

Water Smart Home Kit Water Use Efficiency Project



Grant Applicant:

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Funding Group I

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MANDATORY FEDERAL FORMS

The following forms were submitted electronically via grants.gov: SF-424 Application for Federal Assistance, SF-424A Budget Information – Non-Construction Programs, SF-424D Assurances – Construction Programs, Project Abstract Summary (OMB Number 4040-0019), and SF-LLL Disclosure of Lobbying Activities. Copies of manually signed federal forms are provided in **Appendix A**.

TECHNICAL PROPOSAL AND EVALUATION CRITERIA

(1) Executive Summary

Date: July 27, 2022

Applicant Name: Upper San Gabriel Valley Municipal Water District, Ms. Jennifer Aguilar, Water Use Efficiency Analyst, Project Manager

City: Monrovia

County: Los Angeles

State: California

Applicant Category: Upper San Gabriel Valley Municipal Water District is a Category “A” Applicant

The Upper San Gabriel Valley Municipal Water District, located in Los Angeles County, California, will complete the Water Smart Home Kit Water Use Efficiency Project as part of its long-term goals of water supply reliability and efficient water management. The Project includes providing District residential customers with a Water Smart Home Kit to provide a variety of water use efficiency fixtures and leak identification and repair tools to reduce water use in and around their homes. The proposed kit’s water use efficiency fixtures will include next generation sprinkler nozzles, sprinkler pressure reducing stations, shower start flow control device, shower head, and universal faucet aerators. The proposed kit’s leak identification and repair tools will include toilet leak detection tablets, a universal toilet flapper, a universal toilet water supply line, and 0.5-inch and 0.75-inch slip fixes. The Project anticipates distribution of approximately 2,200 kits to achieve water savings of 1,620 acre feet per year for the estimated 10-year life of the Project. The District is the lead and sole agency for this Project. The District is experiencing severe drought conditions, the majority of California is experiencing severe to exceptional drought conditions, and the Project’s water conservation methods and resulting benefits are an excellent way to immediately address water supply reliability. The Project can start immediately upon award of funding and provide critical drought relief. The District-adopted 2020 Urban Water Management Plan is the primary planning document that identifies and supports the Project as a method for achieving District objectives of reducing or eliminating reliance on imported water supplies and maximizing local water supply reliability.

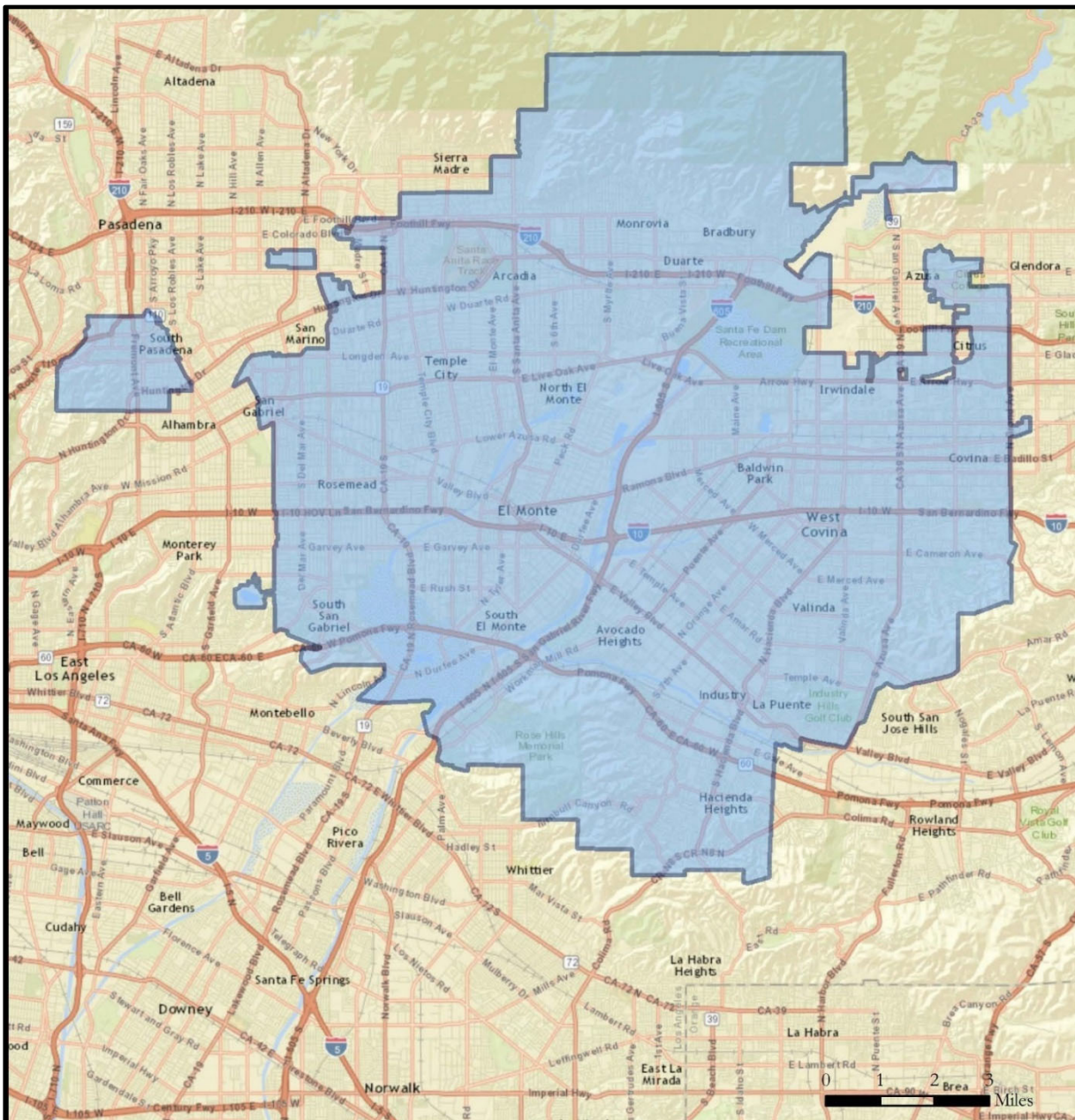
Following the anticipated May 31, 2023 funding award, the Project is anticipated to begin in July 2023 with Project administration, reporting, kit preparation, marketing, and distribution. The Project is anticipated to be complete by the end of December 2024 within an approximately 18-month timeframe. The Project meets the requirement not to begin construction prior to May 2023.

The Water Smart Home Kit Water Use Efficiency Project is not located on a federal facility.

(2) Project Location

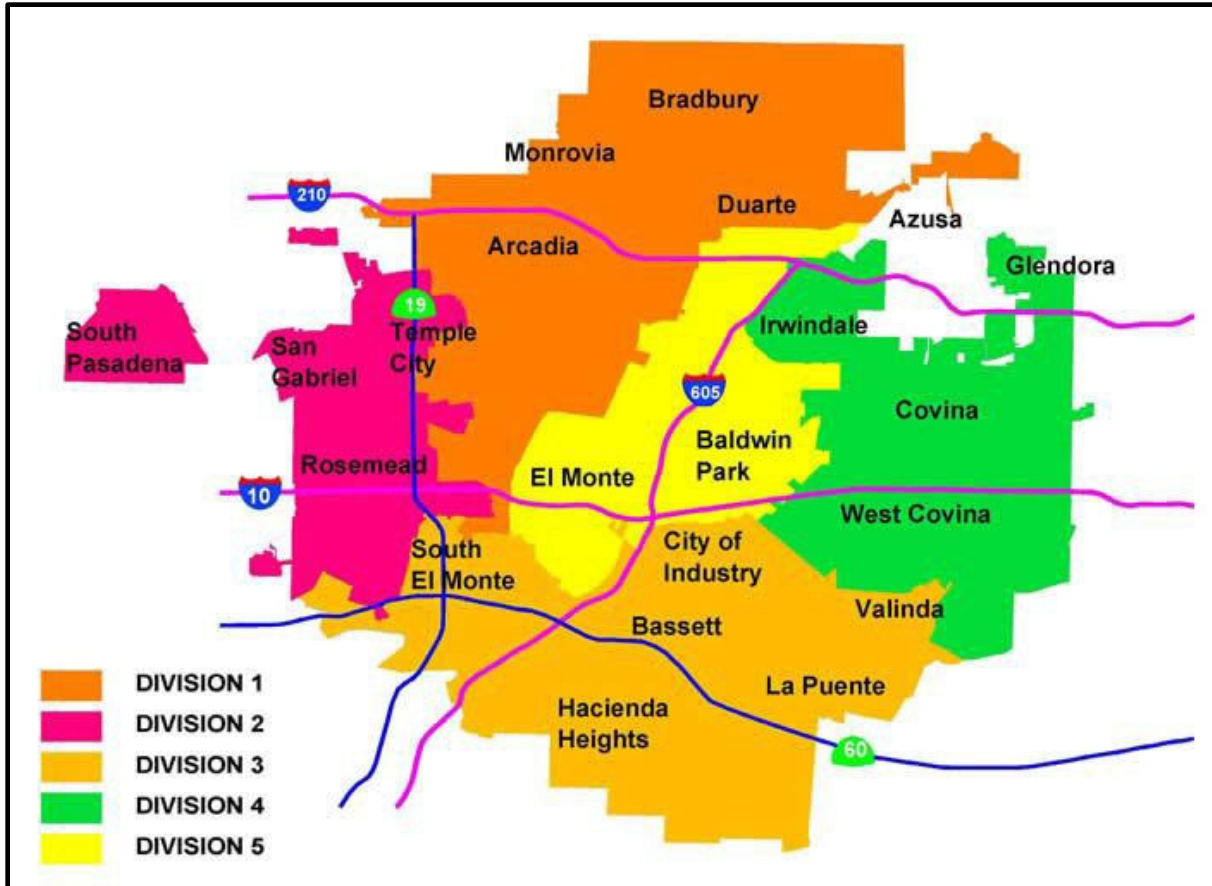
The Water Smart Home Kit Water Use Efficiency Project (Project) will be implemented throughout the Upper San Gabriel Valley Municipal Water District (Upper District/District) service area, about 144 square miles, which includes all or portions of the cities of Arcadia, Azusa, Baldwin Park, Bradbury, Covina, Duarte, El Monte, Glendora, Industry, Irwindale, La Puente, Monrovia, Rosemead, San Gabriel, South El Monte, South Pasadena, Temple City, and West Covina. Upper District is located within San Gabriel Valley in Los Angeles County and overlies the Main San Gabriel Groundwater Basin (Main Basin). The boundaries of Upper District's service area are shown on **Figure 1**. The specified Project latitude of 34° 8' 25.39615" and longitude -117° 59' 31.69719" is at the District's Offices at 602 E. Huntington Drive, Monrovia, California, 91016.

Figure 1. Upper District Service Area Map



Upper District is a wholesale water agency and was incorporated on January 7, 1960 under the Municipal Water District Act. Upper District's leadership includes a five-member Board of Directors and the District is broken down into five divisions, which are shown on **Figure 2**.

Figure 2. Upper District Board of Directors Divisions Map



As a wholesaler, Upper District supplies imported water from the Metropolitan Water District of Southern California (MWD) and recycled water to its member agencies (retail water agencies). Upper District also implements conservation programs and relies on local groundwater/surface water to meet demands, although Upper District does not have groundwater rights. In Fiscal Year 2019/2020 (FY 19/20), Upper District imported a total of 71,800 acre-feet (AF) of water, 3,000 AF of treated water and 68,800 AF of untreated water (3,000 AF + 68,800 AF = 71,800 AF). Upper District relies on approximately 36% treated and untreated imported water supplies. MWD supplies imported water to Upper District, which in turn supplies that imported water to its member agencies. Upper District service area is largely urbanized, consisting of mainly residential, light industrial and commercial uses. Treated imported water is delivered by Upper District to its member agencies for direct use via Upper District service connections on the MWD distribution system (3,000 AF in FY 19/20). Untreated imported water is delivered to the Main Basin for groundwater replenishment to satisfy its Replacement Water obligations required under the Main Basin Judgment (68,800 AF in FY 19/20). Upper District does not have water rights involved in its water supplies. Approximately 60% of the District's water demand is sourced from local groundwater and surface water (120,000 AF in FY 19/20), and the remaining 4% is composed of recycled water (2,400 AF in FY 19/20) and the demand offset by ongoing District conservation programs (5,000 AF in FY 19/20). Upper District serves

29 local water agencies recycled water for direct uses; the recycled water is obtained from the Los Angeles County Sanitation District (LACSD). Direct use of recycled water reduces groundwater production, and consequently, the need for an equivalent amount of imported water in many cases. The current drought and anticipated future drought conditions make imported water supplies unreliable with looming shortfalls in imported water supply. Therefore, Upper District works with its 29 retail water agencies to conserve outdoor and indoor water use and enhance water use efficiency.

(3) Technical Project Description

The Upper San Gabriel Valley Water District will complete the Water Smart Home Kit Water Use Efficiency Project as part of its long-term goals of water supply reliability and efficient water management. The Project includes providing the District's member agencies' residential customers with a Water Smart Home Kit to provide fixtures and tools needed to make their home water efficient and encourage them to install the devices on their own. Each kit will include sprinkler nozzles, sprinkler pressure reducing stations (PRS), shower start flow control device, shower head, sink faucet aerators, toilet leak detection tablets, toilet flapper, toilet supply line, couplings, tools required to make these changes, and educational materials to guide residents through the installation process. The District has collaborated with consultants to select the appropriate materials to include in the Water Smart Home Kit. The District has approved the specific equipment proposed to be distributed in the kits. In general, the kit materials will be commercially available, compatible with existing infrastructure (i.e., universal fittings), and have a history of success. However, the kit materials may be modified based on price fluctuations, availability of materials, or other factors but would provide the same water savings benefits. These kits will allow residents to replace high water using devices with lower water using devices, look for leaks, and make repairs on their own. A summary of the fixtures included in the kit and summary of associated water conservation benefits based on assumptions included in Evaluation Criterion A are presented in **Table 1** on the following page.

The Project anticipates distribution of approximately 2,200 kits to achieve water savings of 1,620 acre feet (AF) per year (AFY) for the estimated 10-year life of the Project. The District is the lead and sole agency for this Project. The District will oversee a consultant (EcoTech Services) responsible for purchasing the fixtures to include in each kit, and assembling the kits. A draft copy of the EcoTech Services proposal and additional fixture cost information is provided in **Appendix B** and serves as the basis for the Project budget. The District will be responsible for marketing and promoting the Project to the member agencies' customers within the District's service area. Upper District's member agencies will also be able to promote the Project directly to their customers. Once eligibility is verified, participants will be scheduled for a date and time to pick up their kit at the Upper District offices.

The Project replaces and expands the District's popular and previously implemented Water Smart Home direct install program. MWD allots a specific amount of funding to each of its member agencies for water use efficiency programs run by member agencies and/or their retailers. The proposed Project builds upon the success of the District's popular and previously implemented Water Smart Home Kit direct install program, which was partially funded by MWD through Member Agency Administered allocation funds. Through the previous program, the Upper District provided the direct installation of water use efficiency items over two years. The direct install was very popular; nearly 200 homes in the Upper District's service area were provided the direct installation of water efficient sprinklers, weather-based controllers, showerheads, and a repair kit for the household water related items. However, the District desired to provide a larger scale distribution program with less cost impacts to the customer. Therefore, the District developed the proposed Water Smart Home Kit Water Use Efficiency Project to replace and expand the previous program as a distribution program rather than a direct installation program. With the previous direct installation program, only approximately

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250 homes could be reached; whereas, with the proposed larger Water Smart Home Kit Project, it is expected that 2,200 homes (almost 10 times the households) can receive indoor and outdoor use fixtures, tools, and education on these water efficient devices. Implementation of the proposed Project helps the District meet its water use efficiency and conservation goals identified in the District's 2020 Urban Water Management Plan (UWMP).

Table 1. Summary of Water Smart Home Kit Contents and Estimated Water Savings

| Device, Material, Fixture, or Tool | | Unit Estimated Water Savings from Reference | Total Estimated Water Savings |
|--|--|---|---|
| Educational Materials | | | |
| 1 | Kraft Literature Mailer (12x10x4) | Not Applicable | Box to store kit item contents. |
| 1 | Kit Information Card (5x7) | Not Applicable | EcoTech designed kit card detailing use of contents in a leak repair kit. |
| Water Use Efficiency Fixtures | | | |
| Landscape Irrigation Measures | | | |
| 5 | Rain Bird HE-VAN Sprinkler Nozzles | 7.5 gallons per sprinkler per week | 1,950 gallons per year/kit |
| 2 | 4-inch Rain Bird 1800 SAM Pressure Regulating Stations | 15 gallons per sprinkler per week | 1,560 gallons per year/kit |
| High-Efficiency Indoor Fixtures | | | |
| 1 | Evolve Shower Start | 5 gallons per shower | 1,825 gallons per year/kit |
| 1 | Evolve Standard Shower Head | 3.5 gallons per minute | 8,943 gallons per year/kit |
| 2 | Universal Sink Aerator | 1 gallon per minute | 1,460 gallons per year/kit |
| Subtotal | | | 15,738 gallons per year/kit |
| Leak Identification and Repair Fixtures | | | |
| 2 | Toilet Leak Detection Tablet Packets | Not Applicable | Not Applicable |
| 1 | Universal Toilet Flapper | 200 gallons per day | 73,000 gallons per year/kit |
| 4 | 0.5 & 0.75-inch Slip Fix Couplings | 6,300 gallons per month | 151,200 gallons per year/kit |
| 1 | Christies Red Hot Glue – 0.25 pint | Not Applicable | Not Applicable |
| 1 | Toilet Supply Line | Not Applicable | Not Applicable |
| 1 | 0.5-inch Teflon Tape | Not Applicable | Not Applicable |
| 1 | 1.25-inch Ratcheting PVC Cutter | Not Applicable | Not Applicable |
| Subtotal | | | 224,200 gallons per year/kit |
| Total Water Savings Per Kit | | | 239,938 gallons per year/kit |
| Number of Kits | | | 2,200 kits |
| Total Annual Water Savings as a Result of the Project | | | 1,620 AFY |
| Estimated Project Life | | | 10 Years |
| Total Water Savings as a Result of the Project | | | 16,200 AF |

(4) Evaluation Criteria

Evaluation Criterion A: Quantifiable Water Savings

1) Estimated Water Savings

The total water savings estimated as a direct result of the Project is **1,620 AFY**. The savings is anticipated for the life of the Project, which is 10 years, based on the industry accepted useful life of high efficiency sprinkler nozzles and pressure regulation stations and reasonable for the other indoor water efficiency fixtures provided in the Water Smart Home Kits. The total water savings over 10 years would be **16,200 AFY**. Calculations and supporting documentation for the estimated water savings is included in the following sections.

