while the majority of the current use is single-family and multi-family residential. Within the near future, the area anticipates growth in industrial and commercial development, as well as, continued growth in residential development.

SMWC's primary water uses go toward single-family and multi-family households within many lower income communities. Water is currently obtained entirely by pumping from local groundwater sources; however, additional sources can easily made available to SMWC if needed. SMWC has plans in development to improve the water system capabilities in order to keep up with future needs and requirements. Water shortage and disaster concerns have been mitigated through the development of a Water Shortage Contingency Plan, Emergency Response Plan, and additional emergency preparedness facilities and procedures.

SMWC's service area is shown in **Figure 9-1**.

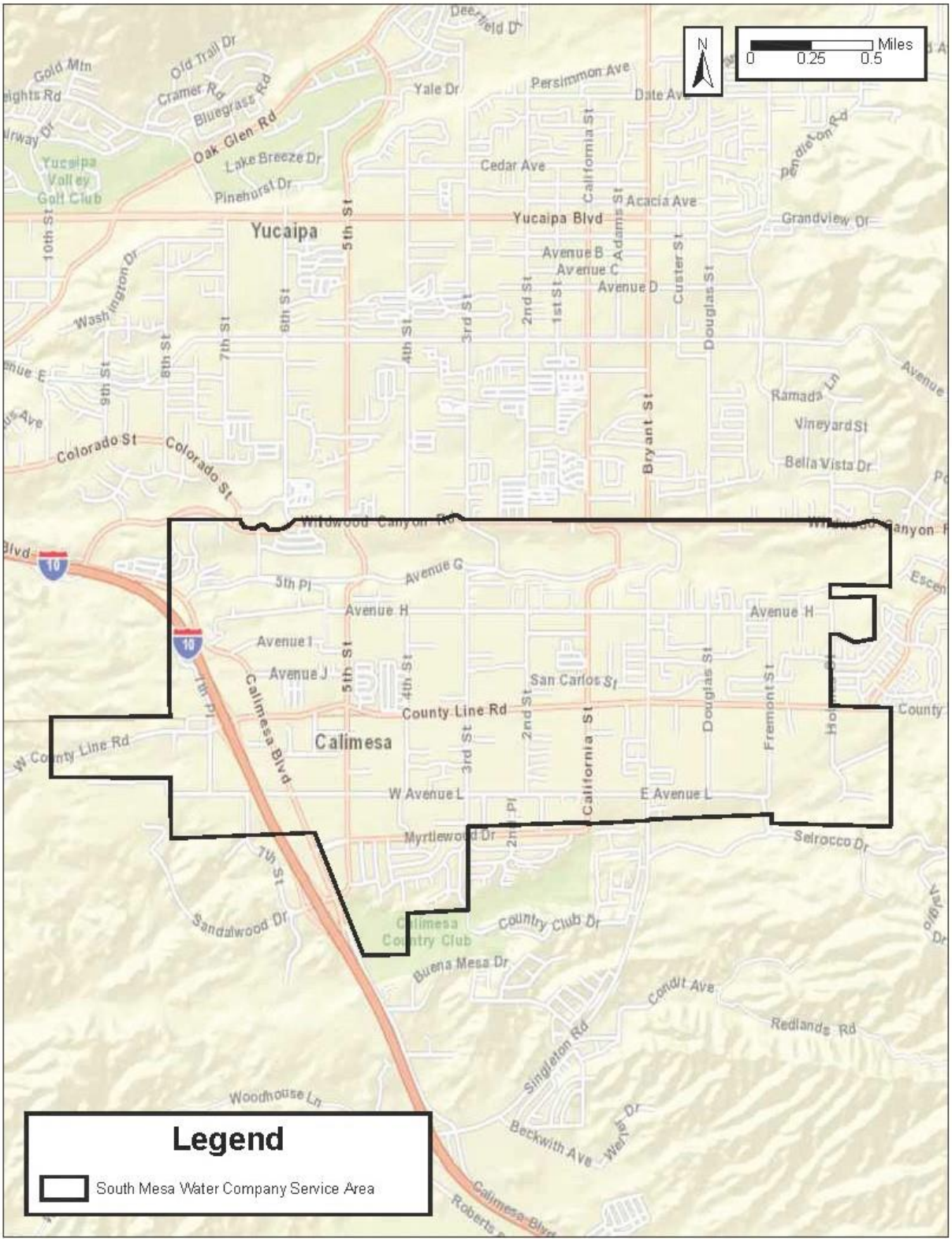


**Figure 9-1: South Mesa Water Company Service Area Map**

**Certain boundaries of SMWC's service area are presently a subject of litigation in the matter, captioned: Yucaipa Valley Water District v. South Mesa Water Company, San Bernardino Superior Court Case No: CIVDS2009681.*

The regional climate, which includes SMWC's service area, is described in **Part 1, Chapter 2** of the 2020 IRUWMP.

### 9.1.1 Population

The following gives a brief explanation for each of the components used to calculate the anticipated population growth rate within SMWC's service area:

**City of Yucaipa Population Data – The city's web portal indicates the following:**

*"With a population of 51,376 as of the 2010 Census, Yucaipa is the 16th most populous of the 24 cities in San Bernardino County. Yucaipa has had relatively steady population growth. From 1950 to 1970, Yucaipa increased by about 5,500 residents each decade. Population growth accelerated to about 9,000 residents per decade for the next 30 years. The largest increase was between 2000 and 2010, when Yucaipa's population increased 25 percent due to the real estate boom and building of new subdivisions. Looking forward, Yucaipa is expected to build out to a population of 75,000 residents".*

> Based upon the published indicated above, together with those reported of 41,207 in year 2000, 51,376 in year 2010, and about 53,100 in year 2014, for purposes of this estimate SMWC will use a base population amount of 53,531 in base year 2015.

**City of Calimesa Population Data – The city's web portal indicates the following:**

*"The population at the time of incorporation, according to the 1990 Census, was 6,659. Growth over the next 20 years was slow: the 2010 Census showed a population of 7,879, an average growth rate of just 61 persons each year. A majority of the future growth expected to occur over the next 22 years will likely be accommodated in the adopted specific plan areas."*

> Based upon the published population data and projections indicated above, for purposes of this estimate SMWC will use a base population amount of 8,184 in base year 2015.