According to the Environmental Protection Agency (EPA), household leaks account for 900 billion gallons of water wasted each year. Toilet leaks and small pipe leaks (i.e., irrigation) are the main contributors for wasted water in and around the home. These leaks can be repaired quickly with the right tools and identification processes. The Project educates residents and raises awareness of water use efficiency, encouraging participants to expand upon the devices provided in the kit and purchase and install the same or similar additional water saving devices from their local home improvement retailers based on the successful installation of devices from the kit. Placing fixtures and tools in the hands of the residents so that they can take action to reduce their water use and have ownership for making water use efficiency changes is the most effective way to save water in the long-term.

2) Current Losses

The Upper District is located within the San Gabriel Valley in Los Angeles County and overlies the Main Basin. As a wholesaler, the Upper District supplies supplemental imported water from MWD, and recycled water to its member agencies. Although the Upper District does not produce groundwater, its member agencies rely on groundwater produced from the Main Basin to meet their demands. The Upper District is not required by the California Department of Water Resources (DWR) to perform water loss audits and report distribution system water loss because the District is a wholesale supplier. Each treated imported water connection has only one meter reported by MWD to the Upper District. Therefore, from an accounting standpoint for the Upper District, there are no apparent or real system losses. However, the Upper District's member agencies may experience apparent or real system losses.

As such, water is lost from irrigation water from the residential sites within the service area due to the inefficient devices (i.e., low-efficiency sprinkler nozzles and leaking irrigation systems). The water from these fixtures leaks into the landscaped areas and either percolates into the ground or creates urban runoff, which is then discharged into the local storm drain system that makes its way into either the Rio Hondo or San Gabriel Rivers. There is some benefit associated with where the current losses are going, for example, the seepage water helps enhance habitat for fish or animal species in these rivers. Potable water used indoors is lost down the drain, then treated and released into the waterways and ultimately the Pacific Ocean, supporting natural environments. Water lost from any leakage is reasonably considered to be seeping back into the ground and/or flowing to a storm drain or ocean. A total of 1,620 AFY of water conserved as a result of the proposed Project's implementation represents a decrease in the Upper District's water demand by 1,620 AFY from MWD, lower the energy usage of the Upper District, and decrease greenhouse gases (GHG), as less energy will be required due to the reduced amount of imported water. The conserved water will reduce the amount of imported water from the Colorado River and the Bay-Delta systems; therefore, 1,620, AFY will remain in the ecologically stressed Colorado River and Bay-Delta systems.

More water remaining in the Bay-Delta benefits the Central Valley Project (CVP), which is managed by Reclamation. Extending 400 miles through central California, the CVP is a complex, multi-purpose network of dams, reservoirs, canals, hydroelectric powerplants and other facilities. The CVP reduces flood risk for the Central Valley, and supplies valley domestic and industrial water. The State Water Project (SWP) is the nation's largest state-built water and power development conveyance system. The primary purpose of the SWP is to provide a water supply and delivery system to distribute water across California. Both the CVP and SWP rely on water supply in the Bay-Delta. Reclamation and the California DWR coordinate on the balance of water in the Bay-Delta for uses in the SWP and CVP. Therefore, the CVP benefits from more water remaining in the Bay-Delta and the SWP systems.

3) Support/Documentation of Estimated Water Savings

Documentation for the estimated water savings, including assumptions, web references, and calculations are provided under Question 4 below; the first section describes landscape irrigation measures, and the second section describes the indoor fixtures.

4) Please address the following questions according to the type of infrastructure improvement you are proposing for funding.

The Project includes distribution of infrastructure for High Efficiency Landscape Irrigation Measures and High-Efficiency Indoor Fixtures in the Water Smart Home Kits. Responses to questions according to these infrastructure types follow.

Smart Irrigation Controllers, Controllers with Rain Sensor Shutoff, Drip Irrigation, and High-Efficiency Nozzles

a. How has the estimated average annual water savings been determined? Please provide all relevant calculations, assumptions, and supporting data.

The estimated average annual water savings for the high-efficiency landscape irrigation measures to reduce current, ongoing losses was determined as follows:

- **Rain Bird HE-VAN Sprinkler Nozzles.** Per the manufacturer, HE-VAN nozzles offer even coverage throughout the spray pattern and generate large, wind-resistant water droplets that prevent misting and airborne evaporation. The high efficiency of the nozzle allows users to shorten sprinkler run times by up to 35%, saving water and money (<https://www.rainbird.com/products/he-van-high-efficiency-variable-arc-nozzles>). A standard sprinkler nozzle has a water flow of 2 gallons per minute (gpm); therefore, the water savings = 0.35×2 gpm is 0.7 gpm. Conservatively rounding down to an estimated water savings of 0.5 gpm x an assumed 15 minutes per week of irrigation x 52 weeks per year = 390 gallons per year of savings per sprinkler. The water savings estimate for this Project assumes a total of 5 sprinkler nozzles are installed per residence. **The total water savings is 5 nozzles/kit x 390 gallons per year or 1,950 gallons per year.**
- **Rain Bird 1800 SAM Pressure Regulating Stations.** Per the manufacturer, the 1800 SAM pressure regulating stations can save up 50% more water at regulated pressure of 30 pounds per square inch (psi) compared to a standard 70 psi irrigation system with no pressure regulation (<https://store.rainbird.com/1804samprs-4-in-1800-series-sam-prs-spray-head-no-nozzle.html>). The

pressure regulating station also restricts water loss by up to 70% if the sprinkler nozzle is removed or damaged, which was not included in the water savings estimates. A standard sprinkler nozzle has a water flow of 2 gpm; therefore, the estimated water savings = 0.50 x 2 gpm, or 1 gpm. A water savings of 1 gpm x an assumed 15 minutes per week of irrigation x 52 weeks per year = 780 gallons per year savings. The water savings estimate for this Project assumes two sprinkler pressure regulating stations are installed per residence. **The total water savings = 2 PRSs/kit x 780 gallons per year or 1,560 gallons per year.**

- **0.5 & 0.75-inch Slip Fix Couplings.** Per the EPA, an irrigation system that has a leak 1/32 of an inch in diameter (about the thickness of a dime) can waste about 6,300 gallons of water per month. (<https://19january2017snapshot.epa.gov/www3/watersense/pubs/fixleak.html#:~:text=An%20irrigation%20system%20that%20has,gallons%20of%20water%20per%20month>). The water savings estimate for this Project assumes two of the four couplings provided in the Water Smart Home Kit were installed. **The total water savings = 2 couplings/kit x 6,300 gallons per month savings x 12 months per year or 151,200 gallons of water saved per year.**

b. Was historical water consumption data evaluated to estimate the percent reduction in water demand per unit area of irrigated landscape? If so, did the evaluation include a weather adjustment component?

No, historical water consumption data was not evaluated by the District to estimate the percent reduction in water demand per unit area of landscape. Alternatively, and as detailed above, the reduced water demand was evaluated using published values of water savings from the irrigation fixture manufacturer (Rain Bird) for the sprinkler nozzles and pressure regulating stations, and from the EPA for the irrigation system leak repair couplings.

c. What types (manufacturer and model) of devices will be installed and what quantity of each?

As described in **Table 1** above, the types of high-efficiency nozzle devices that will be included in each Water Smart Home Kit include:

- (5) Rain Bird HE-VAN Sprinkler Nozzles
- (2) Rain Bird 1800 SAM sprinkler Pressure Regulating Stations
- (4) Slip Fix Couplings
 - (1) PRO SPAN Coupling – 3/4"
 - (1) PRO SPAN Coupling – 1/2"
 - (1) SCH 40 PVC Coupling – 3/4"
 - (1) SCH 40 PVC Coupling – 1/2"

Note that due to potential supply and availability issues, fixtures with similar water savings may be substituted.

d. Will the devices be installed through a rebate or direct install program?

The devices will not be installed through a rebate or direct install program. Eligible residential customers can schedule a time to pick up the kits from the District offices – the kits will be provided free of charge for self-installation by residents.

e. Will site audits be performed before and after installation?

Site audits will not be performed before and after installation. The proposed Project educates and enables residential water users in the District's service area to identify leaks and install the provided water efficient fixtures, achieving sustainable and ongoing water savings.

f. How will actual water savings be verified upon completion of the project?

Actual water savings will be verified by contacting select participating residents and asking which devices were installed. The number of installed devices will be multiplied by the estimated unit water savings per device. The overall device installation rate will be estimated proportionate to the rates observed by the responding participants.

High-Efficiency Indoor Fixtures

a. How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.

The estimated average annual water savings for the high-efficiency indoor fixtures measures to reduce current, ongoing losses was determined as follows:

- **Evolve Technologies ShowerStart.** Per the manufacturer, the Evolve ShowerStart will save the hot water and energy used while waiting for the shower to become warm. Behavioral waste occurs when bathers use their time comfortably and efficiently while waiting for hot water to reach the shower. Instead of waiting for cold water to exit the shower head, most people leave to do something else (i.e., brush teeth, use the restroom, and select clothes). Because bathing only begins after the tasks have been completed, countless gallons of hot water are unintentionally wasted at the start of every shower. When the water reached 95 degrees F, the Evolve ShowerStart automatically lowers the flow to a trickle, saving hot water until a cord is pulled to resume full water flow. Behavioral waste is converted to gallons for the purpose of making water and energy savings calculations, which also depends on a shower head's flow rate and other factors. Given these variables, behavioral waste can range from 2 to 6 gallons per shower (<https://www.thinkevolve.com/pages/behavioral-waste>). The water savings for this fixture assumes an estimated water savings of 5 gallons per shower and a conservative 1 shower per day per household. **The total water savings = 1 Evolve ShowerStart x 1 shower per day per household x 5 gallons savings per shower x 365 days per year or 1,825 gallons of water saved per year.**
- **Evolve Technologies Standard Shower Head.** Per the manufacturer, the Evolve shower head is an EPA-certified high-efficiency showerhead that uses 1.5 gpm versus conventional showerheads that use between 2.5 and 5.0 gpm (<https://www.thinkevolve.com/pages/showerheads>). The water savings for this fixture assumes an estimated water savings per shower head of 3.5 gpm (5.0 gpm - 1.5 gpm) and a conservative 1 shower per day per household. **The total water savings = 1 Evolve shower head x 1 shower per day per household x 3.5 gpm savings x an assumed average 7-minute shower per day x 365 days per year or 8,943 gallons of water saved per year.**
- **Universal Sink Aerator.** The universal aerators may be NEOPERL aerators or other universal type. Aerators can be installed in kitchen or bathroom faucets to control the water stream straightness and diameter, reduce splash and eliminate side spray. Online sources recommend installation of an aerator if the flow is more than 1.5 gpm, and the aerators restrict water flow to 0.35 gpm or 0.5 gpm

(<https://www.plumbingsupply.com/water-saving-low-flow-aerators.html>). The water savings for this fixture assumes a savings of 1 gpm per aerator. **The total water savings = 2 aerators x 1 gpm savings x assumed average 2-minute faucet use per day x 365 days per year or 1,460 gallons of water saved per year.**

- **Universal Toilet Flapper.** Depending on the extent of the leak, a warped or poorly fitting toilet flapper can waste up to 200 gallons of water a day (<https://toiletflapper.org/>). Therefore, a new flapper is estimated to be able to save 200 gallons of water per day. **The total water savings = 1 flapper x 200 gallons per day x 365 days per year or 73,000 gallons of water saved per year.**

b. What types (clothes washers, shower heads, etc.) of appliances and fixtures will be installed and what quantity of each?

As described in **Table 1** above, the types of high-efficiency indoor fixtures that will be included in each Water Smart Home Kit include:

- (1) Evolve Technologies Shower Start
- (1) Evolve Technologies Standard Shower Head
- (2) NEOPERL 1 gpm Universal Sink Aerators
- (1) Universal Toilet Flapper

Note that due to potential supply and availability issues, fixtures with similar water savings may be substituted.

c. Have studies been conducted to verify the existence of non-efficient appliances and fixtures? Provide published water savings rates for each of these devices and reference the source for each of the device savings rates.

Specific studies within the District's service area have not been conducted to verify the existence of non-efficient appliances and fixtures. However, non-efficient fixtures are assumed to exist at the residences where participants have registered their addresses, been verified as within the District's service area, and have made the effort to pick up the Water Smart Home Kit from the District's offices.

d. Will the devices be installed through rebate or direct-install programs?

The devices will not be installed through a rebate or direct install program. Eligible residential customers can schedule a time to pick up the kits from the District offices – the kits will be provided free of charge for self-installation at home.

e. How will actual water savings be verified upon completion of the project?

Similar to that described above for outdoor irrigation fixtures, actual water savings will be verified by contacting select participating residents and asking which devices were installed. The number installed devices will be multiplied by the estimated unit water savings per device. The overall device installation rate will be estimated proportionate to the rates observed by the responding participants.

Evaluation Criterion B: Renewable Energy

Subcriterion No. B.1 – Renewable Energy

This Project does not include renewable energy components.

Subcriterion No. B.2 - Increasing Energy Efficiency in Water Management

Describe any energy efficiencies that are expected to result from implementation of the water conservation or water efficiency project (e.g., reduced pumping).

- **If quantifiable energy savings is expected to result from the project, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.**

Implementation of the Project will result in energy savings by conserving water which reduces the demand of imported water and thereby decreases the energy required to transport imported water from the Colorado River Aqueduct (CRA) and SWP to the Upper District's service areas. Therefore, the Project includes an energy efficiency element due to reduced pumping related to the 1,620 AFY estimated water savings. The District primarily relies on energy provided by Southern California Edison and the Southern California Gas Company.

The Upper District's member agencies receive their water supply through eight (8) turnouts from the Upper District. Water is conveyed through a series of distribution lines, pump stations and storage tanks via the Upper District's member agencies' distribution systems. Approximately 4,549 kilowatt-hours per AF (kWh/AF) is required for conveyance and pumping of SWP imported water the District receives from MWD's Pearblossom Pumping Station. The SWP value is based on off-Aqueduct Power Facility Costs (DWR Bulletin B-132-20, 2020). Imported water pumped from the Main Basin for distribution is an additional 575 kWh/AF based on actual energy usage provided by the Upper District staff.

Importing water is extremely energy intensive; much of the state's energy consumption is attributed to water conveyance. Reduction in water loss and overall consumption will impact the increasing energy efficiency of overall system operations. The Upper District does not have its own imported water distribution system and relies on MWD's distribution system for delivery of treated and untreated imported water to the Upper District's member agencies. Consequently, the Upper District has no additional or direct energy use. MWD's energy use for importing, treating, and distributing water supplies to MWD member agencies, such as the Upper District, are discussed in MWD's 2020 UWMP. MWD's operational control includes the CRA, but does not include the SWP. However, excluding upstream embedded energy from the SWP would not represent an accurate estimate of the energy embedded in MWD's water supplies. To avoid potential misinterpretation of the data provided, the UWMP reports MWD's energy intensity information with upstream SWP embedded energy and includes the following functions: source, conveyance, treatment, distribution, and storage. MWD's 2020 UWMP states that the nominal energy intensity of water conveyed through the CRA is 2,000 kWh/AF, while the California Aqueduct's (SWP water) net energy intensity for the water received from the West Branch is 2,580 kWh/AF and for the East Branch it is 3,236 kWh/AF (Page A.10-4). These values are the nominal pumping requirements of the SWP pumps (Banks, Dos Amigos, Buena Vista, Teerink, Chrisman, Edmonston, Oso, and Pearblossom) less the nominal generation values from the West and East Branch recovery generating plants (Warne, Castaic, Alamo, Mojave, and Devil Canyon). Therefore, averaging energy from these sources amounts to 2,605 kWh/AF of energy used to convey water through MWD's system to the Upper District.

Therefore, it is estimated that an average of 2,605 kWh/AF is used in conveying imported water from CRA and SWP to the District and an additional 575 kWh/AF to pump, treat, and distribute the water throughout the Upper District's service area. The proposed Project will result in imported water savings of 1,620 AFY resulting in 5,151,600 kWh/year energy savings, calculated as follows:

Energy Savings from Reduced Imported Water and Reduced Local Delivery

1,620 AFY total water savings from the Project

Reduced Imported SWP Water = 1,620 AFY x 2,605 kWh/AF = 4,220,100 kWh/year Energy Savings

District System Delivery = 1,620 AFY x 575 kWh/AF = 931,500 kWh/year Energy Savings

Project Savings = 4,220,100 kWh/year + 931,500 kWh/year = **5,151,600 kWh/year Energy Savings**

Conserving energy results in reducing GHG (carbon) emissions. Carbon emission estimates are 0.5135 lbs. of carbon dioxide per kWh (CO₂/kWh) based on the EPA eGRID Summary Tables 2020. The Project will avoid GHG emissions of approximately 2,645,347 pounds of CO₂ per year.

GHG Reductions from Energy Savings

Project GHG Emissions Reductions from Energy Savings = 5,151,600 kWh/year x 0.5135 lbs.

CO₂/kWh = **2,645,347 pounds of CO₂ per year GHG Reductions from Energy Savings**

Over the 10-year Project lifespan, approximately 13,235 total tons of carbon emissions will be avoided.

• How will the energy efficiency improvement combat/offset the impacts of climate change, including an expected reduction in greenhouse gas emissions?

The Project's water conservation strategy will promote energy efficiency and will quantifiably reduce energy consumption through significant improvements in water use efficiency that would reduce both pumping to import water, and pumping to distribute water throughout the District's service area. The proposed Project's water conservation will reduce water import, treatment, and pumping since the demand will be decreased. This translates into a reduction in GHG emissions in the form of reduced pounds of CO₂ per year. As detailed in the calculations above, the Project will save 2,645,347 pounds of CO₂ per year from energy savings.

• If the project will result in reduced pumping, please describe the current pumping requirements and the types of pumps (e.g., size) currently being used. How would the proposed project impact the current pumping requirements and energy usage?

The proposed Project is a water conservation project that does not include pumps. The current pumping requirements for the Upper District are related to imported water delivery from SWP and CRA through MWD and groundwater pumping from the Main Basin. The types of pumps used are imported water and groundwater pumps. As previously described, water is conveyed through a series of distribution lines, pump stations and storage tanks via the Upper District's member agencies distribution systems. The Upper District receives imported water from MWD's Pearblossom Pumping Station, while groundwater pumps are used to pump water from the San Gabriel Main Basin. Based on a review by Stetson Engineers, Inc. of approximately 30 well pump tests (conducted by Southern California Edison) for various groundwater wells throughout the Main Basin, the size of these groundwater well pumps typically range from 50 horsepower (hp) to 500 hp. Based on a similar review of booster pump tests, the size of booster pumps typically range from 10 hp to 350 hp. The Pearblossom Pumping Plant is located on the California Aqueduct, about 25 miles from the City of Lancaster and 12 miles east of the town of Palmdale. Constructed from 1967 to 1973, the plant lifts water about 540 feet to continue by gravity to Silverwood Lake. As presented in Table 1-3 titled "Pumping Plant

Characteristics, in *Management of the California State Water Project, Bulletin 132-18* (DWR, 2021), the Pearblossom facility includes 9 units and has a total motor rating of 203,200 hp. The Upper District has never produced groundwater from the Main Basin and currently does not have facilities to do so. However, the Upper District's member agencies produce water from the Main Basin. Approximately 60% of the District's water demand is sourced from local groundwater and surface water (120,000 AF in FY 19/20). The proposed Project would positively impact the current pumping requirements by reducing the need to pump 1,620 AFY of imported water. Since the imported water is purchased to replenish the groundwater basin, this would also reduce the need to pump 1,620 AFY of groundwater. This results in an avoided purchase cost and energy for conveyance for imported water. Calculations for energy reduction and associated reduction in GHG emissions are presented above in this section.

• Please indicate whether your energy savings estimate originates from the point of diversion, or whether the estimate is based upon an alternate site of origin.

The Project energy savings includes both energy savings estimated from the reduction in local pumping of groundwater and estimated from the reduction in transport of imported SWP water to replenish the Main Basin.

• Does the calculation include any energy required to treat the water, if applicable?

No, the energy for Pearblossom Pump Station and replenishment water does not include the energy required to treat the water.

• Will the project result in reduced vehicle miles driven, in turn reducing greenhouse gas emissions? Please provide supporting details and calculations.

Not applicable, the Project does not result in reduced vehicle miles driven.

• Describe any renewable energy components that will result in minimal energy savings/production (e.g., installing small-scale solar as part of a SCADA system).

Not applicable, no renewable energy components are proposed as part of the Project.

Evaluation Criterion C: Sustainability Benefits

Enhancing Drought Resiliency

The Project will directly contribute to building drought resiliency by implementing a high caliber and proven water conservation strategy that emphasizes water reliability, conservation, and increases water use efficiency. All of these factors are critical for ensuring water and ecological sustainability in the future, given the increasing costs of imported water and the severe water supply challenges that Southern California constantly faces.

• Does the project seek to improve ecological resiliency to climate change?

Yes, the Project seeks to improve ecological resiliency to climate change by saving 1,620 AFY of water which results in: 1) decreasing demand on imported water from the San Francisco Bay and San Joaquin Delta ecosystems, and 2) increasing water quality by reducing runoff in the San Gabriel River Watershed. Upper District provides imported water service to its member agencies through MWD's distribution system and recycled water service through a local distribution system. The majority of the imported water delivered from Upper District to its member agencies is used for groundwater replenishment. Although Upper District does

not produce groundwater, its member agencies rely on groundwater produced from the Main Basin to meet their demands. Reducing the demand on imported water will benefit several federally-listed threatened and endangered species in the San Francisco Bay and San Joaquin Delta ecosystems. These species include the Delta Smelt, Steelhead Trout, and Spring and Winter-Run Chinook Salmon. The relationship of these species to a Reclamation Program centers on the federal CVP in California and the impacts that both the CVP and SWP have on the San Francisco Bay and San Joaquin Delta ecosystems. Due to the listing of these species and recent court rulings, southern California's ability to access imported water from the Bay-Delta has already been restricted. This court action is designed to retain water in the ecosystem for the benefit of and to accelerate the recovery of these listed species. The proposed Project is designed to aid Upper District's service area in reducing its dependence on imported water from the Bay-Delta watershed.

Climate change has increased the variability of the supply from the SWP. As the Project seeks to offset imported water deliveries to the District by 1,620 AFY, benefits also include alleviating stress and limiting ecological impacts on the Bay-Delta habitat. More water remaining in the Bay-Delta benefits the CVP and the SWP. The CVP reduces flood risk for the Central Valley, and supplies the Central Valley domestic and industrial water. The SWP provides a water supply and delivery system to distribute water across California. Both the CVP and SWP rely on water supply in the Bay-Delta. Reclamation and the California DWR coordinate on the Bay-Delta water balance for uses in the SWP and CVP. Therefore, the CVP benefits from more water remaining in the Bay-Delta and the SWP systems.

Locally, the proposed Project will benefit the recovery of listed Santa Ana Sucker in the San Gabriel River Watershed by reducing urban runoff and nonpoint source pollution through better leak management. The San Gabriel River Watershed, which includes the San Gabriel Mountains National Monument, consists of extensive areas of undisturbed riparian and woodland habitats in its upper reaches and drains 690 square miles of eastern Los Angeles County. Fires, mudslides, intrusion of non-native vegetation, and heavy recreational use all contribute to accelerated erosion and heavy siltation of the San Gabriel Canyon reservoirs and streams in the watershed; further supporting the need for the Project. The Project benefits are significant, as over 1.6 million people visit the National Monument annually to hike and walk, which represents an economic value of over \$144 million to those visitors and over \$27.4 million towards wages and income of local small businesses. Reducing runoff pollution into the San Gabriel River reduces siltation downstream. By reducing runoff through leak repairs as proposed in the Project, less pollution will make its way into the San Gabriel River Watershed, improving ecological resiliency for one of the largest contiguous stands of Bigcone Douglas-fir and Canyon Oaks in the Upper San Gabriel River Watershed. Climate change and the degradation of air quality is impacting Forest health by stressing vegetation and resulting in lower water quality and productivity. Riparian areas within the East, West, and North Forks of the San Gabriel River provide important habitat linkages, and sensitive resource areas for wildlife. The West Fork of the San Gabriel River is one of two streams in the National Monument being managed as a wild trout area. The Project will reduce pollution entering these important ecological areas.

- **Will water remain in the system for longer periods of time? If so, provide details on current/future durations and any expected resulting benefits (e.g., maintaining water temperatures or water levels).**

Yes, water will remain in the system for longer periods of time. The Project provides environmental benefits and improves the status of state listed species by making more water available in the Bay-Delta to support the species and their habitats. In FY 19/20, a total of 71,800 AF of water was imported from the northern California Bay-Delta area through the SWP and from the CRA to meet the District's demand for water. With a reduction in this imported water demand by 1,620 AFY through the Project, the impact on the habitats of

the Delta Smelt, Salmon, and other state listed species currently impacted by water pumping activities will be alleviated to the extent of the Project. This benefit will be realized for the 10-year life of the Project.

• Will the project benefit species (e.g., federally threatened or endangered, a federally recognized candidate species, a state listed species, or a species of particular recreational, or economic importance)? Please describe the relationship of the species to the water supply, and whether the species is adversely affected by a Reclamation project or is subject to a recovery plan or conservation plan under the Endangered Species Act (ESA).

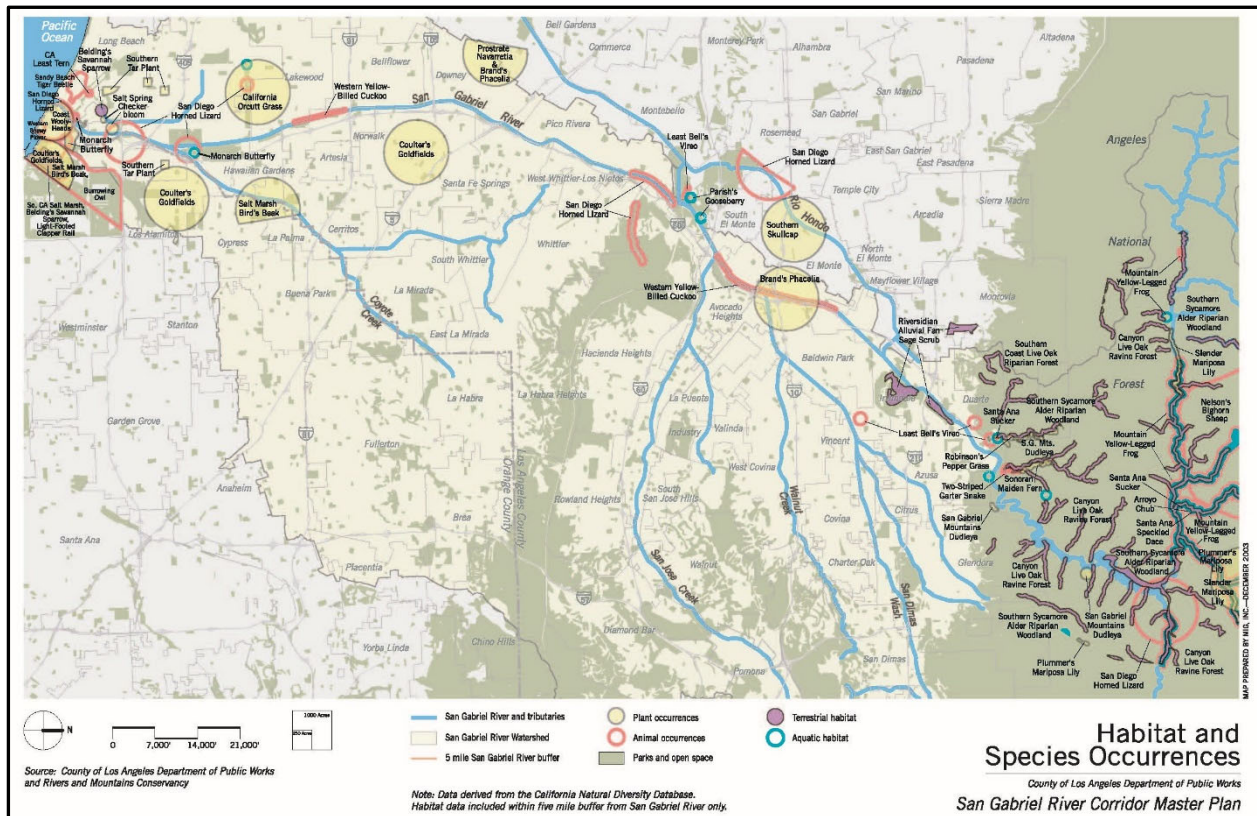
The Project will benefit state listed species by making more water available in the Bay-Delta to support the species and their habitats. The District imports 36% of its water supply from MWD, which originates from the Colorado River and SWP. As the Project seeks to offset imported water deliveries to the region by 1,620 AFY, benefits also include alleviating stress on the Bay-Delta habitat. In the last five years, between 26,734 AFY and 48,696 AFY of imported water was moved from the northern California Bay-Delta area through the SWP and from the CRA to meet Upper District's demand for water. Rationing water supplies received from the Bay-Delta helps limit the ecological impact of importing water. Twenty-nine known species of fish once populated the estuary, and currently 12 of those species are considered gone or threatened by extinction. The Bay-Delta is also home to the Delta Smelt, which is a protected species through a 2007 court order. The Delta Smelt are endemic to the upper Sacramento-San Joaquin Estuary of California, and are threatened with extinction due to anthropogenic alterations to their ecosystem, including urbanization, non-native species, water diversions, contaminants, and the conversion of complex tidal habitats to leveed channels. The Delta Smelt species is subject to a recovery plan under the Endangered Species Act (ESA), and was included in the Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes initially approved in November 1996. Efforts to protect the endangered fish from further decline have focused on limiting or modifying the large-scale pumping activities of state and federal water projects at the southern end of the estuary. However, these efforts have not prevented the species from becoming functionally extinct in the wild. They were listed as threatened by both federal and state governments in 1993, and sustained record-low abundance indices prompted their listing as endangered under the California ESA in 2010. Any reduction in water use from the SWP for this region has a positive impact on the species in and around the Bay-Delta area. Since 36% of Upper District's water supply is imported from the Colorado River and SWP (71,800 AF in FY 19/20), with a reduction in this imported water demand by 1,620 AFY (2.3%) as a result of the Project, the impact on the Delta Smelt, Salmon, and other state listed species currently impacted by water pumping activities will be alleviated.

The Project will also benefit species in the San Gabriel River Watershed by implementing leak identification, repair, and installation of water conservation devices throughout the District service area. The natural, open space areas in the watershed are biologically rich areas that provide critical habitat to endangered species and upland habitat, and connectivity between various habitat types. As described in the Greater Los Angeles County Integrated Regional Water Management Plan— *Appendix M Upper San Gabriel River and Rio Hondo Subregional Plan* (RMC Water and Environment, in association with Geosyntec Consultants, 2013), critical habitat areas have been established by the ESA to prevent the destruction or adverse modification of designated critical habitat of endangered and threatened plants and animals. Within the Subregion, there are 8,100 acres of designated critical habitat defined for the endangered Brauton's milk-vetch, California gnatcatcher, and mountain yellow-legged frog. **Figure 3** below shows the Habitat and Species Occurrences in the San Gabriel River (County of Los Angeles Department of Public Works, *San Gabriel River Corridor Master Plan*, Map 2-2, June 2006). The Project will have a positive impact on the San Gabriel River watershed by conserving water and reducing leaks, thereby reducing runoff and nonpoint source pollutants that would

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otherwise make its way into the habitats of these listed species. The Project will have no negative impact on the listed species in the San Gabriel River Watershed. Instead, the Project may contribute to its protection by reducing the amount of nonpoint source pollution entering its waters.

Figure 3. San Gabriel River Habitat and Species Occurrences



• **Please describe any other ecosystem benefits as a direct result of the project.**

Ecosystem benefits as a direct result of the Project include protecting, restoring, and enhancing the Watershed's groundwater basins and native habitats, which is vital to preserving areas that will contribute to the natural recharge from precipitation and improve downstream water quality. The Project will reduce nonpoint source pollution from entering the watershed through leak reduction. As identified in the Greater Los Angeles County Integrated Regional Water Management Plan – Appendix M Upper San Gabriel River and Rio Hondo Subregional Plan (RMC Water and Environment, in association with Geosyntec Consultants, 2013), the watershed has 303(d) listings related to both human activities and natural sources. Human activity can produce poor water quality due to trash, nutrients from a wastewater treatment plants, metals, and toxic pollutants. These pollutants can be carried in stormwater runoff and through point source discharges, impacting streams, canyon ecosystems, and eventually beaches and offshore waters. Natural sources of contaminants primarily include minerals and metals from underlying local geology. Even though agencies and cities in the Subregion have significantly reduced pollutants that are discharged to water bodies from individual point sources since the Clean Water Act was established, many of the major water bodies are still considered impaired due to trash, bacteria, nutrients, metals, and toxic pollutants. The Project will benefit the watershed's ecosystem by reducing urban runoff and nonpoint source pollution through better leak management.

The Project will protect groundwater basins/aquifers. Groundwater basins are an important part of the hydrology that supports local ecosystem functions, several groundwater basins and runoff from the San Gabriel Mountains provide significant water supplies to the Subregion. Groundwater quality in the Main Basin is managed by the Main San Gabriel Basin Watermaster under its authority from the court. Management of water quality in the groundwater basins of the watershed is essential to preserving their utility. Water pumped from the Main Basin is used as potable supply. Though water quality is good in most areas, constituents of concern for the Main Basin include high Total Dissolved Solids, nitrate, Volatile Organic Compounds, perchlorate, and N-Nitrosodimethylamine. Due to industrial and commercial contamination, five Operable Units have been defined by the EPA's Superfund Program and each has a specific plan laid out to address contamination remediation. Several treatment facilities are in place to treat groundwater pumped out of this basin (San Gabriel Basin Water Quality Authority, 2012). By reducing the demand on groundwater, more water will remain in the basins to address constituents of concern and to support local ecological habitat.

• Will the project directly result in more efficient management of the water supply? For example, will the project provide greater flexibility to water managers, resulting in a more efficient use of water supplies?