**Southern California Region (RTP/SCS) – This Regional Growth Forecast (RTP/SCS) provides for known growth measured to year 2012, with projections for growth from year 2016 through year 2040 as described below:**

*"Regional Growth Forecast: Southern California Associated Governments (SCAG) projects that the region will add 3.8 million residents, 1.5 million households, and 2.4 million jobs over the RTP/SCS planning horizon (2012-2040). Population and households are projected to grow at the annual average growth rate of 0.7% during the same period, while employment grows faster at 2 percent until 2020, and then stabilizes at 0.7 percent. The SCAG region's population is projected to grow slower than that of the previous years. The slow growth pattern is not present*

*only in the SCAG region, but is also observed from US and California population projections by US Census Bureau and California DOF, respectively. The slow population growth pattern experienced in the post-recession period is expected to continue into the future. Between 2015 and 2040, the annual population growth rate will be only 0.7 percent, which is similar to the post-recession period, but much lower than that experienced between 2000-2010. The region will grow mainly through natural increase. Nearly nine-tenths of the population growth will be due to natural increase (e.g., births minus deaths) in the region rather than net migration (e.g., in-migration minus out-migration).”*

South Mesa Water Company Territory Land Use – For base year 2015, SMWC studied its land uses within its four (4) water pressure zones. The review identified a total of 4,068 residential units consisting of 2,881 single family homes and 1,283 mobile homes / senior units. Of the 1,283 units, 368 reside in all age parks. Using the total number of units indicated above and applying the most current U.S. Census Bureau data from year 2010 of 2.36 persons per household, the base population computes to approximately 9,600 persons within SMWC as of the base year 2015. For purposes of estimating the population growth forward, SMWC uses the Regional Growth Forecast (RTP/SCS) of 0.7% per year. Please note that commercial, industrial and institutional development is not made part of the population estimate, and that anticipated increases in water demand associated with buildout, including residential, commercial, industrial and institutional development, are evaluated in accordance with applicable land use designations and regional growth forecasts and buildout as discussed above. These growth rates were used to estimate future population in the service area; these values are shown in **Table 9-1.**

**Table 9-1: DWR 3-1R Current and Projected Population**

| POPULATION SERVED | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|---|
| Total | 9,941 | 10,294 | 10,659 | 11,037 | 11,429 | 11,835 |

## 9.2 Water Use

This section describes the current and projected water uses within SMWC’s service area. SMWC serves potable water only at this time.

### 9.2.1 Water Use by Sector

SMWC categorizes customers as residential, multi-family, commercial, landscape irrigation and industrial. Water deliveries for each customer class for the years 2016 through 2020 are shown in **Table 9-2.**

**Table 9-2: SMWC 2016-2020 Connections by Customer Class**

| CUSTOMER CLASS | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Residential | 2,548 | 2,560 | 2,565 | 2,568 | 2,573 |
| Multi-Family | 223 | 231 | 239 | 240 | 241 |
| Commercial | 144 | 143 | 141 | 142 | 145 |
| Landscape | 19 | 20 | 20 | 18 | 19 |
| Industrial | 1 | 1 | 1 | 1 | 1 |
| **Total** | **2,935** | **2,955** | **2,966** | **2,969** | **2,979** |

#### 9.2.1.1 Past Water Use

SMWC's water use by customer class from 2016-2020 is shown in **Table 9-3** and water consumption by customer class in the last five years is shown in **Figure 9-2.** Approximately 61% of SMWC's deliveries were to single family residential connections, followed by 18% to multi-family connections, 11% to commercial connections, 3% to landscape connections, less than 1% to industrial, and the remainder is shown as water losses.

**Table 9-3: 2016-2020 Actual Water Use (AFY)**

| CUSTOMER CLASS | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|
| Residential | 1404 | 1478 | 1353 | 1197 | 1387 |
| Multi-Family | 336 | 327 | 608 | 366 | 349 |
| Commercial | 258 | 270 | 253 | 214 | 242 |
| Landscape (School/Park) | 66 | 61 | 59 | 56 | 108 |
| Industrial | 1 | 2 | 1 | 1 | 1 |
| Water Losses | 151 | 239 | 91 | 184 | 183 |
| **Total** | **2216** | **2377** | **2365** | **2018** | **2270** |