Upper District is a wholesale water supplier that provides treated imported water to its member agencies and untreated imported water to replenish groundwater supplies of the Main Basin. The Project directly results in more efficient management of imported water supply in the SWP and CRA, as well as groundwater from the Main Basin. The Main Basin groundwater supply is highly variable due to weather and drought conditions. For example, the Main Basin groundwater level is at 185 feet as of July 1, 2022, compared to the historic low of 169.4 feet on November 21, 2018; this means the current level is only 15.6 feet above the historic low for the Main Basin (Main San Gabriel Watermaster, Accessed online July 7, 2022: www.watermaster.org). In addition, there are reduced SWP allocations now and anticipated in the future. The imported water supplies saved by the Project will provide water to other agencies for agricultural, municipal, industrial, environmental, and recreational purposes. Any water saved that reduces the District's demand for these imported water supplies provides more water for other SWP, CRA, benefiting multiple water users, including the Main Basin water users, and the environment.

To manage system water losses and reduce leaks, leak detection programs are identified as demand management measures in the District's 2020 UWMP. The District's 2020 UWMP includes a Water Shortage Contingency Plan that also discusses water use, water loss, and water conservation measures required to reduce water loss throughout the District's service area. The Project improves water management by providing leak detection, water loss reduction, and increased water conservation. The Project's more efficient use of water supplies reduces the District's water demand and provides greater flexibility to the District water managers, resulting in more efficient use of imported SWP water and local groundwater supplies.

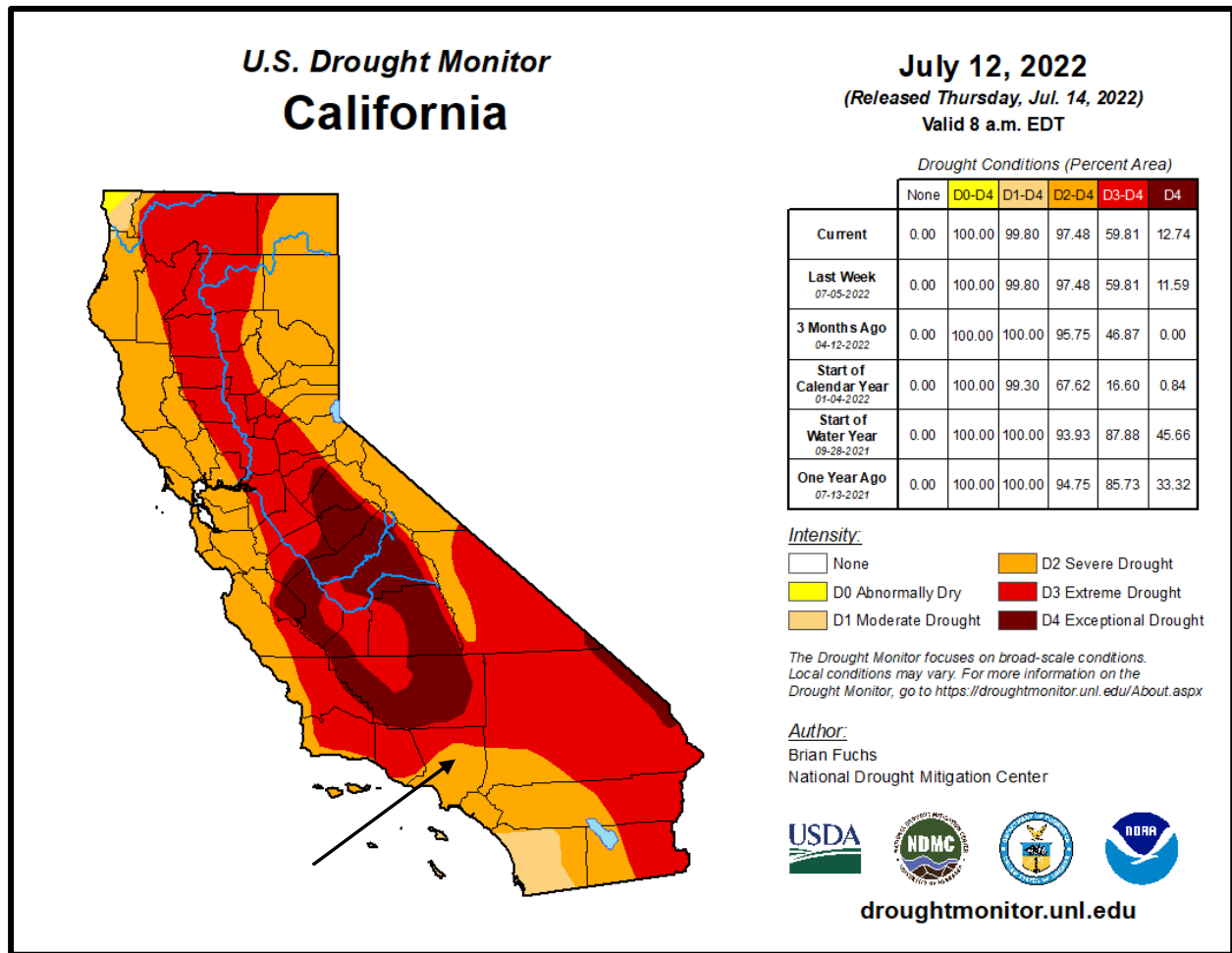
Addressing a specific water and/or energy sustainability concern(s).

• Explain and provide detail of the specific issue(s) in the area that is impacting water sustainability, such as shortages due to drought and/or climate change, increased demand, or reduced deliveries.

The Project will address the water sustainability concern of limited supply and drought conditions in Los Angeles County, California by saving 1,620 AFY of imported potable water. California's water supply sustainability has been an increasing concern as water suppliers work to manage water demands versus environmental impacts. California is experiencing historic drought conditions across the state. Los Angeles County is experiencing severe to extreme drought conditions, and the majority of California is experiencing

severe to exceptional drought conditions per the U.S. Drought Monitor's Map presented in **Figure 4** below.

Figure 4. U.S. Drought Monitor Map



The proposed Project is located in the San Gabriel River Watershed, within the Greater Los Angeles Integrated Regional Water Management (IRWM) Region in Los Angeles County, an area currently suffering from drought. This region depends primarily on a combination of groundwater and imported water to meet its water demands. Per the District's 2020 UWMP, during the past 10 years, Upper District experienced a five consecutive-year drought within its service area from FY 2011-12 to FY 2015-16.

In March 2022, Governor Newsom issued an executive order calling on state and local agencies to increase water conservation measures following the driest January, February, and March on record. Executive Order N-7-22 expands upon a series of existing executive orders aimed at reducing water use, improving drought resiliency, and responding to future climate challenges such as more frequent, prolonged, and intense drought. Additionally, after a record dry start to 2022, California water officials announced March 18, 2022 that they were cutting SWP allocations from 15% to 5%, and warned residents to brace for a third year of drought (Association of California Water Agencies, "State Reduces SWP Allocation" March 18, 2022, available online July 7, 2022 at: <https://www.acwa.com/news/state-reduces-swp-allocation/>).

The drought's impacts have been felt by communities in the service area since January 2014 when then Governor Brown issued a drought emergency and directed state officials to take all necessary actions to prepare for the drought conditions and called upon every Californian to conserve water. As water supplies continued to diminish, the Governor's office called on all water agencies to implement drought measures to reduce water demands, and DWR reduced SWP allocations for southern California contractors to zero on January 31, 2014, and then 5% for the balance of 2014. Water resources remained very low throughout the entire state with DWR restricting SWP suppliers to 15-20% of their requested allotments until April of 2017 when heavy precipitation occurred across the state. This presented a new problem of landslides and flooding as severe storms swept through the area, resulting in a new declared emergency for severe storms.

The U.S. Drought Monitor declared the majority of Los Angeles County, California, in severe to extreme drought in July 2022 as shown in **Figure 4**. The entire state of California is in an intensifying drought with record-breaking temperatures and lack of rainfall across the Western United States. The District is located in a semi-arid environment. The local groundwater supplies and the availability for imported water for groundwater replenishment are influenced by annual precipitation. As a result, the District is vulnerable to water shortages due to seasonal hot weather and climatic influences. Efforts to reduce the District's water demand will also benefit other local and regional communities that rely on pumped groundwater or imported water sources.

The use of leak detection to identify and reduce water losses and water waste and installation of water conserving fixtures is of great importance to the District due to the semi-arid climate and existing constraints on water supply (i.e., pollution and drought). The District's improvements in water use efficiency will free up additional supply to address shortages locally and throughout the region. Drought impacts to the region, including the District service area, are shown in **Table 2** on the following page.

On June 29, 2022, the National Oceanic Atmospheric Administration and National Integrated Drought Information Systems reported on their website, Drought.gov, that California remains entrenched in severe-to-exceptional drought, likely ensuring that the region will suffer back-to-back dry water years. In California, 99.8% of the state is in drought, and the driest year to date was 2022, over the past 128 years according to the U.S. Drought Monitor. DWR monitors regional snowpack conditions from automated snow sensors (<http://cdec.water.ca.gov/snowapp/sweq.action>). Statewide snow survey measurements continue to reflect the overall dry conditions with statewide snow water equivalent at 0.1 inches, or 0% of the April 1 average. Storage in the largest northern California reservoirs is well below average, reflecting cumulative impacts from recent dry years. Virtually all the state remains in a precipitation deficit. Drought impacts (e.g., pasture conditions, ecosystem health, water supply, fire potential) will likely intensify and expand given back-to-back dry years. Drought preparedness is key.

Typically, California relies on a handful of large storms. On average, the snowpack supplies about 30% of California's water needs as it melts in the spring and early summer. Per the California DWR, as of June 28, 2022, California's five largest reservoirs held between 38% (Trinity) and 79% (Don Pedro) of their historical averages. Lake Shasta, California's largest surface reservoir, was 50% of its historical average and 39% of total capacity. And in other parts of the southwest, per the Reclamation website, as of June 28, 2022, In the Lower Colorado River Basin, Lake Mead is 28% full, Lake Mojave is 95% full, and Lake Havasu is 94% full (<https://www.usbr.gov/lc/region/g4000/TeacupDiagram.html>) and in the Upper Colorado River Basin, Lake Powell is 28% full, Navajo is 57% full, Blue Mesa is 47% full, Morrow Point is 94% full, Flaming Gorge is 75% full, and Fontenelle is at 93% full (<https://www.usbr.gov/uc/water/basin/index.html>).

Water conserved as a result of the Project’s implementation represents a decrease in the amount imported; thereby, the conserved water will remain at its source in the Bay-Delta or Colorado River for other uses. The Project will yield real water supply benefits to urban water users in the short term by conserving 1,620 AFY, directly offsetting approximately 2.3% of the District’s potable and raw water demand (71,800 AF in FY 19/20). This benefit will be realized annually, year-round for the 10-year life of the Project.

Table 2. Summary of Drought Impacts

| Risk to Drinking Water | Risk to Ecosystem | Risk to Groundwater | Other Drought-Related Impacts |
|---|---|--|--|
| <ul style="list-style-type: none"> - Los Angeles County in a state of severe to extreme drought in 2022 - Not receiving imported water supply for groundwater recharge and management during catastrophic or drought conditions | <ul style="list-style-type: none"> - Hydrologic modifications threaten the Santa Ana Sucker, Brauton’s milk-vetch, California gnatcatcher, and mountain yellow-legged frog. - Spread of nonnative Quagga Mussels and invasive plants - Trees and other vegetation show signs of stress - Instability in soil and slopes due to weak tree/vegetation roots | <ul style="list-style-type: none"> - During drought conditions, groundwater supply is low due to limited rainfall and surface water replenishing the groundwater basins - Increased groundwater quality issues due to decreased flows infiltrating into basins and increased groundwater pumping | <ul style="list-style-type: none"> - Increase in water demands for landscape use due to higher temperatures - Catastrophic wildfires, including the 2015 Cabin fire that burned 1,470 acres in San Gabriel Canyon and the 2020 Bobcat fire that burned approximately 114,577 acres in the San Gabriel National Monument - Post-wildfire conditions threatening surface water quality due to increased sediment and contaminant flow within the watershed - Limited imported water supply threatens residents, including disadvantaged communities and business, impacting real estate property values, if water is not available for irrigation - Tension over finite water supplies - GHG emissions contributing to decline in the Angeles National Forest Ecosystems |

• Explain and provide detail of the specific issue(s) in the area that is impacting energy sustainability, such as reliance on fossil fuels, pollution, or interruptions in service.

As discussed in Subcriterion No. B.2, Upper District does not have its own imported water distribution system and relies on MWD’s distribution system for delivery of treated and untreated imported water to Upper District’s member agencies. Consequently, Upper District has no additional or direct energy use. Importing water is extremely energy intensive; therefore, a reduction in water loss and overall consumption will positively impact energy sustainability of the overall system operations. Over the past several decades, MWD has implemented many energy initiatives that have reduced energy costs and use, while diversifying its energy portfolio. According to MWD’s 2020 UWMP, these have included 130 megawatts (MW) of small hydropower generating facilities, 5.5 MW of solar power generation installations, and a 50-year agreement executed in 2017 to receive low-cost carbon-free hydropower from Hoover Dam for CRA operations. MWD’s programs also include the use of ride share programs and reduction of GHG emissions. Collectively these actions are intended to impact the effects of climate change. Despite these efforts, external factors have resulted in increased energy costs. Five major drivers influence the future energy market and MWD’s corresponding energy sustainability strategy, including: progression of environmental regulations, energy market pricing uncertainty, grid reliability, climate change and natural disasters, and technological advances and incentives. Despite these setbacks, MWD is continuing to support the state’s Climate Action Plan through

implementation of its Energy Sustainability Plan.

- **Please describe how the project will directly address the concern(s) stated above. For example, if experiencing shortages due to drought or climate change, how will the project directly address and confront the shortages?**

The Project will assist in reducing demands on energy by saving 5,151,600 kWh of energy per year through saving/conserving 1,620 AFY of water. The Project also directly addresses the current drought conditions by reducing the demand on SWP (Bay-Delta), CRA, and the groundwater basins. Water conservation reduces imported and groundwater demand, and saves associated energy required to transport these sources of supplies.

- **Please address where any conserved water as a result of the project will go and how it will be used, including whether the conserved water will be used to offset groundwater pumping, used to reduce diversions, used to address shortages that impact diversions or reduce deliveries, made available for transfer, left in the river system, or used to meet another intended use.**

The water conserved by the Project will be used to offset imported water demands, and diversions from the Bay-Delta and CRA. Therefore, the conserved water will remain at its source in the Bay-Delta and CRA for other uses. The Project will yield real water supply benefits to urban water users in the short term by conserving 1,620 AFY, directly offsetting approximately 2.3% of the District's total imported water supply (71,800 AF in FY 19/20). This benefit will be realized annually, year-round for the 10-year life of the Project.

Both the SWP and CVP rely on water in the Bay-Delta to provide water supply across California and for flood management. Reclamation and the California DWR coordinate on the balance of water in the Bay-Delta for uses in the SWP and CVP. The Project will help reduce demand on the SWP and CVP by conserving 1,620 AFY of water, allowing this same amount of water to remain at its source in the Bay-Delta to support other uses. Therefore, the SWP and CVP both benefit from more water remaining in the Bay-Delta.

The SWP typically provides about a third of Southern California's water. According to Reclamation's Current Status Report on Glen Canyon Dam (June 15, 2022 available online at: <https://www.usbr.gov/uc/water/crsp/cs/gcd.html>), at the beginning of water year 2022, total system storage in the Colorado River Basin was 22.80 million acre-feet (MAF), which is 38% of the 59.60 MAF total system capacity). This is a decrease of 5.97 MAF over the total storage at the beginning of water year 2021 when total system storage was 28.77 MAF (48% of capacity). Based on current inflow forecasts, the current projected end of water year total Colorado Basin reservoir storage for water year 2022 is approximately 19.56 MAF (33% of total system capacity). Imported water is impacted by climate variation by being greatly limited during the current and projected drought conditions. Climate variation presents unpredictable weather patterns and unreliable supplies of water. Therefore, the reliability of imported water availability has been significantly reduced.

In FY 2019-20, the District's water supply consisted of 3,000 AF treated imported water, and 68,800 AF untreated imported water for groundwater replenishment, for a total of 71,800 AFY. Per the District's 2020 UWMP, Upper District depends upon MWD to supply imported water to Upper District, which in turn supplies treated and untreated imported water to its member agencies. Untreated imported water is delivered to the Main Basin to satisfy its Replacement Water obligations required under the Main Basin Judgment. Therefore, this water conservation and water use efficiency Project will improve the reliability of water supplies from the Main Basin, which would ultimately benefit people and the environment associated with the Main Basin. The Project will result in an additional availability of approximately 1,620 AFY of water that will otherwise be lost

and unavailable to the District and the region, or the conserved water will remain at its source in the Bay-Delta, CRA, or Main Basin for environmental and other uses.

The Project will directly contribute to building drought resiliency by implementing a high caliber and proven water management strategy that emphasizes water reliability, conservation, and increase water use efficiency. All of these factors are critical for ensuring water supply sustainability in the future, given the increasing costs of imported water and the severe water supply challenges that Southern California constantly faces.

- **Provide a description of the mechanism that will be used, if necessary, to put the conserved water to the intended use.**

The conserved water will be reflected in reduced potable demands in the District's water supply, making more water available to support Bay-Delta and CRA ecosystems by leaving more water in the Bay-Delta. The water saved as a result of this Project will allow the District to import less potable water. The Main Basin's groundwater supply is highly variable due to weather and drought conditions and depends on the delivery of untreated imported water for replenishment. Therefore, the imported water supplies saved by the Project can provide water to other agencies for agricultural, municipal, industrial, environmental, and recreational purposes. Water saved reduces the District's demand for these imported water supplies providing more water for other SWP water users, benefiting multiple water users and the environment.