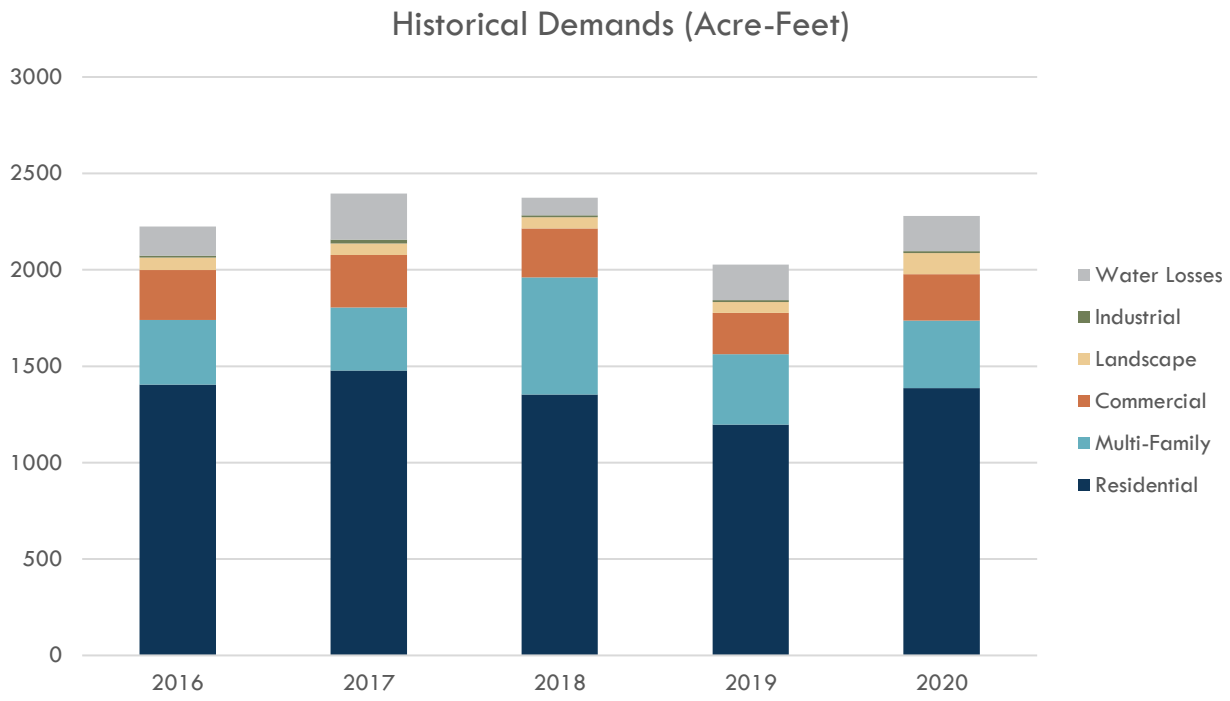


**Figure 9-2: SMWC 2016-2020 Water Consumption by Customer Class**

### 9.2.1.2 Distribution System Water Losses

Distribution system water losses are the physical potable water losses from the water system, calculated as the difference between water produced and the amount of water billed to customers plus other authorized uses of water.

**Sources of water loss for water systems generally include:**

- **Leaks from water lines** - Leakage from water pipes is a common occurrence in water systems. Small water leaks typically remain undetected for long periods of time but can contribute to the overall water loss. Aging pipes typically have more leaks.
- **Water used for flushing and fire hydrant operations**
- **Unauthorized uses or theft of water**
- **Customer Meter Inaccuracies** - Customer meters can under-represent actual consumption in the water system.

SMWC has not previously prepared an annual AWWA Water Audit because it did not meet the definition of an Urban Water Supplier. As SMWC is now serving nearly 3,000 connections, they will complete an AWWA Water Audit for upcoming years, once required, in accordance with reporting requirements to the State. Water loss is estimated based on the difference between production and consumption from 2016 to 2020, these values are shown in **Table 9-4.**

**Table 9-4: DWR 4-4R 12 Month Water Loss Audit Reporting (AF)**

| REPORT PERIOD START DATE | | VOLUME OF WATER LOSS* |
|---|---|---|
| MM | YYYY | |
| 1 | 2016 | 151 |
| 1 | 2017 | 239 |
| 1 | 2018 | 91 |
| 1 | 2019 | 184 |
| 1 | 2020 | 183 |

1. Water loss is estimated based on the difference between production and consumption.

In the past 5 years, SMWC's water loss has ranged from 4% - 11% of water sales. SMWC is committed to managing system water losses to reduce water waste and will endeavor to meet the future water loss performance standard that is being developed by the State Water Board. SMWC's programs to manage water loss are described in **Section 9.8.1.5**. These programs will increase the efficiency of the water distribution system by decreasing future water losses; however, water losses cannot be prevented entirely.

## 9.2.2 Projected Water Use

SMWC's customer metered use of 2,270-acre feet for calendar year 2020 has been used as a baseline for projections. To project metered use beyond 2020, SMWC is using the projected population growth rate of 0.7% per year, or 3.5% per 5-year period, and an additional estimated water use growth rate of 0.3% per year, or 1.5% per 5-year period has been added for commercial, industrial and institutional developments for a total of 5.0% increase in water use per 5-year period.

This growth rate is applied to each customer type, then all of the category results are added to estimate the total future water use. Projected future demands by customer class as well as estimated losses are presented in **Table 9-5**, **Table 9-6,** and **Figure 9-3.**

**Table 9-5: DWR 4-2R Projected Demands for Water (AF)**

| - | ADDITIONAL DESCRIPTION | PROJECTED WATER USE | | | | |
|---|---|---|---|---|---|---|
| USE TYPE | | 2025 | 2030 | 2035 | 2040 | 2045 |
| Residential | | 1,456 | 1,529 | 1,606 | 1,686 | 1,770 |
| Multi-Family | | 366 | 385 | 404 | 424 | 445 |
| Commercial | | 254 | 267 | 280 | 294 | 309 |
| Landscape | schools/parks | 113 | 119 | 125 | 131 | 138 |
| Industrial | | 1 | 1 | 1 | 1 | 1 |
| Water Losses | | 188 | 198 | 208 | 218 | 229 |
| | **Total:** | **2,380** | **2,499** | **2,624** | **2,755** | **2,893** |

**Table 9-6: DWR 4-3R Total Gross Water Use (AF)**

| - | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|---|
| **Potable and Raw Water** From Table 4-1R and 4-2R | 2,270 | 2,380 | 2,499 | 2,624 | 2,755 | 2,893 |
| Recycled Water Demand* From Table 9-4R | - | - | - | - | - | - |
| **Total Water Use:** | **2,270** | **2,380** | **2,499** | **2,624** | **2,755** | **2,893** |

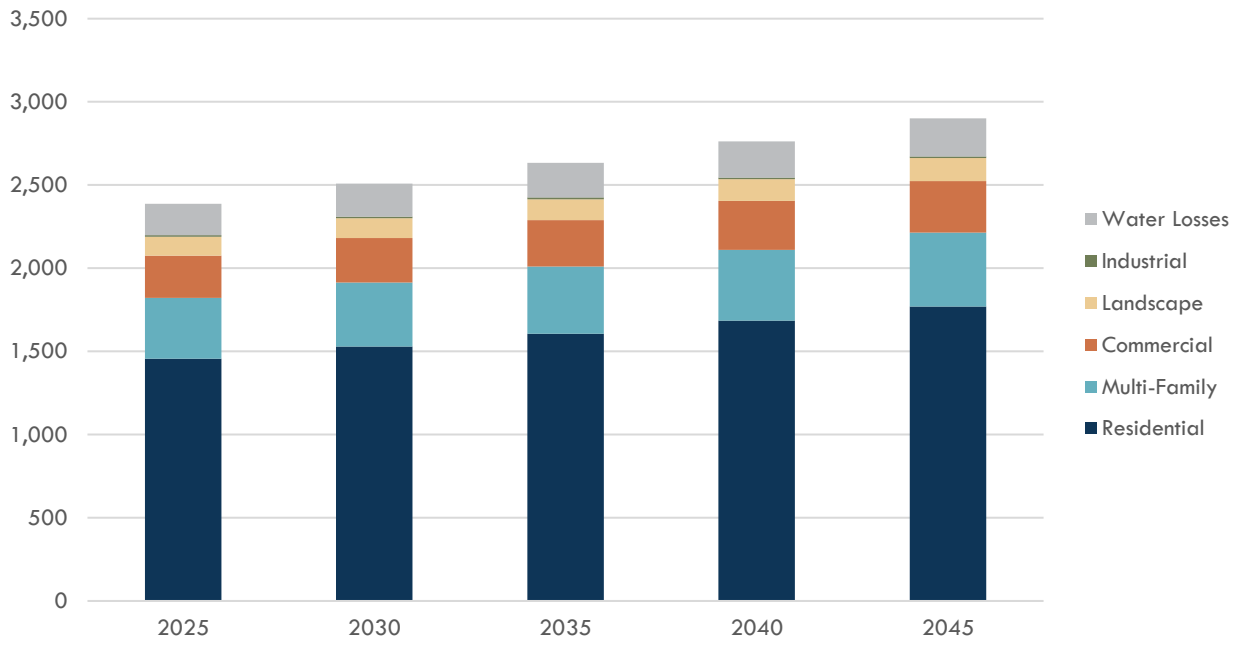


**Figure 9-3: SMWC Projected Future Water Consumption by Customer Class**

### 9.2.2.1 Estimating Future Water Savings

SMWC has elected not to incorporate demand reductions from future conservation programs and passive savings from codes and standards into the demand projections at this time. In 2018, the legislature enacted SB 606 and AB 1668, which provide for implementation of a water budget-based approach to establishing new urban water use objectives for water suppliers. The series of water use efficiency standards that will inform calculation of SMWC's new water use objective are still under development and will take effect in 2023. Once the new standards have been established, SMWC will reevaluate customer demands and identify approaches to comply with the new standard, which will be incorporated into the next UWMP prepared in 2025. The SMWC is committed to promoting water use efficiency and will continue to implement a

comprehensive set of programs intended to reduce customer demands and support sustainable use of regional water supplies.

### 9.2.3 Water Use for Lower Income Households

Senate Bill 1087 requires water use projections in an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier. The SMWC service area contains the lower income portions of the Cities of Calimesa and Yucaipa. It has been estimated that approximately 58% of projected demand goes to lower income households.

In the Spring of 2020, the State Water Resources Control Board indicated to SMWC that it did not qualify as a disadvantaged community for purposes of grant funding that is specially earmarked for DACs. Upon review of the census tracts that the SWRCB had reviewed regarding SMWC, it was noticed that two of the census tracts in the SMWC service area did not contain any data. SMWC then asked that an income survey be performed to get a better understanding of the economic status of the residents. The income survey as performed over a several month period by Kennedy Communications, Inc. entailed sending out an informational mailing from SMWC letting the residents know why the income survey was necessary. After the initial mailing, Kennedy Communications, Inc. sent out a letter, accompanied by the survey, describing the projects that SMWC wanted to build which would improve water reliability. The residents responded overwhelmingly. After scrubbing the data for duplicates or surveys which were incomplete, the Median Household Income (MHI) was determined to be $34,299 which qualified it as a severely disadvantaged community. SMWC is now recognized by the state of California as serving a community, having a MHI of 60% of the entire state.

### 9.2.4 Climate Change Considerations

A topic of growing concern for water planners and managers is climate change and the potential impacts it could have on California's future water supplies.

Recent climate change modeling for the SAR watershed suggests that a changing climate will have multiple effects on the Region. Adaptation and mitigation measures will be necessary to account for these effects. **Part 1 Chapter 2** includes an assessment of the potential impacts of climate change.

## 9.3 SBX7-7 Baseline and Targets

With the adoption of SBX7-7, also known as the Water Conservation Act of 2009, the State of California was required to reduce urban per capita water use by 20% by 2020. This section summarizes the past targets SMWC developed and demonstrates that compliance by 2020 was achieved.

Water use targets were developed in terms of gallons per capita per day, or GPCD, which is calculated by dividing the total water from all customer categories by the population.

DWR has prepared standardized tables to record and document the calculations required for this section. The standardized tables for SMWC's calculations are included in **Part 4, Appendix I-7.**

### 9.3.1 Baseline and Target

For the period from 2001 to 2010, the average base daily capita water use is 281 GPCD SMWC's calculated water use target for 2020 is 225 GPCD.

**Table 9-7: DWR 5-1R Baselines and Targets Summary**

| BASELINE PERIOD | START YEAR | END YEAR | AVERAGE BASELINE GPCD | CONFIRMED 2020 TARGET |
|---|---|---|---|---|
| 10-15 year | 2001 | 2010 | 281 | 225 |
| 5 year | 2006 | 2010 | 263 | |

### 9.3.2 2020 Compliance Daily Per-Capita Water Use (GPCD)

Through the implementation of its active water conservation program, SMWC has met its Confirmed Water use Target for 2020 of 225 GPCD, as shown in **Table 9-8.** To maintain this level of water use, SMWC intends to continue its current level of outreach and programs for the foreseeable future.

**Table 9-8: SBX 7-7 2020 Compliance**

| 2020 WATER USE TARGET GPCD | ACTUAL 2020 GPCD | SUPPLIER ACHIEVED TARGETED REDUCTION IN 2020? |
|---|---|---|
| 225 | 204 | Yes |

# 9.4 Water Supply

SMWC's water supply is comprised entirely of local groundwater.

## 9.4.1 Purchased or Imported Water

SMWC does not currently purchase imported SWP water or other supplies but is in the planning stages of obtaining rights to a recharge basin that would utilize SWP water.