- **Indicate the quantity of conserved water that will be used for the intended purpose(s).**

The Project will yield real water supply benefits to urban water users in the short term by conserving 1,620 AFY, directly offsetting approximately 2.3% of the District's total imported water supply of 71,800 AF in FY 19/20). This benefit will be realized annually, year-round for the 10-year life of the Project.

Other Project Benefits

(1) Combating the Climate Crisis:

- o **Please provide specific details and examples on how the project will address the impacts of climate change and help combat the climate crisis.**

The Project addresses the impacts of climate change and helps to combat the climate crisis by reducing water and energy consumption due to decreased water loss and increased conservation, reducing the amount of water needed to be pumped, imported or recycled locally.

- o **Does this proposed project strengthen water supply sustainability to increase resilience to climate change?**

The Project strengthens water supply sustainability to increase resilience to climate change by providing the public with enhanced water use awareness and water conservation education immediately, for the life of the Project, and beyond as potential upgrades are made. The proposed educational materials included in the Water Smart Home Kit will remind water users about the importance of water conservation and water use efficiency and emphasize the need to take a proactive role in their water use management. The District has a strong customer service program that has led to great partnerships and relationships with the water users in the District service area, and the Project will integrate proactive outreach and education elements to promote the water saving and cost saving benefits provided by water leak detection an installation of outdoor and indoor water-efficient fixtures.

In addition, the Project is market-transformative and could become mainstream based on beneficial results.

The Project will assist the District in serving as an example of effective water use efficiency and water conservation to other water agencies that are also heavily dependent on imported water supplies. The region includes many other water suppliers that could use the collective results of the Project to advance water conservation improvement measures. For example, recent successful implementation of the previous District direct install program for Disadvantaged Communities (DACs) was a key factor in the District pursuing the proposed Project to widen the impact to its entire service area. Walnut Water Agency and the San Gabriel Valley Water Company, agencies within the region, offer programs similar to the proposed Project.

o Will the proposed project establish and utilize a renewable energy source?

No, the Project will not establish and utilize a renewable energy source.

o Will the project result in lower greenhouse gas emissions?

Yes, the Project will result in lower GHG emissions. A total of 2,645,347 lbs. of CO₂ will be saved annually as a result of the Project's estimated energy savings from water savings of 1,620 AFY.

(2) Disadvantaged or Underserved Communities:

a. Does the proposed project directly serve and/or benefit a disadvantaged or historically underserved community? Benefits can include, but are not limited to, public health and safety through water quality improvements, new water supplies, new renewable energy sources, or economic growth opportunities.

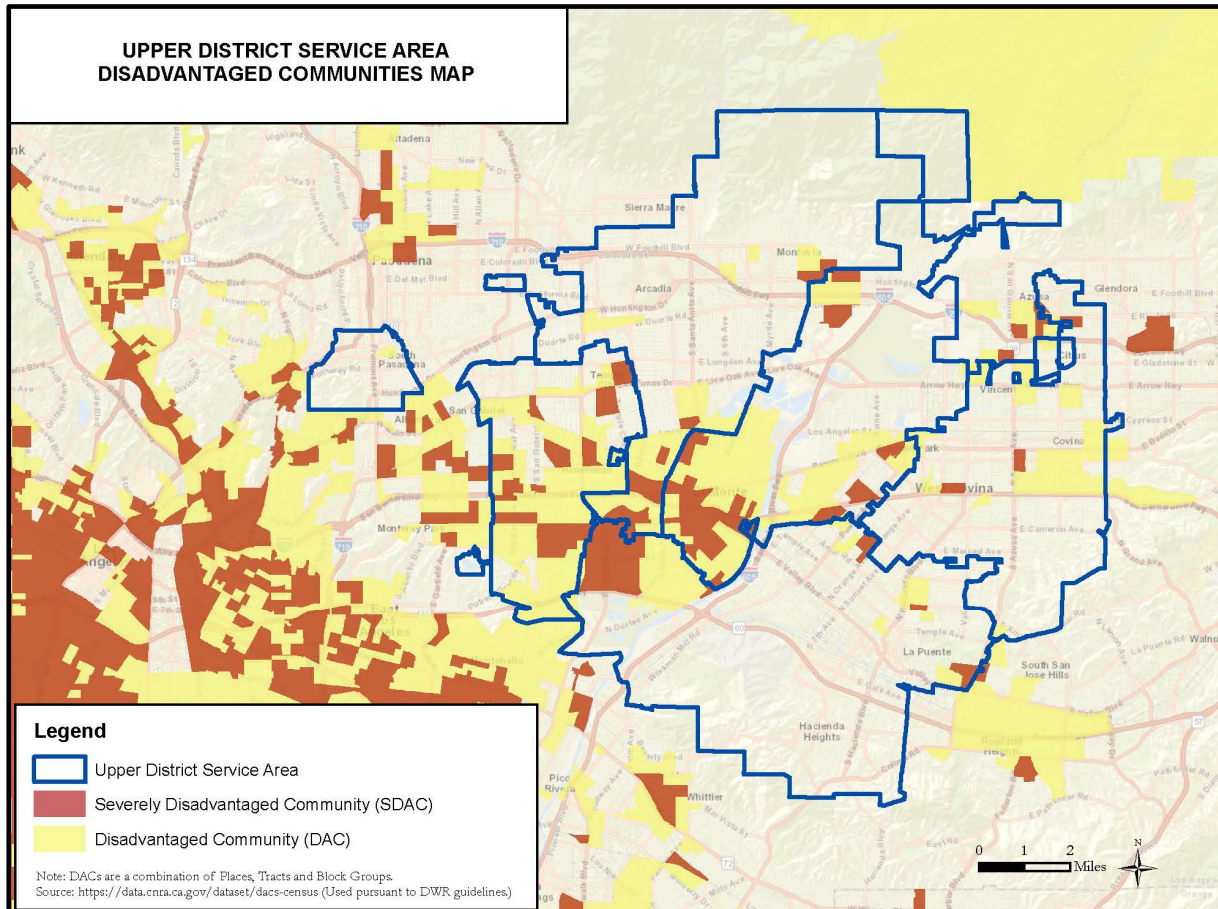
The Project is needed to ensure DACs in the District's service area have a reliable, affordable potable water supply. The Project will conserve up to 1,620 AFY of potable water thereby increasing the reliability of water available to serve DACs within Upper District's service area. Upper District's service area includes 950,000 residents, as well as businesses, throughout 144 square miles of area that include all or part of 17 cities and portions of unincorporated Los Angeles County, including communities classified as DACs. Based on 2020 U.S. Census data, the population within Upper District service area is about 860,472, and the population within the SDAC and DAC areas within Upper District service area is about 343,359. Therefore, approximately 40% of the population in Upper District's service area is classified as disadvantaged ($343,359/860,472 = 40\%$). Project implementation will occur throughout the District's service area. The Project will enhance water quality for DACs by removing nonpoint source pollutants from the waterways used for recreational purposes. DACs reside in the District's service area as shown in **Figure 5** on the following page. The Project's water savings of 1,620 AFY will help to provide a reliable supply for the District's low-income households and DACs. Integrating system-wide water conservation measures is critical for meeting water supply demands. From a social equality and environmental justice perspective, water must be served to lower income households as a priority.

b. If the proposed project is providing benefits to a disadvantaged community, provide sufficient information to demonstrate that the community meets the disadvantaged community definition in Section 1015 of the Cooperative Watershed Act, which is defined as a community with an annual median household income that is less than 100 percent of the statewide annual median household income for the State, or the applicable state criteria for determining DAC status.

As defined by the California DWR, DACs are census geographies with an annual MHI that is less than 80% of the Statewide annual MHI. Severely Disadvantaged Communities (SDACs) are census geographies having less than 60% of the Statewide annual Median Household Income (MHI). DACs reside in the District's service area as shown in **Figure 5**. The American Community Survey (ACS) of the U.S. Census dataset was

used as a source to estimate the communities' MHI. The ACS data provided estimates of MHI for different census geographies, such as for states, counties, census places (incorporated cities and unincorporated towns), census tracts, and census block groups. Using the ACS data for 2014-2018, 80% of the statewide MHI is \$56,982, and 60% of the statewide MHI is \$42,737.

Figure 5. Disadvantaged Communities within District Service Area



- c. If the proposed project is providing benefits to an underserved community, provide sufficient information to demonstrate that the community meets the underserved definition in E.O. 13985, which includes populations sharing a particular characteristic, as well as geographic communities, that have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life.**

The term “underserved communities” refers to populations sharing a particular characteristic and geographic communities who have been systematically denied a full opportunity to participate in aspects of economic, social, and civic life. In the context of the Federal workforce, this term includes individuals who belong to communities of color, such as Black and African American, Hispanic and Latino, Native American, Alaska Native and Indigenous, Asian American, Native Hawaiian and Pacific Islander, Middle Eastern, and North African persons. Upper District covers approximately 144 square miles and includes 18 cities and portions of unincorporated Los Angeles County with almost 1 million residents. Upper District’s service area includes the cities of Arcadia, Azusa, Baldwin Park, Bradbury, City of Industry, Covina, Duarte, El Monte, Glendora, Irwindale, La Puente, Monrovia, Rosemead, San Gabriel, South El Monte, South Pasadena, Temple City,

and West Covina. The 2020 U.S. Census reported that the racial makeup of the cities in Upper District's service area includes White, Black or African American, Native American, Asian, Pacific Islander, from other races, and from two or more races. Therefore, implementation of the Project throughout the District's service area will conserve water and benefit members of underserved communities as identified in the 2020 U.S. Census.

(3) Tribal Benefits:

a. Does the proposed project directly serve and/or benefit a Tribe? Will the project increase water supply sustainability for an Indian Tribe? Will the project provide renewable energy for an Indian Tribe?

The Project will directly benefit tribes in the San Gabriel River Watershed. Most of the San Gabriel River is in traditional Tongva territory, although the Chumash (who inhabited areas further west) also used the area. Tongva villages were mostly located on high ground above the reach of winter floods. **Figure 6** on the following page shows the locations of the Gabrielino-Tongva Indian tribe, known as the San Gabriel Band of Mission Indians. The original people of Los Angeles, the Tongva, defined their world as Tovaangar. It extended from Palos Verdes to San Bernardino, from Saddleback Mountain to the San Fernando Valley. The proposed Project supports tribal resilience to climate change and drought impacts by making more water available in the San Gabriel River Watershed for tribes that rely on the river as a source of water.

Reducing demand on imported potable supplies ensures local supply reliability for tribal communities in the San Gabriel River Watershed. **Figure 6** also identifies the locations of tribal reservations throughout the Los Angeles region. On a statewide level, the Project may also help Reclamation meet trust responsibilities in the SWP area since the Project will be reducing demand on this source. Any increase in water supply sustainability and greater availability in overall water supply resulting from water use efficiency efforts would help Reclamation in meeting the federal Indian trust responsibility, a legally enforceable fiduciary obligation on the part of the United States to protect tribal treaty rights, lands, assets, and resources, of the Tribes. The Project will not provide renewable energy for an Indian Tribe.

b. Does the proposed project directly support tribal resilience to climate change and drought impacts or provide other tribal benefits such as improved public health and safety through water quality improvements, new water supplies, or economic growth opportunities?

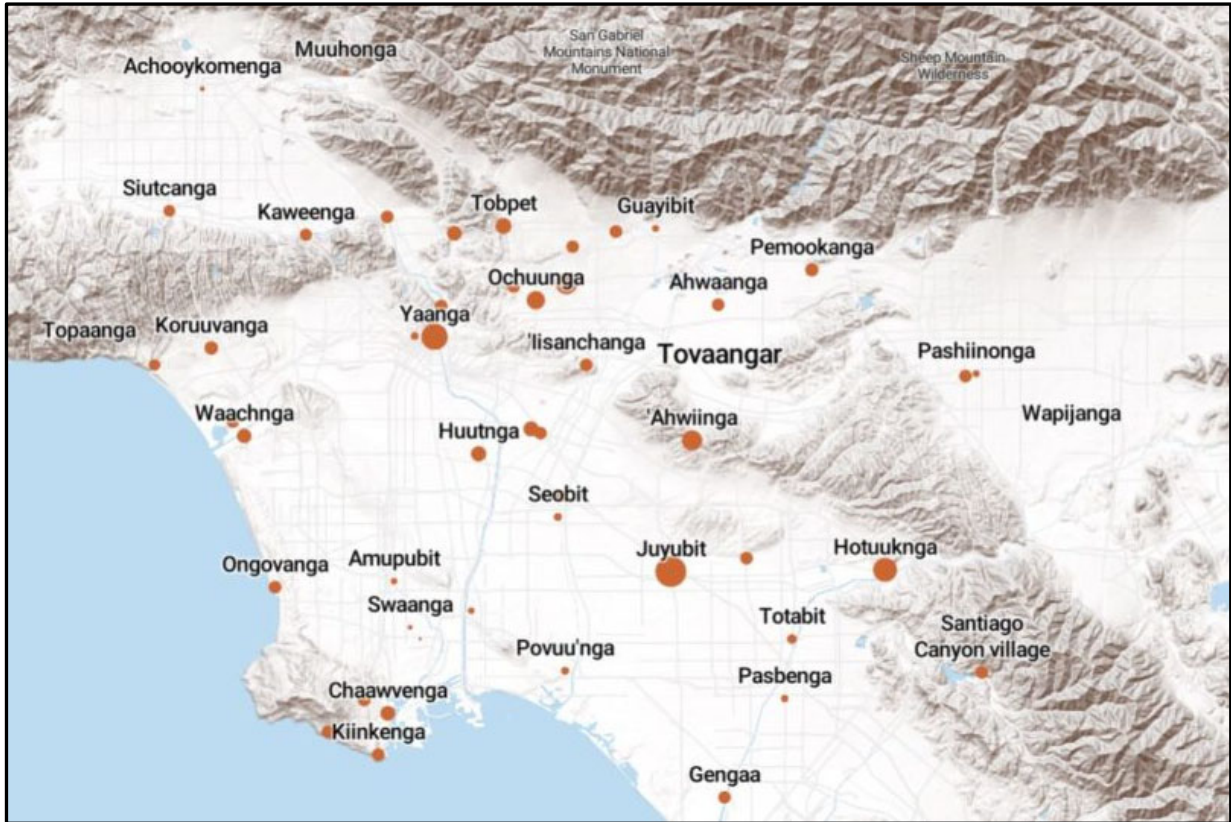
The Project supports tribal resilience to climate change and drought impacts by reducing runoff and nonpoint source pollution in the San Gabriel River Watershed, where tribes reside. The Project will directly benefit the tribes in the San Gabriel River Watershed by reducing nonpoint source pollution into existing groundwater supplies. **Figure 6** above shows historically where tribes resided in the Los Angeles County region.

On a statewide scale, water conserved as a result of the Project will reduce demands on the Bay-Delta, making more water available in the Bay-Delta for tribes that rely on the SWP as a source of water. The Project reduces demands on imported supply from the SWP, as the District relies on imported water from SWP from the Bay-Delta to replenish groundwater basins as their primary source of water. The Project will decrease imported water demand by up to 1,620 AFY through water conservation and will ultimately benefit the Bay-Delta by reduced demand on this source. Imported water savings associated with the Project translate to more water remaining in the fragile Bay-Delta systems.

This Project also supports the Colorado River WaterSMART Basin Study developed in partnership with Reclamation that confirms that without future actions, the Basin faces a range of potential future imbalances

between supply and demand. One of the primary adaptation strategies identified in this study included water use efficiency and reuse. Greater water use efficiency would reduce the stress on the system and its limited water supply. The Project would conserve potable water supply by up to 1,620 AFY which would reduce that same amount of water imported from the CRA and SWP.

Figure 6. Tribal Locations in Los Angeles County



Source: Los Angeles Times, "Mapping the Tongva villages of L.A.'s past" By Sean Green and Thomas Curwen, May 9, 2019. Available 7/8/22 online: <https://www.latimes.com/projects/la-me-tongva-map/>

(4) Other Benefits: Will the project address water and/or energy sustainability in other ways not described above? For example:

a. Will the project assist States and water users in complying with interstate compacts?

The District relies on imported water from the SWP (Bay-Delta) to recharge its groundwater basins. Southern California relies heavily on the imported water from the SWP and CRA. By conserving 1,620 AFY of water, the Project reduces the demand on SWP water and makes more water available in the Bay-Delta. This indirectly reduces demand on the Colorado River, as half the state of California relies on the CRA for water supply. A decrease in demand in one source of imported water supply positively impacts the other source since the SWP and CRA are the two primary sources of potable water for Southern California. The Colorado River Interstate Water Compact of 1922 was an agreement among several western states including Arizona, Nevada, Colorado, California, New Mexico, Utah, and Wyoming that allocated water rights to particular bodies of water to the part states. The purpose of the compact was to provide equitable division and apportionment of the use of the water of the Colorado River System; establish the relative importance of the

different beneficial uses of water; to promote interstate comity; remove causes of present and future controversies; source the expeditious agriculture and industrial development of Colorado River Basin, the storage of its waters; and the protection of life and property from floods. The compact lives on today and any reduction in demand on the SWP or CRA helps California and other states in the compact comply with their water rights agreement.

b. Will the project benefit multiple sectors and/or users (e.g., agriculture, municipal and industrial, environmental, recreation, or others)?