## 9.4.2 Groundwater

SMWC produces groundwater from two different groundwater basins: the Yucaipa Sub-basin (DWR 8-02.07), and the adjudicated portion of the San Timoteo Sub-basin (DWR 8-02.08), known as the Beaumont Groundwater Basin. SMWC production wells draw water from two subareas often referred to as “sub-basins” within the Yucaipa Sub-basin: the Calimesa sub-basin and the Live Oak sub-basin. Detailed discussions of each groundwater basin and sub-basin, water rights and management are included in **Part 1, Chapter 3.**

SMWC currently has 8 active groundwater production wells. SMWC Wells 9, 11, 12, 16 and 17 extract drinking water from the Calimesa sub-area of the Yucaipa sub-basin. SMWC Wells 5 and 7, extract water from the Live Oak sub-area of the Yucaipa sub-basin. SMWC Well 4 extracts water from the adjudicated Beaumont Groundwater Basin.

SMWC has a storage account within the Beaumont Groundwater Basin which contains a water supply in the amount of approximately 10,000 AF.

SMWC’s historical groundwater production for the past five years is shown in **Table 9-9.**

**Table 9-9:DWR 6-1R Groundwater Pumped Last Five Years (AF)**

| GROUNDWATER TYPE | LOCATION OR BASIN NAME | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|
| Alluvial Basin | Yucaipa Sub-basin (DWR 8-02.07) | 1,863 | 2,009 | 2,001 | 1,718 | 2,041 |
| Alluvial Basin | San Timoteo Sub-basin (DWR 8-02.08) (Beaumont Groundwater Basin) | 353 | 368 | 365 | 300 | 229 |
| | **Total:** | **2,216** | **2,377** | **2,366** | **2,018** | **2,270** |

## 9.4.3 Surface Water

SMWC currently has no plans for future use of surface water supplies. SMWC is in the planning stages of developing recharge sites to accommodate supplemental water for storage in the future.

### 9.4.4 Stormwater

SMWC is participating in regional project planning efforts to capture additional stormwater for purposes of groundwater recharge to increase sustainability of the basins SMWC produces water from. These regional projects are discussed in **Part 1 Chapter 3.**

### 9.4.5 Wastewater and Recycled Water

Yucaipa Valley Water District (YVWD) provides wastewater collection and treatment for the area in which SMWC serves water.

The Henry N. Wochholz wastewater treatment plant, as described by YVWD in the 2015 UWMP, includes the following major components:

Septage receiving station, headworks grit removal system, primary equalization tank, secondary treatment system, advanced tertiary treatment facilities, reverse osmosis, recycled water storage reservoir. Wastewater is conveyed to the plant through 120 miles of gravity sewer pipeline and five pump stations.

Information about wastewater collected and treated is presented in **Table 9-10.**

#### 9.4.5.1 Potential, Current, and Projected Recycled Water Uses

SMWC does not currently serve recycled water to its customers, but it has developed plans to do so including through coordination with other water agencies.

**Table 9-10: DWR 6-2R Wastewater Collected within Service Area in 2020 (AF)**

| WASTEWATER COLLECTION | | | RECIPIENT OF COLLECTED WASTEWATER | | | |
|---|---|---|---|---|---|---|
| NAME OF WASTEWATER COLLECTION AGENCY | WASTEWATER VOLUME METERED OR ESTIMATED | WASTEWATER VOLUME COLLECTED FROM UWMP SERVICE AREA IN 2020 | NAME OF WASTEWATER AGENCY RECEIVING COLLECTED WASTEWATER | WASTEWATER TREATMENT PLANT NAME | WASTEWATER TREATMENT PLANT LOCATED WITHIN UWMP AREA | WWTP OPERATION CONTRACTED TO A THIRD PARTY |
| Yucaipa Valley Water District | Estimated | 835 | Yucaipa Valley Water District | Henry N. Wochholz WWTP | No | No |
| - | **Total:** | **835** | | | | |

## 9.4.6 Water Exchanges and Transfers

SMWC does not anticipate in regular or long-term transfers or exchanges, during the period covered by this Plan. Any transfer or exchanges would be as-needed related to an emergency.

### 9.4.6.1 Emergency Interties

SMWC has an "Emergency Inter-Tie" with YVWD.

Emergency Inter-Ties: Yucaipa Valley Water District - 1,000 to 1,500 gpm

To date, SMWC has not received any water from the inter-tie but has delivered water to YVWD.

## 9.4.7 Future Water Projects

SMWC is currently in planning and engineering stages with several projects, those being area wide water line infrastructure replacement, booster station replacement, and forward planning for upcoming capacity increases through new reservoir construction. These projects vary throughout the service area and are in various stages of planning and pre-construction. Notably and pending state funding, SMWC has developed plans to upgrade major transmission and distribution lines through a significant portion of County Line Road.

SMWC also has plans to utilize the state water project to convey water to planned recharge basin facilities, develop additional groundwater wells, recharge basins, and system wide line replacements to increase the available water supplies.

## 9.4.8 Summary of Existing and Planned Sources of Water

SMWC's water supply is comprised entirely of local groundwater and will continue to be for this plan period.

As discussed in **Part 1 Chapter 5**, SMWC is applying a Reliability Factor of 15% to its supply reliability analysis to account for uncertainties in supply and demand projections. The 15% value is recommended in a study by the RAND Corporation that evaluated uncertainty factors in the regional supplies and demands, including population growth, per capita water use, climate change impacts on supplies and demands, SWP project supplies and local surface water supplies. See **Part 1 Chapter 5** for more details on how the Reliability Factor was established.

For the purposes of normal year supply projections in this 2020 IRUWMP, SMWC is using the 15% Reliability Factor to establish a supply target of 15% more than total projected demand.