The Project will benefit environmental and recreational sectors through water conservation, reduced leaks, and reduced nonpoint source pollution entering the San Gabriel River Watershed. The region contains extraordinary natural resources, including the Angeles National Forest, which serves as the headwaters for the San Gabriel River. Downstream, the San Gabriel River and its tributaries provide habitat to riparian and aquatic species, and provide connectivity to upland habitats. The scrub, woodland, and riparian habitats in the region support innumerable species, including the endangered Brauton's milk-vetch, California gnatcatcher, and mountain yellow-legged frog. The San Gabriel Watershed's wilderness encompasses some extremely rugged terrain, including steep, fractured slopes. Elevations range from 1,600 to 8,200 feet. The predominant vegetative type is chaparral, which covers about 75% of the wilderness in the lower elevations. Dense chaparral rapidly changes to pine and fir-covered slopes and majestic peaks, with glimpses of wildflowers and a variety of wildlife as you enter the upper elevations. The remainder of the vegetation is woodland, grasslands and mixed conifers. Wildland fires are a threat to the area, especially during periods of hot, dry Santa Ana Winds. The riparian woodlands located in canyon bottoms receive the most use. In addition to serving as habitat, these areas provide valuable open space and recreational areas for the residents of and visitors to the region. Much of the recreational use is concentrated on the few trails within the wilderness, causing some overuse and congestion. Popular recreation activities that occur in this area include hiking, fishing, waterplay and picnicking. It is one of the original wilderness areas nationally designated in 1964.

The importance of the watershed's habitats is underscored by the multiple environmental and ecological management plans currently in place, including the San Gabriel River Corridor Master Plan (County of Los Angeles Department of Public Works, 2006), and the Greater Los Angeles County IRWM – Appendix M Upper San Gabriel River and Rio Hondo Subregional Plan (RMC Water and Environment, in Association with Geosyntec Consultants, 2013). The Project will help reduce the nonpoint source pollutants from impacting the environmental and recreational benefits of the San Gabriel River Watershed.

c. Will the project benefit a larger initiative to address sustainability?

The Project will benefit the larger water reliability initiatives to reduce and maintain reductions in statewide urban water use by 20%, and support the District's water reliability plans to reduce demand on the SWP. A total of 1,620 AFY will be conserved by the Project benefitting the larger municipal initiative that was to achieve the statewide goal of 20% reduction in urban water use by 2020 as mandated by SBX7-7, or the Water Conservation Act of 2009, and maintain that reduction into the future. Future California reduction goals also include Water Use Objectives that subscribe to a specified gallons per capita per day for indoor and outdoor use, currently under development by DWR, which the Project will also support. Potable water savings from the Project will directly reduce the amount of groundwater pumped by the District and water demand imported from the SWP and allow 1,620 AFY to be conserved to instream flows in the SWP (Bay-Delta). In FY 19/20, approximately 71,800 AF of purchased imported water from SWP was delivered to the District for groundwater basin recharge and management.

Southern California obtains a large portion of its water supply from the SWP and the CRA. The Colorado River's long-term imbalance in future supply and demand is projected to be approximately 3.2 MAF by the year 2060. Approximately 40 million people rely on the Colorado River and its tributaries for water, with 5.5 million acres of land using Colorado River water for irrigation. From 2000 to 2015, there were only three years when the Colorado River flow was above average (MWD, 2015 UWMP, June 2016). The availability of water supplies from the SWP can be highly variable as well. In 2015, only 20% of the total allocation to MWD was available, while in 2016 only 60% of the total allocation to MWD was available. "Table A" water is the maximum entitlement of SWP water for each water contracting agency. In 2017, the final SWP Table A Allocation was 85% of the maximum allocation, amounting to 1.62 MAF to MWD. However, even with the rainfall during early 2019, Southern California was still in abnormally dry/drought conditions and is heavily reliant on imported water supplies from CRA and SWP. The Project's reduction on imported water demand supports state and federal water reliability initiatives.

d. Will the project help to prevent a water-related crisis or conflict? Is there frequently tension or litigation over water in the basin?

There is a water-related conflict over limited water supplies within the Bay-Delta and the Colorado River from which much of southern California receives imported water. The Project will help to reduce the amount of water needed for import to southern California through the MWD system. In addition, the Project may serve as a model for other agencies that are looking for ways to meet urban water use reductions. The District, as well as Southern California, is reliant on imported water supplies. Therefore, the water-related conflict within the Bay-Delta and Colorado River is significant, and implementing the Project will assist in increasing local water reliability and decreasing imported water demand. The groundwater pumpers are very active in the Main Basin and meet on a monthly basis through the Main San Gabriel Water Association.

Evaluation Criterion D: Complementing On-Farm Irrigation Improvements

The proposed Project indirectly complements on-farm irrigation improvements in the Bay-Delta region by reducing imported water demand, partially on the Bay-Delta (via the SWP) and CRA by approximately 1,620 AFY, making this same amount of water available for farm and agricultural practices in these regions. Water supplies in the Bay-Delta also support Reclamation's CVP. There is a particular effort in the Bay-Delta to support agriculture in the region. Through the Bay-Delta Initiative, the Natural Resources Conservation Service and its local partners aim to address the critical water quantity, water quality, and habitat restoration needs of the Bay-Delta region. The Bay-Delta region encompasses more than 38 million acres and is one of the most important estuary systems in the nation. This region provides drinking water for more than 23 million people and irrigation water to 4 million acres of farmland. More than \$400 billion in economic activities occur in the region. America's stewardship of the Bay-Delta is critical. Increased demand for limited water resources and declining water quality threatens the continued economic and environmental wellbeing of the region. The U.S. Department of Agriculture and the Natural Resources Conservation Service have partnered with agricultural producers, forest landowners, urban and suburban residents, and other conservation partners to restore wetlands and enhance aquatic and other wildlife habitat on working agricultural land and private non-industrial forest land in the Bay-Delta watershed. The Project will support the Bay-Delta Initiative and on-farm water use efficiency, conservation, and overall irrigation improvements by allowing more water to remain in the Bay-Delta.

Evaluation Criterion E: Planning and Implementation

Subcriterion No. E.1 - Project Planning

Planning efforts are included that provide support for the proposed Project.

- (1) Identify any District-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, System Optimization Review (SOR), Drought Contingency Plan or other planning efforts done to determine the priority of this project in relation to other potential projects.**

The Project is identified in Upper District's 2020 UWMP as one of its active water conservation efforts for its service area. The District's water conservation activities are addressed in the 2020 UWMP Chapter 9.0 Demand Management Measures (DMMs), which describes water conservation program coordination and the proposed Project. Page 9-6 explains that Upper District implements agency programs which include financial incentives for water conservation devices, technical support, and guidance, and regional implementation of programs, such as the proposed Project. As a wholesaler striving to meet its DMMs, Upper District strives to increase water use efficiency and also provide quality programs and technical assistance, when feasible, to support its retailers in meeting their Best Management Practices and DMMs. This Project works towards those efforts as well as the goal of achieving a reduction in water usage.

Upper District has a Water Use Efficiency Master Plan (A&N Technical Services, Inc., 2012) that includes a list of water use efficiency programs to provide a reliable and efficient supply of water for its customers. The Plan provides support for the proposed Project by identifying water use efficiency programs, including components of the proposed Project, as water saving methods.

To address water supply issues, Upper District prepared an Integrated Resource Plan in 2013 to explore various water supply options, including active water conservation efforts as a viable part of its water supply portfolio. The proposed Project supports the Integrated Resource Plan by implementing water use efficiency.

The Project implements urban water use efficiency goals stated in the California Water Plan Update 2018 by including water use efficiency, which is a main goal that will enable the region to manage water supplies and resources for future generations. The Project implements water conservation of up 1,620 AFY to reduce demand on imported potable water supplies.

The proposed Project also supports water conservation measures discussed in the WaterSMART Los Angeles Basin Study by the Bureau of Reclamation, Los Angeles County Flood Control District (LACFCD), and several local agencies. The LA Basin Study area includes the San Gabriel River Watershed, where Upper District's service area is located. The purpose of the LA Basin Study is to study long-term water conservation and flood control impacts from projected climate conditions and population changes in the Los Angeles Basin. The Study area covers approximately 1,900 square miles and is home to approximately 10 million people, or about one-quarter of California's population. By saving up to 1,620 AFY, the proposed Project will help reduce water demand for the LA Basin area.

- (2) Describe how the project conforms to and meets the goals of any applicable planning efforts and identify any aspect of the project that implements a feature of an existing water plan(s).**

This Project helps meet the State's Senate Bill (SB) 32 goals by reducing GHG emissions as a result of the reduction in water treatment and delivery from imported water supplies. SB 32 requires the California State Air Resources Board to ensure the state's GHG emissions are reduced to 40% below the 1990 levels by 2030. The Project will avoid GHG emission by conserving 2,645,347 lbs. of CO₂/year.

The Project conforms to and meets the District's 2020 UWMP Water Conservation goals and planning efforts by contributing to leak detection, water loss reduction, and increased customer water use efficiency. As detailed on Page 5-1, Section 5.0 of the District's 2020 UWMP, SBX7-7, or the Water Conservation Act of 2009, is a statewide mandate to reduce urban per capita water use by 20% by 2020 (20x2020). Reduction in water use is an important part of this plan that aims to sustainably manage the Bay-Delta and reduce conflicts between environmental conservation and water supply. The Project serves as a water conservation measure that will help the District continue to maintain 20% reduction in urban water use into the future, and also to meet the upcoming Water Use Objectives that subscribe to a specified gallons per capita per day for indoor and outdoor use, currently under development by DWR, and noted in the District's 2020 UWMP.

The Project also helps to meet Upper District's urban water use efficiency goals stated in the California Water Plan Update 2018, the Greater Los Angeles County IRWM Plan and MWD's 2020 Integrated Resources Plan. Water use efficiency and energy efficiency are two of the main goals in all of these plans that will enable the region to manage water supplies and resources for future generations. This Project implements water conservation measures for Upper District's customers.

(3) If applicable, provide a detailed description of how a project is addressing an adaptation strategy specifically identified in a completed WaterSMART Basin Study or Water Management Options Pilot (e.g., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes).

A WaterSMART Basin Study was completed by the Reclamation, the LACFCD, and several local agencies. The purpose of the LA Basin Study was to study long-term water conservation and flood control impacts from projected climate conditions and population changes in the Los Angeles Basin. LACFCD captures over 95% of precipitation that falls within the San Gabriel River Watershed to recharge the local groundwater basins. Los Angeles County accounts for the largest water demand of any urbanized county in California. The Project will support the strategies and goals of the LA Basin Study by implementing water conservation measures. Upper District's legal boundaries are within the San Gabriel Valley and overlie the Main Basin. Upper District does not produce groundwater from the Main Basin; however, its member agencies do. Groundwater in the San Gabriel Watershed is captured and managed by LACFCD. Upper District's water conservation efforts directly impact the availability of water within the Los Angeles region and LACFCD's WaterSMART Basin Study area. The Project will help implement the strategy by retrofitting several sites with water saving devices and assist in reducing water demand for the region.

This Project also supports the Colorado River WaterSMART Basin Study developed in partnership with Reclamation that confirms that without future actions, the Basin faces a range of potential future imbalances between supply and demand. One of the primary adaptation strategies identified in this study included water use efficiency and reuse. Greater water use efficiency would reduce the stress on the system and its limited water supply. The Project would save up to 1,620 AFY which would reduce that same amount of water imported from the CRA and SWP.

Subcriterion No. E.2 - Readiness to Proceed

Applications that include a detailed project implementation plan (e.g., estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates) will receive the most points under this criterion.

- **Identify and provide a summary description of the major tasks necessary to complete the project. Note: please do not repeat the more detailed technical project description provided in**

Section D.2.2.2.; this section should focus on a summary of the major tasks to be accomplished as part of the project.

Project Tasks

A summary description of the major tasks necessary to complete the Project are presented below.

Task 1: Project Administration and Reporting

The District Project Manager will execute the grant agreement with Reclamation, and oversee the work of other District Staff and the Consultants needed to implement the Project, maintain Project documentation, and complete required reporting. Grant reporting will be performed on a semiannual basis, including submittal of Financial Reports and Program Performance reports, as well as Financial Reimbursement Requests using the online Automated Standard Application for Payments (ASAP) system through the System for Award Management (SAM). Reports will be in accordance with requirements included in the grant agreement. The District Project Manager will monitor performance of the Project and will oversee submission of Project Performance Reports to Reclamation semiannually as per the grant agreement. Performance Reports will include information regarding the status of the Project's Performance Measures as explained in the financial assistance agreement.

Task 2: Environmental Review

The District will facilitate the necessary environmental review to comply with state and federal permitting requirements. The District anticipates a Categorical Exemption pursuant to California Environmental Quality Act (CEQA) Title 14 (California Code of Regulations), Chapter 3, Article 19, Section 15302c for the Project. Further, it is anticipated that a Categorical Exclusion or Finding of No Significant Impact (FONSI) under the National Environmental Policy Act (NEPA) will be issued by Reclamation given the nature of the Project. Reclamation staff will perform the necessary environmental review and compliance for the Project, as required.

Task 3: Kit Preparation, Marketing, and Distribution

The District will retain and manage a consultant to procure the materials for the Water Smart Home Kits, prepare the kits, and deliver the kits to the District office and other specified locations for pickup. The District will also promote and market the kits to maximize reach of the Project. Project marketing and promotion is anticipated to consist of website updates, direct mail, social media, newspaper advertising, and bill inserts.

Task 4: Performance Monitoring

Project monitoring will consist of a review of water efficiency device installation at select residences where the kits were registered. The success of the Project is determined by the number of kits distributed, devices installed, and the estimated amount of water conserved. The District or their designee will contact 1 in every 20 residents after pickup of a Water Smart Home Kit to verify if and which items were installed. The District will then estimate water savings based on the projections from the survey responses to the total number of kits distributed.

- **Describe any permits that will be required, along with the process for obtaining such permits.**

There are no required permits anticipated for the Project.

- **Identify and describe any engineering or design work performed specifically in support of the proposed project.**

There is no engineering or design work needed to be performed specifically in support of the Project.

- **Describe any new policies or administrative actions required to implement the project.**

No new policies or administrative actions are required to implement the Project.

- **Please also include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates.**

The Project’s implementation plan is shown in **Table 3**, below, including stages and duration of the proposed work by major tasks, milestones, and dates.

Table 3. Water Smart Home Kit Water Use Efficiency Anticipated Project Schedule

| Task / Milestone (in italics) | Start Date | End Date | Duration |
|---|----------------------------|--------------------|------------------|
| <i>Funding Award (Anticipated Date)</i> | <i>May 31, 2023</i> | | |
| Task 1: Project Administration and Reporting | July 2023 | Dec. 2024 | 18 months |
| <i>Financial and Interim Performance Grant Reporting</i> | <i>Semi-annual reports</i> | | |
| Task 2: Environmental Review | February 2023 | May 2023 | 4 months |
| <i>Complete Environmental and Cultural Compliance</i> | <i>May 2023</i> | | |
| Task 3: Kit Preparation, Marketing, and Distribution | July 2023 | August 2024 | 14 months |
| <i>Begin Water Smart Home Kit Distribution</i> | <i>July 2023</i> | | |
| <i>Water Smart Home Kit Distribution 50% Complete</i> | <i>January 2024</i> | | |
| <i>Water Smart Home Kit Distribution 100% Complete</i> | <i>August 2024</i> | | |
| Task 4: Performance Monitoring | Sept. 2023 | Sept. 2024 | 13 months |
| <i>Final Performance Report</i> | <i>December 2024</i> | | |

Evaluation Criterion F: Collaboration

Please describe how the project promotes and encourages collaboration. Consider the following:

- **Is there widespread support for the project? Please provide specific details regarding any support and/or partners involved in the project. What is the extent of their involvement in the process?**

Yes, the Project is built upon collaboration with the regional water agency (MWD) and Upper District member agencies (29 total). The Project will improve the reliability of water supplies from the SWP, CRA, and the local groundwater basin, which will ultimately benefit people, agriculture, and the environment associated with these water supply sources. The District is committed to the collaboration and maintenance of regional and local partnerships to enhance water supply reliability by promoting a regional common goal and adding flexibility to water portfolios and distribution systems. The Project will advance this goal.

Upper District’s Board of Directors has committed to providing financial contributions toward this Project. This funding is vital to the success of this Project. MWD is committed to contributing funding for the cities that overlay the basin. Letters of support were provided by Congresswoman Judy Chu, Ph.D. (27th District of California) and Congresswoman Grace Napolitano (32nd District of California); copies of these letters are

included in **Appendix C**. This Project is supported by MWD as it builds on the District's previous and successful Water Smart Home direct install program. Customers within the District's service area are also supporters/partners involved in the Project as a result of self-implementation and their help to achieve the water savings benefits due to reduced water consumption as a result of consumer education and high-efficiency fixtures.

- **What is the significance of the collaboration/support?**

The significance of the increased collaboration between Upper District and its member agencies is that the member agencies' customers will gain an increased awareness of water conservation efforts and Upper District's conservation programs and projects. Support of this Project by member agencies is also significant as it demonstrates acknowledgement of Upper District's progressive approach to increasing conservation through improved water management. Also, the collaboration between MWD and Upper District signifies greater regional water conservation efforts throughout Southern California.

- **Will this project increase the possibility/likelihood of future water conservation improvements by other water users?**

Yes, this Project will increase the possibility/likelihood of future water conservation improvements by other water users. The Project will directly facilitate reduced water consumption and associated water cost for participating customers, and could easily expand to additional devices in the same residence or be expanded by word-of-mouth promotion and become mainstream. Non-efficient devices such as nozzles and sprinklers are not available on the market anymore. This is the type of market transformation that can occur with new technology, thereby enhancing the possibility of future water conservation improvements by other water users. Further, the benefits of the Project, and any grant funding received for the Project, will serve as a catalyst for other cities, water districts, and suppliers to implement similar Projects or other water conservation improvements.