The volume of water utilized from each source in 2020 is summarized in **Table 9-11** and projected supply by source is summarized in **Table 9-12.**

**Table 9-11. DWR 6-8R Actual Water Supplies in 2020 (AF)**

| - | | 2020 | | |
|---|---|---|---|---|
| **WATER SUPPLY** | **ADDITIONAL DETAIL ON WATER SUPPLY** | Actual Volume | Water Quality | Total Right or Safe Yield |
| Groundwater (not desalinated) | Yucaipa Sub-basin (DWR 8-02.04) | 2,041 | Drinking Water | See Note |
| Groundwater (not desalinated) | San Timoteo Sub-basin (DWR 8-02.08) (Beaumont Groundwater Basin | 229 | Drinking Water | See Note |
| **-** | **Total:** | **2,270** | | |

See Part 1 Chapter 3 for discussion of Rights and Safe Yield

**Table 9-12. DWR 6-9R Projected Water Supplies (AF)**

| | | PROJECTED WATER SUPPLY | | | | |
|---|---|---|---|---|---|---|
| | | 2025 | 2030 | 2035 | 2040 | 2045 |
| **WATER SUPPLY** | **ADDITIONAL DETAIL ON WATER SUPPLY** | **REASONABLY AVAILABLE VOLUME** | **REASONABLY AVAILABLE VOLUME** | **REASONABLY AVAILABLE VOLUME** | **REASONABLY AVAILABLE VOLUME** | **REASONABLY AVAILABLE VOLUME** |
| Groundwater (not desalinated) | Yucaipa Sub-basin | 2,409 | 2,528 | 2,656 | 2,788 | 2,928 |
| Groundwater (not desalinated) | San Timoteo Sub-basin (DWR 8-02.08) (Beaumont Groundwater Basin) | 328 | 345 | 362 | 380 | 399 |
| | **Total:** | **2,737** | **2,873** | **3,018** | **3,168** | **3,327** |

Supplies shown in this table are planned pumping, increased to meet the Total Supply Target with 15% Reliability Factor.

### 9.4.9 Energy Intensity

**Reporting water energy intensity has many benefits for water utilities and their customers including:**

- Identifying energy saving opportunities as energy consumption is often a large portion of the cost of delivering water.
- Calculating energy savings and greenhouse gas (GHGs) emissions reductions associated with water conservation programs.
- Potential opportunities for receiving energy efficiency funding for water conservation programs.
- Informing climate change mitigation strategies.
- Benchmarking of energy use at each water acquisition and delivery step and the ability to compare energy use among similar agencies.

**In 2020, SMWC consumed a total of 3,099,139 kWh of energy for water facilities.**

## 9.5 Water Service Reliability Assessment

This section considers SMWC's water supply reliability during normal years, single dry years, and up to 5 consecutive dry water years. The supply reliability assessment discusses factors that could potentially limit the expected quantity of water available from SMWC's current source of supply through 2045.

### 9.5.1 Constraints on Water Sources

Based on current conditions, water quality is not expected to affect SMWC's supply reliability. However, water quality issues are constantly evolving. SMWC will take action to protect and treat supplies when needed through water quality treatment. These water quality issues are further discussed at a regional level in **Part 1 Chapter 3.**

### 9.5.2 Year Type Characterization

In general, groundwater is less vulnerable to seasonal and climatic changes than surface water (i.e. local and imported) supplies. The Yucaipa Groundwater Sustainability Agency and the Beaumont Groundwater Basin Watermaster monitor groundwater levels of the local groundwater sources to maintain long term sustainability of the basins. Further discussion of regional water resource management and challenges is included in **Part 1, Chapter 3.**

**Per UWMP requirements, SMWC has evaluated reliability for an average year, single dry year, and a 5 consecutive dry year period. The UWMP Act defines these years as:**

- **Normal Year:** this condition represents the water supplies a supplier considers available during normal conditions. This could be a single year or averaged range of years that most closely represents the average water supply available.

- **Single Dry Year:** the single dry year is recommended to be the year that represents the lowest water supply available.
- **Five-Consecutive Year Drought:** the driest five-year historical sequence for the Supplier, which may be the lowest average water supply available for five years in a row.

### 9.5.3 Water Service Reliability

Under single dry and consecutive dry year conditions, the assessment assumes that demands will increase by as much as 10% due to increased outdoor water use. Although water use may decrease in the later years of a multiple year drought due to implementation of conservation measures and drought messaging, the assessment is based on a 10% increase throughout the 5-year drought to be conservative.

As described in **Part 1, Chapter 3**, the effects of a local drought are not immediately recognized since the region uses the local groundwater basins to simulate a large reservoir for long term storage. Even though localized drought conditions should not affect supply, SMWC participates in several ongoing water conservation measures to optimize and enhance the use and reliability of regional water resources. SMWC also has a water shortage contingency plan to put into action as appropriate to reduce the demand during critical drought years or other supply emergencies.

A summary of the basis of water year data is presented in **Table 9-13.** The percent of average supply increases in drought years because SMWC's groundwater production will increase to meet an assumed increase in demands.

**Table 9-13. DWR 7-1R Basis of Water Year Data**

| YEAR TYPE | BASE YEAR | AVAILABLE SUPPLY IF YEAR TYPE REPEATS AS PERCENT OF AVERAGE SUPPLY |
|---|---|---|
| Average Year | 2020 | 100% |
| Single-Dry Year | 2020 | 110% |
| Consecutive Dry Years 1st Year | 2020 | 110% |
| Consecutive Dry Years 2nd Year | 2020 | 110% |
| Consecutive Dry Years 3rd Year | 2020 | 110% |
| Consecutive Dry Years 4th Year | 2020 | 110% |
| Consecutive Dry Years 5th Year | 2020 | 110% |

The projected supply and demand during a normal year are shown in **Table 9-14.**

**Table 9-14. DWR 7-2R Normal Year Supply and Demand Comparison (AF)**

| | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|
| Supply Totals From Table 6-9R | 2,737 | 2,873 | 3,018 | 3,168 | 3,327 |
| Demand Totals From Table 4-3R | 2,380 | 2,499 | 2,624 | 2,755 | 2,893 |
| **Difference:** | **357** | **374** | **394** | **413** | **434** |

The projected supply and demand during a single dry year are shown in **Table 9-15.** SMWC's demands in single dry years are assumed to increase by 10% above normal year demands. The local groundwater basins SMWC produces water from have storage for use in dry years so SMWC can produce the volume of water needed to meet 100% of demands in single dry years. SMWC's supplies are 100% reliable during single dry years.

**Table 9-15: DWR 7-3R Single Dry Year Supply and Demand Comparison (AF)**

| | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|
| Supply Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| Demand Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| **Difference:** | **0** | **0** | **0** | **0** | **0** |

The projected supply and demand during five consecutive dry years are shown in **Table 9-16**. SMWC's demands in multiple dry years are assumed to increase by 10% above normal year demands. The local groundwater basins SMWC produces water from have storage for use in dry years so SMWC can produce the volume of water needed to meet 100% of demands in single dry years. SMWC's supplies are 100% reliable during multiple dry years.

**Table 9-16: DWR 7-4R Multiple Dry Years Supply and Demand Comparison (AF)**

| | | 2025 | 2030 | 2035 | 2040 | 2045 |
|---|---|---|---|---|---|---|
| FIRST YEAR | Supply Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Demand Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Difference: | 0 | 0 | 0 | 0 | 0 |
| SECOND YEAR | Supply Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Demand Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Difference: | 0 | 0 | 0 | 0 | 0 |
| THIRD YEAR | Supply Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Demand Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Difference: | 0 | 0 | 0 | 0 | 0 |
| FOURTH YEAR | Supply Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Demand Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Difference: | 0 | 0 | 0 | 0 | 0 |
| FIFTH YEAR | Supply Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Demand Totals | 2,618 | 2,749 | 2,886 | 3,031 | 3,182 |
| | Difference: | 0 | 0 | 0 | 0 | 0 |

## 9.6 Drought Risk Assessment

The Drought Risk Assessment (DRA) is a new analysis required for the 2020 UWMP, with a focus on the five-year consecutive drought scenario beginning in 2021. Because SMWC relies on groundwater basins with significant storage, available supplies do not vary on a monthly or seasonal basis, so this analysis is conducted on an annual basis.

Demands for 2021 – 2025 were assumed to increase at a uniform rate between the 2020 actual use and 2025 projected use and were then increased by 10% to reflect higher anticipated demands during dry years. As discussed in the Water Service Reliability Assessment, SMWC can produce additional groundwater to meet any increases in demand in dry years.

**Table 9-17: DWR 7-5 Five-Year Drought Risk Assessment (AF)**

| | | |
|---|---|---|
| 2021 | Gross Water Use | 2,497 |
| | Total Supplies | 2,497 |
| | **Surplus/Shortfall without WSCP Action** | **0** |
| 2022 | Gross Water Use | 2,527 |
| | Total Supplies | 2,527 |
| | **Surplus/Shortfall without WSCP Action** | **0** |
| 2023 | Gross Water Use | 2,557 |
| | Total Supplies | 2,557 |
| | **Surplus/Shortfall without WSCP Action** | **0** |
| 2024 | Gross Water Use | 2,588 |
| | Total Supplies | 2,588 |
| | **Surplus/Shortfall without WSCP Action** | **0** |
| 2025 | Gross Water Use | 2,618 |
| | Total Supplies | 2,618 |
| | **Surplus/Shortfall without WSCP Action** | **0** |

## 9.7 Water Shortage Contingency Plan

The Water Shortage Contingency Plan (WSCP), which is a strategic plan that SMWC has prepared to respond to foreseeable and unforeseeable water shortages. A water shortage occurs when water supply available is insufficient to meet the normally expected customer water use at a given point in time. A shortage may occur due to a number of reasons, such as water supply quality changes, climate change, drought, regional power outage, and catastrophic events (e.g., earthquake). Additionally, the State may declare a statewide drought emergency and mandate that water suppliers reduce demands, as occurred in 2014. The WSCP serves as the operating manual that SMWC will use to prevent catastrophic service disruptions through proactive, rather than reactive, mitigation of water shortages. The WSCP provides a process for an annual water supply and demand assessment and structured steps designed to respond to actual conditions. The level of detailed planning and preparation provide accountability and predictability and will help SMWC maintain reliable supplies and reduce the impacts of any supply shortages and/or interruptions.

The WSCP was prepared in conjunction with the 2020 IRUWMP and is a standalone document that can be modified as needed. SMWC's WSCP is attached as Part 4 Appendix I-9.

# 9.8 Demand Management Measures

The Demand Management Measures (DMMs) section provides a comprehensive description of the water conservation programs that SMWC has implemented for the past five years, is currently implementing, and plans to implement in order to promote efficient water use. SMWC's current per-capita consumption is less than its 2020 compliance target. SMWC expects to continue to implement current conservation programs to encourage conservation and maintain per-capita consumption below the compliance target.

## 9.8.1 Existing Demand Management Measures

### 9.8.1.1 Water Waste Prevention Ordinances

SMWC has adopted a water shortage contingency plan that has a water waste prohibition. SMWC has initiated an aggressive water commodity tiered rate structure to discourage water wasting, if the 20% reduction in per capita use is not met. Large water users have been identified and a program for water conservation is initiated when water waste occurs.

### 9.8.1.2 Metering

In 2012, SMWC replaced all of its meters with automated meter readers (AMR). SMWC monitors all meters on a monthly basis and replaces or repairs those meters that appear to be malfunctioning or defective.

### 9.8.1.3 Conservation Pricing

In the fall of 2019, SMWC concluded a six-month review of their rate structure, in response to Senate Bill 998. Starting January 1, 2020 and continuing annually until January 1, 2024, rates will be adjusted to ensure SMWC remains financially stable heading into the future. **Table 9-18** shows the current expected rates for the years 2020 through 2024. SMWC reminds customers that they can control their bill through conservation and reducing non-essential water usage.