- **Please attach any relevant supporting documents**

Letters of Project Support are presented in **Appendix C**.

Evaluation Criterion G: Additional Non-Federal Funding

Non-Federal Funding: \$163,090
Total Project Cost: \$313,090 = 52% Non-Federal Funding

Evaluation Criterion H: Nexus to Reclamation

Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider the following:

- **Does the applicant have a water service, repayment, or O&M contract with Reclamation?**

No, the District does not have a water service, repayment, or O&M contract with Reclamation.

- **If the applicant is not a Reclamation contractor, does the applicant receive Reclamation water through a Reclamation contractor or by any other contractual means?**

The District is not a Reclamation contractor. Upper District currently receives imported potable water purchased through MWD, which receives water from the CRA and SWP (Bay-Delta). As the state contractor for water, MWD has specific contracts with Reclamation to supply imported water to its members agencies,

including Upper District. As previously stated, both the CVP and SWP rely on water supply in the Bay-Delta. Reclamation and the California DWR coordinate on the balance of water in the Bay-Delta for uses in the SWP and CVP. Therefore, Upper District's water demands impact available water in the CRA and CVP, which are both managed by Reclamation.

- **Will the proposed work benefit a Reclamation project area or activity?**

Yes, the Project benefits a Reclamation project activity because it supports the Colorado River WaterSMART Basin Study developed in partnership with Reclamation that confirms that without future actions the Main Basin faces a range of potential future imbalances between supply and demand. One of the primary adaptation strategies identified in this study included water use efficiency and reuse. Greater water use efficiency would reduce the stress on the system and its limited water supply. The Project would save 1,620 AFY which would reduce that same amount of water imported partially from the CRA (and partially from the SWP, which impacts the Bay-Delta and CVP supplies).

A WaterSMART Basin Study (LA Basin Study) was completed in November 2016 by Reclamation, LACFCD, and several local agencies. The LA Basin Study is available at the following link: <https://www.usbr.gov/watersmart/bsp/docs/fy2017/LABasinStudySummaryReport.pdf>. The LA Basin Study was funded with \$1 million from Reclamation's WaterSMART program, \$1.36 million from LACFCD, and \$60,000 from other local partners. The purpose of the LA Basin Study was to study long-term water conservation and flood control impacts from projected climate conditions and population changes in the Los Angeles Basin. The Study area covers approximately 1,900 square miles and is home to approximately 10 million people, or about one-quarter of California's population. The LA Basin Study recommended potential changes that could help resolve future water supply and flood control issues. The recommendations were developed through identifying alternatives and conducting trade-off analyses. The LA Basin Study area includes the San Gabriel River Watershed, where Upper District's service area is located. Upper District is a stakeholder in the Basin Study since the Study covers the District's service area within the San Gabriel Watershed. LACFCD captures over 95% of all precipitation that falls within the San Gabriel River Watershed to recharge the local groundwater basins. Upper District's legal boundaries are within the San Gabriel Valley and overlie the Main Basin. Upper District does not produce groundwater from the Main Basin; however, its member agencies do. Groundwater in the San Gabriel Watershed is captured and managed by LACFCD. Upper District purchases imported water to replenish the Main Basin.

Upper District received funding from Reclamation for the following projects that have been completed:

1. Title XVI – San Gabriel Valley Water Recharge Project. March 24, 1999 – June 30, 2013
2. ARRA – City of Industry Project and Rosemead Extension Project. December 31, 2009- June 30, 2013
3. Title XVI WaterSMART - Indirect Reuse Groundwater Replenishment Project: September 24, 2012- September 30, 2013
4. Water Use Efficiency Plan: July 1, 2011 - September 30, 2012

The Project will increase the availability of the overall water supply through improvements in water use efficiency and conservation. The water savings attained will be the result of reduced imports from the CRA and Bay Delta, benefitting the CVP. By reducing the amount of water imported, this water in effect remains at the source from which it originates or is made available to meet demands in other areas of the state.

- **Is the applicant a Tribe?**

The District (Applicant) is not a Tribe.

(5) Performance Measures

Provide a summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved or better managed, energy generated or saved).

The Project is estimated to result in up to 1,620 AFY of water saved. The performance measures that will be used to quantify actual benefits of the Project will include measures to quantify water savings, water better managed, and energy savings resulting from the installation leak repair devices and water use efficiency fixtures. Pre- and post-installation consumption measurements (i.e., meter measurements, billing) will be analyzed to verify water savings. **Table 4** summarizes the performance measures of the Project that will demonstrate and quantify actual Project benefits and effectiveness. Periodic water use monitoring will be provided to Reclamation throughout the reporting period and included in the final report. Periodic water use monitoring will continue beyond the grant term to make a valid assessment of the actual water savings throughout the Project life (10 years).

Table 4. Upper District’s Project Performance Measures

| Performance Measure | Target | Measurement Tools and Methods |
|---|--|---|
| Water Better Managed: Water Loss Reduction (Leakages) | 1,620 AFY | Select Water Smart Home Kit recipients will be contacted to confirm water use efficiency fixtures installed and quantified water savings estimated using manufacturers published water savings values. |
| Water Savings: Reduction in Consumption | 1,620 AFY | Select Water Smart Home Kit recipients will be contacted to confirm water use efficiency fixtures installed and quantified water savings estimated using manufacturers published water savings values. |
| Energy Savings | 5,151,600 kWh/year from water savings | Water savings will be converted to energy savings using the calculation of 2,605 kWh/AF of imported water conserved and 575 kWh/AF of pumping throughout the District’s delivery system. |
| Carbon Emissions Savings – Energy Use Reduction | 2,645,347 lbs. CO ₂ /year from energy savings | Confirm the water savings resulting from the Project in the Water Savings Project Performance Measures and convert to carbon emissions using the calculation of required energy = 3,180 kWh/AF and CO ₂ emissions = 0.5135 lbs. of CO ₂ /kWh. |

PROJECT BUDGET

The complete Project Budget includes a Funding Plan, Budget Proposal, Budget Narrative, and the SF 424 Budget Form.

Budget Proposal

Table 5 provides the summary of funding sources. The total Project costs are shown in **Table 6**. As proposed, the District will fund 52% of the Project costs, and the District is requesting \$150,000 of Federal funding from Reclamation. Costs incurred prior to April 1, 2022 have not been included in the Project budget.

Table 5. Summary of Project Federal and Non-Federal Funding Sources

| Funding Sources | Amount |
|--------------------------------------|------------------|
| Non-Federal Entities | |
| District's Cost Share | \$163,090 |
| Non-Federal Subtotal | \$163,090 |
| Requested Reclamation Funding | \$150,000 |

Table 6. Total Project Cost

| Source | Amount |
|---|------------------|
| Costs to be reimbursed with the requested Federal funding | \$150,000 |
| Costs to be paid by the applicant | \$163,090 |
| Value of third-party contributions | \$0 |
| TOTAL PROJECT COST | \$313,090 |

Table 7 provides the Budget Detail by cost categories (Budget Item Description). No In-Kind funding is proposed or included. Salaries and Wages are consistent with the detail shown in **Table 8**, and Contractual and Construction costs are consistent with **Table 9**. Subsequent pages present the Budget Narrative.

Table 7. Project Budget Proposal

| Budget Item Description | Computation | Quantity | Quantity Type | Total Cost |
|--|-------------|-----------------|---------------|------------------|
| | \$/Unit | | | |
| Salaries and Wages w/ Fringe Benefits | | | | |
| Jennifer Aguilar – Project Manager, Water Use Efficiency Analyst | 40.865 | 100 | Hours | \$4,087 |
| Project Coordinator | 36.902 | 100 | Hours | \$3,690 |
| Government and Community Affairs Representative | 41.617 | 60 | Hours | \$2,497 |
| | | Subtotal | | \$10,274 |
| Fringe Benefits | | | | |
| None | | Subtotal | | \$0 |
| Travel | | | | |
| None | | Subtotal | | \$0 |
| Equipment | | | | |
| None | | Subtotal | | \$0 |
| Supplies and Materials | | | | |
| None | | Subtotal | | \$0 |
| Contractual | | | | |
| Consultant A | \$3,000 | 1 | Lump Sum | \$3,000 |
| Consultant B | \$299,816 | 1 | Lump Sum | \$299,816 |
| | | Subtotal | | \$302,816 |
| Construction | | | | |
| None | | Subtotal | | \$0 |

Upper San Gabriel Valley Municipal Water District - Funding Group I Request
Water Smart Home Kit Water Use Efficiency Project

| Budget Item Description | Computation | Quantity | Quantity Type | Total Cost |
|--------------------------------------|-------------|-----------------|---------------|------------------|
| | \$/Unit | | | |
| Third-Party Contributions | | | | |
| None | | | | |
| Other | | | | |
| None | | Subtotal | | \$0 |
| Total Direct Costs | | | | \$313,090 |
| Indirect Costs | | | | |
| No indirect costs included. | | Subtotal | | \$0 |
| Total Estimated Project Costs | | | | \$313,090 |

Budget Narrative

The budget narrative is also summarized in the Budget Detail and Narrative spreadsheet. A PDF copy of this spreadsheet is presented in **Appendix D** and the Excel copy has been uploaded with this grant application to Attachment Form_1_2-V1.2.

Salaries and Wages

The Project Manager and other key District personnel are shown by Project task in **Table 8** along with estimated hours, compensation rate, and total salaries and wages costs for each task for the Project duration, consistent with the Project schedule in **Table 3**. Only labor rates are shown in **Table 8**; fringe benefits are not included in the Project budget. The Project Manager is Jennifer Aguilar, Water Use Efficiency Analyst. Her budgeted time includes a direct administration labor rate of \$40.865/hour, not including fringe benefits. A Project Coordinator will also assist in with Task 3; their budgeted time includes a direct labor rate of \$36.902/hour, not including fringe benefits. A Government and Community Affairs Representative will also assist in with Task 3; their budgeted time includes a direct labor rate of \$41.617/hour, not including fringe benefits. A total of 260 hours at a cost of \$10,274 is estimated over the 18-month Project.

Table 8. Project Budget for District Salaries and Wages by Task

| Task | Activity & Employee | Hours | Rate/Hr | Total Costs |
|---|---|-------|----------|-----------------|
| Task 1 | Project Administration and Reporting Project Manager (Jennifer Aguilar) | 25 | \$40.865 | \$1,021.63 |
| Task 2 | Environmental Review Project Manager (Jennifer Aguilar) | 5 | \$40.865 | \$204.33 |
| Task 3 | Kit Preparation, Marketing, and Distribution Project Manager (Jennifer Aguilar) | 45 | \$40.865 | \$1,838.93 |
| | Project Coordinator | 100 | \$36.902 | \$3,690.20 |
| | Govt. and Community Affairs Representative | 60 | \$41.617 | \$2,497.02 |
| Task 4 | Performance Monitoring Project Manager (Jennifer Aguilar) | 25 | \$40.865 | \$1,021.63 |
| TOTAL SALARIES AND WAGES (ROUNDED) | | | | \$10,274 |

Task 1. Project Administration and Reporting: The Project Manager is responsible for the overall success of the Project. This includes managing the various District staff members and consultants required to

complete the Project coordination with Reclamation, and managing the Project documentation. A total of 25 hours is allocated for the Project Manager for administration and reporting for the duration of the grant term.

Task 2. Environmental Review: The Project Manager will oversee preparation of CEQA and NEPA documentation by Consultant A, shown below in **Table 9**. A total of 5 hours is estimated for the Project Manager for this effort.

Task 3. Kit Preparation, Marketing, and Distribution: The Project Manager will oversee the work of Consultant B, shown in **Table 9**, to confirm Project participant eligibility, to procure the materials needed and to assemble the Water Smart Home Kits, and deliver the kits to the District offices. A total of 45 hours is estimated for the Project Manager for this effort. This task includes 100 hours of effort for the Project Coordinator to administer the kit pickup with all of the qualifying residents for the duration of the grant term. This task also includes 60 hours of effort for marketing and public outreach to promote the Project.

Task 4. Performance Monitoring: The Project Manager will contact select participants to evaluate which fixtures were installed to estimate the water savings and the overall Project performance. A total of 25 hours is estimated for the Project Manager for this effort.

The budget proposal and narrative should include estimated hours for compliance with reporting requirements, including final project and evaluation.

Reporting activities will be completed in Task 1 and Task 4 by District staff. Estimated hours for reporting are based on the proposed Project schedule as shown in **Table 3** and the level of effort on similar projects. Reporting hours and costs are shown in **Table 8**. Work includes negotiation, execution and management of the financial assistance agreement with Reclamation, semiannual submission of Federal Financial Reports and Interim Performance Reports, and submission of the Final Performance Report.

Generally, salaries of administrative and/or clerical personnel will be included as a portion of the stated indirect costs. If these salaries can be adequately documented as direct costs, they should be included in this section; however, a justification should be included in the budget narrative.

The District labor rates are included as direct costs and are supported by the District Budget approved May 25, 2022 and effective July 1, 2022, available on the District's webpage (<https://upperdistrict.org/wp-content/uploads/2022/06/FY-22-23-Budget.pdf>). These salaries are documented as direct costs because they will include directly related, Project-specific efforts required to accomplish the Project, such as public outreach and coordinating pickup of the Water Smart Home. No indirect costs are proposed, and no salaries of administrative or clerical personnel are included in the Project budget.

Fringe Benefits

No fringe benefit costs are included for the Project.

Travel

No travel costs are included for the Project.

Equipment

No equipment costs are included for the Project.

Supplies and Materials

Supplies and materials are not included in this budget category, as all Water Smart Home Kit items will be purchased under a consultant contract and are included in the Contractual cost estimate.

Contractual

Consultants will be hired to assist with facilitation of environmental review and kit preparation. The District has conducted preliminary price analysis and found average fees for consultants in the area. Contractual activities by consultant are shown in **Table 9**. The total contractual cost is estimated at \$304,816, and includes all contracted labor effort, printing, and kit materials. **The Project includes preparation and distribution of a total of 2,200 Water Smart Home Kits.**

Consultant A – A District consultant will provide the required Environmental Compliance Services for the Project. Services will be included in Task 2: Environmental Review and a total cost of \$3,000 for this consultant is included in the Project budget.

Consultant B – A District consultant will provide the needed services to develop the informational card, purchase kit supplies, assemble the kits, and deliver them to the District offices as part of Task 3: Kit Preparation, Marketing, and Distribution; a total cost of \$299,816 (approximately 95.7% of the overall Project budget) for this consultant is included in the Project budget. This consultant is a current District consultant and was selected based on a qualifications-based procurement method.

Table 9. Summary of Project Contractual Costs

| Consultant and Cost Purpose | Total Cost | Description of Costs | Basis of Costs |
|--|-----------------|---|--|
| Environmental Compliance Consultant – Personnel Costs | \$3,000 | Consultant Staff Costs | Average fee of consultants in the area is \$200 x estimated 15 hours of work. Estimate of hours provided by Stetson Engineers. |
| Water Use Efficiency Consultant - Base Field Technician – Personnel Costs | \$30,800 | Consultant Staff Costs - 0.25 hours per kit | \$56 per hour x estimated 0.25 hours of work per kit. Estimate of hours provided by EcoTech; refer to Appendix B for estimate. |
| Water Use Efficiency Consultant - Customer Service Representative, Use for customer signups and eligibility screenings | \$33,000 | Consultant Staff Costs - 0.25 hours per kit | \$60 per hour x estimated 0.25 hours of work per kit. Estimate of hours provided by EcoTech; refer to Appendix B for estimate. |
| Water Smart Home Kit Water Use Efficiency Items | | | |
| (5) RainBird HE-VAN Sprinkler Nozzle | \$10,120 | Sprinkler Nozzles | 5 units per kit, refer to Appendix B for item unit cost. |
| (2) 1804 SAM PRS | \$30,288 | Pressure Regulating Station | 2 units per kit, refer to Appendix B for item unit cost. |
| (1) Evolve Shower Start | \$49,368 | Shower Start | 1 unit per kit, refer to Appendix B for item unit cost. |
| (1) Evolve Shower Head | \$9,218 | Shower Head | 1 unit per kit, refer to Appendix B for item unit cost. |
| (2) Neoperl 1 GPM faucet aerators | \$5,412 | Faucet Aerators | 2 units per kit, refer to Appendix B for item unit cost. |
| (1) Universal Toilet Flapper | \$9,328 | Toilet Flapper | 1 unit per kit, refer to Appendix B for item unit cost. |
| (2) 0.5-inch Slip Fix coupling | \$23,452 | Slip Fix Coupling | 2 units per kit, refer to Appendix B for item unit cost. |

Upper San Gabriel Valley Municipal Water District - Funding Group I Request
Water Smart Home Kit Water Use Efficiency Project

| Consultant and Cost Purpose | Total Cost | Description of Costs | Basis of Costs |
|---|-----------------|------------------------------------|--|
| (2) 0.75-inch Slip Fix coupling | \$21,208 | Slip Fix Coupling | 2 units per kit, refer to Appendix B for item unit cost. |
| (1) Toilet Water Supply Line | \$13,794 | Toilet Water Supply Line | 1 unit per kit, refer to Appendix B for item unit cost. |
| (2) Leak Detection Tablets | \$5,412 | Leak Detection Tablets | 2 units per kit, refer to Appendix B for item unit cost. |
| (1) Christies Red Hot PVC Glue | \$14,300 | PVC Glue for Irrigation Repair | 3 units per kit, refer to Appendix B for item unit cost. |
| (1) Roll 0.5-inch Teflon Tape | \$1,870 | Teflon Tape for Fixture Install | 1 unit per kit, refer to Appendix B for item unit cost. |
| (1) 1.75-inch Ratcheting PVC Cutter | \$38,786 | PVC Cutter for Irrigation Repair | 1 unit per kit, refer to Appendix B for item unit cost. |
| (1) Kraft Literature Mailers - 12"x10"x4" | \$3,300 | Box to Store Kit Item Contents | 1 unit per kit, refer to Appendix B for item unit cost. |
| (1) Kit Information Card - 5"x7" | \$220 | Card Detailing Use of Kit Contents | 1 unit per kit, refer to Appendix B for item unit cost. |
| \$302,816 | | TOTAL CONTRACTUAL COSTS | |

Construction

Not applicable. The Project Budget does not include construction.