**Table 9-18. Domestic Water Rates for SMWC 2020 to 2024**

| METER SIZE | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| 5/8” | $13.09 | $14.20 | $15.40 | $16.71 | $18.13 |
| 1” | $31.29 | $33.95 | $36.84 | $39.97 | $43.37 |
| 1.5” | $61.64 | $66.88 | $72.57 | $78.74 | $85.43 |
| 2” | $98.06 | $106.39 | $115.44 | $125.25 | $135.89 |
| 3” | $213.37 | $231.51 | $251.19 | $272.54 | $295.70 |
| 4” | $383.30 | $415.88 | $451.23 | $489.58 | $531.20 |
| 6” | $789.92 | $859.07 | $929.92 | $1,008.96 | $1,094.72 |

| TIER | UNITS PER SHARE OF STOCK* |
|---|---|
| 1 | 1 – 14.5 units |
| 2 | 14.6 – 20 units |
| 3 | 21+ units |

*1 unit equals 100 cubic feet or 748 gallons of water

| TIER | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|
| 1 | $1.20 | $1.31 | $1.42 | $1.54 | $1.67 |
| 2 | $2.52 | $2.73 | $2.96 | $3.22 | $3.49 |
| 3 | $3.09 | $3.36 | $3.64 | $3.95 | $4.29 |

The water rate structure is designed as an increasing charge for water as usage increases. Water meter readings are done monthly. By adjusting the tier allotments and tier rates, SMWC has the ability to significantly increase water conservation.

This rate structure, along with the other SMWC programs, is planned to greatly reduce the water running down gutters and other water wasting habits.

### 9.8.1.4 Public Education and Outreach

SMWC goes to great efforts to build upon their relationship with each of their shareholders. They utilize regular website updates and frequent mailers to shareholders to ensure they well-informed and in-touch. Some of the information available in the southmesawater.com website include:

- The “South Mesa Water Company Strategic Plan – 2021-2026”
- Information and tips about finding leaks, determining the cause of high bills, and addressing water pressure issues.
- Water rates, future water rates and construction meter rates.
- Lists of wasteful water actions which are prohibited, and SMWC issues warnings and fines to identified water wasters.
- Water conservation reminders
- SMWC Consumer Confidence Report

Each year, on the 4th Tuesday of February, the annual shareholders' meeting is held. The purpose of the meeting is to elect a board of directors for the coming year and for such other business as may properly come before the meeting. All shareholders are urged to attend. A 20% representation is required to have a quorum in order to conduct business and hold an election. Meeting notices and proxies are mailed to shareholders on February 1st each year.

#### 9.8.1.5 Programs to Assess and Manage Distribution System Real

SMWC has already replaced all the water meters with automated meters to help detect both meter leaks and leaks within the customer's property. During the regular reading duties, the meter and joining pipelines are reviewed for water leakage. Where water is noted in the reading of the meter, a service technician is dispatched to the location of the possible leak to evaluate the situation. Any leaks found, whatever the size, are repaired immediately.

Meters that are noticeably not providing proper readings during the reading period and in the calculations for water used as compared to historic usage by water billing personnel will be evaluated and replaced or repaired as the situation requires.

#### 9.8.1.6 Water Conservation Program Coordination and Staffing Support

SMWC has Supervisory Control and Data Acquisition System (SCADA) system which is utilized to control and monitor all wells, pumps, and reservoirs. Much of this system was upgraded and/or replaced in 2012 as a part of SMWC's system wide rehabilitation. This system is managed by SMWC staff in an effort to coordinate water conservation and keep records of the water system.

#### 9.8.1.7 Other Demand Management Measures

SMWC has few large landscape irrigation areas within its service area. SMWC has met with large landscape owners, and has initiated an informal program for water conservation. SMWC does not have a formal landscape conservation program or incentives, and does not plan to implement this type of program in the near future, but will continue to monitor the large landscape projects for cooperation in conservation.

SMWC does not currently have programs involving residential retrofits, large landscaping conservation programs and incentives, conservation programs for commercial, industrial, and institutional accounts, wholesale agency programs, water waste prohibition, or residential ultra-low flush toilet replacement programs. If SMWC's aggressive water commodity pricing rate schedule and its education programs do not meet the required future water use objectives, SMWC will initiate the above-mentioned water conservation programs.

## 9.9 Adoption, Submittal and Implementation

This section describes SMWC's process for adopting, submitting, and implementing the 2020 IRUWMP and SMWC's WSCP.

### 9.9.1 Notice of Public Hearing

A joint notice was provided on behalf of all agencies whose 2020 UWMPs are part of the 2020 IRWUMP to all cities and counties and other stakeholders within the region that that 2020 IRUWMP is being prepared. This notice was sent at least 60 days prior to SMWC's public hearing. The recipients are identified in **Part 1 Chapter 1** and include all cities and counties within SMWC's service area. A second notice was provided to these cities and counties with the date and time of the public hearing and the location where the draft report was available for review.

SMWC provided notice to the public through its website and published announcements of the public hearing in a newspaper on two occasions before the hearing. Copies of the proof of publication are included in Part 4 Appendix I-2.

### 9.9.2 Public Hearing and Adoption

SMWC held a public hearing on June 18, 2021 to hear public comment and consider adopting this 2020 IRUWMP and SMWC's WSCP.

As part of the public hearing, the SMWC provided information on their baseline values, water use targets, and implementation plan required in the Water Conservation Act of 2009. The public hearing on the 2020 IRUWMP took place before the adoption of the Plan, which allowed SMWC the opportunity to modify the 2020 IRUWMP in response to any public input before adoption. After the hearing, the Plan was adopted as prepared or as modified after the hearing.

SMWC's adoption resolution for the 2020 IRUWMP and SMWC's WSCP is included in Part 4 Appendix I-3.

### 9.9.3 Plan Submittal

SMWC will submit the 2020 IRUWMP and SMWC's WSCP to DWR, the State Library, and cities and counties within 30 days after adoption.

2020 IRUWMP submittal to DWR will be done electronically through WUEdata, an online submittal tool.

### 9.9.4 Public Availability

No later than 30 days after filing a copy of its Plan with DWR, SMWC will make the plan available for public review during normal business hours by placing a copy of the 2020 IRUWMP and SMWC's WSCP at the front desk of the City's office, and by posting the plans on the City's website for public viewing.

### 9.9.5 Amending an Adopted UWMP or Water Shortage Contingency Plan

If the adopted 2020 IRUWMP or SMWC's WSCP is amended, each of the steps for notification, public hearing, adoption, and submittal will also be followed for the amended plan.