Third-Party In-Kind Contributions

Not applicable. The Project Budget does not include third-party in-kind contributions.

Environmental and Regulatory Compliance Costs

The Project involves preparation and distribution of Water Smart Home Kits and should pose no impact to the surrounding environment. Installation will be self-performed by residents. There are no required permits anticipated for the Project. The District anticipates a Categorical Exemption pursuant to CEQA Title 14 (California Code of Regulations), Chapter 3, Article 19, Section 15302c for the Project. It is anticipated that a Categorical Exclusion or FONSI under NEPA will be issued by Reclamation given the nature of the Project.

NEPA environmental compliance costs have not been included in the budget based on the Reclamation's statement in the Funding Opportunity Announcement that Reclamation may be able to complete its compliance activities without additional costs. It is understood that if costs are incurred by Reclamation, those costs will be added as a line item to the final Project budget during development of the financial assistance agreement and cost shared with the District.

Other Direct Costs

None. The Project Budget does not include other direct costs.

Indirect Costs

None. The Project Budget does not include indirect costs.

Budget Form – SF-424A, Budget Information – Construction

The District has completed the SF-424A, Budget Information—Non-Construction Programs form, submitted separately from this narrative.

Funding Plan and Letters of Commitment

Non-Federal Share of Project Costs

The non-Federal share of the Project costs will be provided from the District’s annually approved Water Use Efficiency and Conservation Program budgets during the grant term.

Cost Share Contribution

The estimated District contribution (non-Federal subtotal) is \$150,000. The District will provide its cost share in monetary (cash) contributions.

Any Third-Party In-Kind Costs

None. The Project budget does not include third-party in-kind costs.

Funding Partners and Letters of Commitment

None. Funding (cost share) will not be provided by an entity other than the District.

Funding Requests from other Non-Federal Entities

None. No other funding has been requested or received from other Federal entities.

Pending Funding Requests

None. There are no pending funding requests for the Project.

Any Costs Incurred Prior to Award

The District does not anticipate any costs prior to the Project award. The Project start date is anticipated in July 2023, after the anticipated grant award date of May 31, 2023. No construction is proposed for the Project.

PRE-AWARD COSTS

The Project does not include any pre-award costs.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

The Project involves purchase, assembly and distribution of kits providing high-efficiency indoor and outdoor fixtures and leak detection and repair tools to residential water users, and should pose no impact to the surrounding environment. A Categorical Exemption is anticipated to meet CEQA requirements, and a Categorical Exclusion or FONSI under NEPA will be required given the nature of the Project. Based on experience with other Reclamation-funded Projects and correspondence with Doug McPherson (Environmental Protection Specialist, Bureau of Reclamation, Southern California Area Office), it is anticipated that the proposed Project will receive a Categorical Exclusion under NEPA. As the lead for NEPA, any costs identified for Reclamation to perform NEPA work will be included in the final Project budget in the Financial Assistance Agreement. Responses to questions focusing on the NEPA, ESA, and Natural Historic Preservation Act requirements are presented below.

- **Will the proposed project impact the surrounding environment (e.g., soil [dust], air, water [quality and quantity], animal habitat)? Please briefly describe all earth-disturbing work and any**

work that will affect the air, water, or animal habitat in the project area. Please also explain the impacts of such work on the surrounding environment and any steps that could be taken to minimize the impacts.

No, the Project is not anticipated to impact the surrounding environment. Work includes purchase, assembly, and distribution of kits with water-saving fixtures for indoor use and outdoor landscaped areas.

- **Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activities associated with the proposed project?**

No known species listed or proposed to be listed as a federal endangered or threatened species, or designated critical habitats are within the Project area.

- **Are there wetlands or other surface waters inside the project boundaries that potentially fall under CWA jurisdiction as “waters of the United States?” If so, please describe and estimate any impacts the project may have.**

No, there are not wetlands or other surface waters inside the Project boundaries that potentially fall under Clean Water Act jurisdiction as "Waters of the United States." No associated impacts would occur, and no mitigation is required.

- **When was the water delivery system constructed?**

Upper District's delivery system was originally constructed in 1960 and is comprised of nine (9) points of connections from MWD's Upper Feeder supply system to Upper District's member agencies. Few additions, rehabilitation of pipe, or other system appurtenances have occurred since its original construction. Upper District purchases treated water, by way of the MWD Weymouth Treatment Plant, to distribute to its member agencies as well as purchases untreated water, by way of MWD, to distribute to the Main San Gabriel Watermaster. During the early years of Upper District's formation, imported water met less than 20% of its demands. In FY 19/20, imported water is now required to meet 36% of its potable demands. Since Upper District's facilities were originally constructed more than 50 years ago, less demand on the system will alleviate the impacts of shutdowns to rehabilitate the system.

- **Will the proposed project result in any modification of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.**

No, the Project will not result in any modification of or effect to individual features of an irrigation system. This Project will result only in modifications to water inefficient indoor and outdoor fixtures. None of the modifications will be extensive in nature and everything removed will be replaced with “in-kind” but more efficient devices.

- **Are any buildings, structures, or features in the irrigation District listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.**

No, Upper District does not anticipate any effects to buildings, structures, or features listed on the National

Register of Historical Places.

- **Are there any known archeological sites in the proposed project area?**

No, there are no known archeological sites in the Project area. No archeological sites are anticipated to be encountered during the course of this Project as it does not involve excavation or construction.

- **Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?**

No, the Project will not have a disproportionately high and adverse effect on low income or minority populations. The Project has the potential to provide positive monetary benefits to low income and minority populations by identifying water inefficiencies within their community, which will potentially decrease the costs of water to that population as a result of water savings. Refer to Evaluation Criterion C(2) for more detail related to the Project's benefits to DACs.

- **Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?**

No, the Project will not limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands.

- **Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?**

No, the Project will not contribute to the introduction, continued existence, or spread of noxious weeds or non-native species known to occur in the area. This Project involves providing residential customers education, materials, and tools to repair leaks and retrofitting existing inefficient irrigation and indoor water devices with high-efficiency fixtures. Such retrofits help to direct the appropriate amount of water to where it is needed and may actually help limit the spread of noxious weeds or non-native invasive species.

REQUIRED PERMITS OR APPROVALS

State whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

There are no required permits needed for the proposed Project.

LETTERS OF PROJECT SUPPORT

Letters of Project Support were provided by Congresswoman Judy Chu, Ph.D. (27th District of California) and Congresswoman Grace Napolitano (32nd District of California). Copies of these Letters of Support are included in **Appendix C**.

OFFICIAL RESOLUTION

An official resolution of the District's Board of Directors is planned for adoption at their meeting on August 10, 2022. A copy of the draft resolution is included in **Appendix E**. A copy of the executed resolution will be submitted to Reclamation within 30 days of July 28, 2022, the due date of this application. The resolution verifies the District's legal authority to enter into an agreement; that the District has reviewed and supports submittal of this application; the capability of the District to provide the amount of funding specified in the

Funding Plan; and that the District will work cooperatively with Reclamation to meet established deadlines for entering into a cooperative agreement.

OVERLAP OR DUPLICATION OF EFFORTS STATEMENT

There is no anticipated overlap between the proposed Project and any other active or anticipated District proposals or projects in terms of activities, costs, or commitment of key personnel that would adversely impact the Project. In addition, the proposal submitted for consideration under this program is not currently in any way duplicative of any proposal or project that has been or will be submitted for funding consideration to any other potential Federal or non-Federal funding source.

CONFLICT OF INTEREST DISCLOSURE

No actual or potential conflict of interest exists at the time of submission of this application.

UNIFORM AUDIT REPORTING STATEMENT

All U.S. states, local governments, Federally recognized Indian Tribal governments, and non-profit organizations expending \$750,000 in U.S. dollars or more in Federal award funds in the applicant's fiscal year must submit a Single Audit report for that year through the Federal Audit Clearinghouse Internet Data Entry System in accordance with 2 CFR §200 subpart F. The District was not required to submit a Single Audit report for the most recently closed fiscal year (FY 2021).

CERTIFICATION REGARDING LOBBYING

Since this application is requesting more than \$100,000 in Federal funds, to comply with the requirement that Applicants requesting more than \$100,000 in Federal funding must certify the statements in 43 CFR Part 18, Appendix A - Certification Regarding Lobbying, the Authorized Official's signature on the appropriate SF-424, Application for Federal Assistance form represents the District's certification.

APPENDICES

Appendices are presented on the following pages.

Appendix A – Copies of Manually Signed Federal Forms

Appendix B – Project Cost Reference Material

Appendix C – Letters of Support

Appendix D – Budget Detail Spreadsheets

Appendix E – Draft Resolution

JUDY CHU, Ph.D.
27TH DISTRICT, CALIFORNIA

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Congress of the United States
House of Representatives
Washington, DC 20515

**COMMITTEE ON
WAYS AND MEANS**

SUBCOMMITTEE ON HEALTH
SUBCOMMITTEE ON
WORKER AND FAMILY SUPPORT
SUBCOMMITTEE ON OVERSIGHT

**COMMITTEE ON
SMALL BUSINESS**

SUBCOMMITTEE ON
OVERSIGHT, INVESTIGATIONS, AND REGULATION
SUBCOMMITTEE ON
ECONOMIC GROWTH, TAX, AND CAPITAL ACCESS

**COMMITTEE ON
THE BUDGET**

July 25, 2022

The Honorable Camille Calimlim Touton
Commissioner
Bureau of Reclamation
1849 C St NW # 7654
Washington, DC 20240

RE: Upper San Gabriel Valley Municipal Water District's Application to the WaterSMART:
Water and Energy Efficiency Grant Program

Dear Commissioner Touton:

I write in support of the Upper San Gabriel Valley Municipal Water District's (Upper District) \$150,000 grant application to the Bureau of Reclamation's WaterSMART: Water and Energy Efficiency Grant Program for the Water Smart Home Kit Water Use Efficiency Project (the "Project"). The Project consists of providing residents with Water Smart Home Kits, which include tools to quickly locate and repair home water leaks as well as devices, like universal aerators and water-efficient shower heads, that can reduce water while residents maintain their daily routines.

California is experiencing its third year of consecutive drought and many water agencies, like Upper District, have taken measures to implement accelerated conservation measures. The Project will help promote conservation among Upper District's residents and help reduce their water demands to meet a 20% reduction in water use. The San Gabriel Valley receives 80% of its water supply from the Main San Gabriel Groundwater Basin, which is nearing a historic low. Additionally, the region's dependence on State Water Project deliveries for groundwater replenishment has been limited due to the drought conditions throughout the state.

This Project will empower residents with the tools and resources they need to reduce their water use. The Project will bring awareness to the impacts water leaks and faulty devices can have on a customer's water use and provide the tools to locate and quickly repair leaks and install water saving devices. According to the EPA, household leaks account for 900 billion gallons of water wasted each year. Toilet leaks, irrigation leaks and small pipe leaks are the main contributors for wasted water both within and outside the home. These leaks can be repaired quickly with the right devices, education, and identification processes. Based on the figures provided through the manufacturer and the EPA, the Water Smart Home Kits will allow residents to potentially reduce

JUDY CHU, Ph.D.
27TH DISTRICT, CALIFORNIA

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Congress of the United States
House of Representatives
Washington, DC 20515

**COMMITTEE ON
WAYS AND MEANS**

SUBCOMMITTEE ON HEALTH
SUBCOMMITTEE ON
WORKER AND FAMILY SUPPORT
SUBCOMMITTEE ON OVERSIGHT

**COMMITTEE ON
SMALL BUSINESS**

SUBCOMMITTEE ON
OVERSIGHT, INVESTIGATIONS, AND REGULATION
SUBCOMMITTEE ON
ECONOMIC GROWTH, TAX, AND CAPITAL ACCESS

**COMMITTEE ON
THE BUDGET**

their water use by 11,253 gallons per year and save 147,600 gallons per year if they have an unidentified leak.

I believe this Project offers great potential for the San Gabriel Valley region I represent, and I thank you for your full and fair consideration of Upper District's grant application, consistent with applicable statutes and regulations. Should you have any questions regarding this letter of support, please contact Jenna Christiansen in my office at Jenna.Christiansen@mail.house.gov.

Sincerely,

A handwritten signature in cursive script that reads "Judy Chu".

JUDY CHU
Member of Congress

CAPITOL OFFICE

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Grace F. Napolitano
Congress of the United States
House of Representatives
32nd District of California

TRANSPORTATION AND INFRASTRUCTURE

WATER RESOURCES AND ENVIRONMENT - **CHAIRWOMAN**

AVIATION

HIGHWAYS AND TRANSIT

RAILROADS, PIPELINES, AND HAZARDOUS MATERIALS

NATURAL RESOURCES

WATER, OCEANS, AND WILDLIFE

CONGRESSIONAL MENTAL HEALTH

CAUCUS

Co-CHAIR

CONGRESSIONAL YOUTH CHALLENGE

CAUCUS

Co-CHAIR

CONGRESSIONAL HISPANIC CAUCUS

July 15, 2022

Mr. Josh German
WaterSMART Grants Program Coordinator
United State Bureau of Reclamation

Subject: Support for Upper District's grant application for the United States Department of the Interior, Bureau of Reclamation's WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2023 – NOFO R23AS00008

Dear Mr. German:

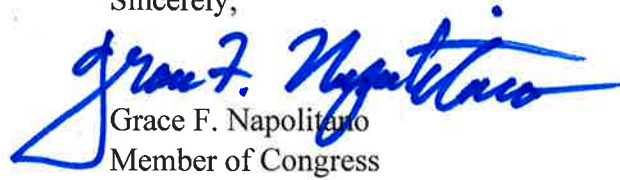
I write with my strong support for Upper San Gabriel Valley Municipal Water District's (Upper District) grant application to the United States Bureau of Reclamation's (Reclamation) WaterSMART Grants: Water and Energy Efficiency Grants for Fiscal Year 2023 to fund the Water Smart Home Kit Water Use Efficiency Project (Project).

California is experiencing its third year of consecutive drought and many water agencies, like Upper District, have taken measures to implement accelerated conservation measures. The Project will help promote conservation to Upper District's residents and help reduce their water demands to meet a 20% reduction in water use. The San Gabriel Valley receives 80% of its water supply from the Main San Gabriel Groundwater Basin, which is nearing its historic low set in November 2018. Additionally, the region's dependence on State Water Project deliveries for groundwater replenishment has been limited due to the drought conditions.

Upper District has taken great steps to empower their customers with the tools and resources they need to reduce their water use. This project will bring awareness to the impacts water leaks and faulty devices can have on a customer's water use and provide the tools to locate and quickly repair leaks and install water saving devices. According to the EPA, household leaks account for 900 billion gallons of water wasted each year. Toilet leaks, irrigation leaks and small pipe leaks are the main contributors for wasted water both within and outside the home. These leaks can be repaired quickly with the right devices, education, and identification processes.

I am proud of the work the Upper District has done so far helping their customers with water conservation, and I strongly support their continued efforts with this WaterSmart grant application. Working together we can continue fostering water sustainability and awareness to the public and providing tangible solutions for water use efficiency.

Sincerely,



Grace F. Napolitano
Member of Congress

Appendix E – Draft Resolution

DRAFT

RESOLUTION NO. XX-XX-XXX

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT ENDORING WATERSMART: WATER AND ENERGY EFFICIENCY GRANT FOR 2023

WHEREAS, the United States Bureau of Reclamation is currently offering grant opportunities through the WaterSMART: Water and Energy Efficiency Grants for Fiscal Year ("FY") 2023; and

WHEREAS, said WaterSMART: Water and Energy Efficiency Grants for FY 2023 is a cost-shared program emphasizing water and energy efficiency; and

WHEREAS, the Board of Directors of Upper San Gabriel Valley Municipal Water District ("Board") supports the submission by the Upper San Gabriel Valley Municipal Water District ("Upper District") of a grant application, prepared and approved by the Upper District, to the WaterSMART: Water and Energy Efficiency Grants for FY 2023; and

WHEREAS, Upper District is capable of providing the amount of matching funds of up to \$163,090 in cash and/or in-kind contributions required in the grant application process; and

WHEREAS, if selected for a WaterSMART: Water and Energy Efficiency Grants for FY 2023, Upper District will work with the United States Bureau of Reclamation to meet established deadlines for entering into a cooperative agreement.

BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT as follows:

Section 1. The Board approves the submission of the application for the WaterSMART: Water and Energy Efficiency Grants for FY 2023 by Upper District for fiscal year 2023-24 and fiscal year 2024-25.

Section 2. In the event grant funding is provided by the United States Bureau of Reclamation, the Board authorizes the General Manager of Upper District or his designee to accept the grant and sign any contract for administration of the grant funds and delegate the Chief Financial Officer to act as a fiscal agent for any grant funding received.

Section 3. This resolution shall take effect immediately.

Section 4. The Secretary shall certify to the adoption of this resolution and henceforth and thereafter the same shall be in full force and effect.

DRAFT

PASSED, APPROVED, AND ADOPTED on August 10, 2022.

Ed Chavez, President

ATTEST:

Katarina Garcia, Secretary

(SEAL)

APPROVED AS TO FORM:

Steve O'Neill, District Counsel