Los Angeles Affordable Housing Direct Install Project

Prepared in response to:
US Bureau of Reclamation
Funding Opportunity No. R24AS00052
Water and Energy Efficiency Grants for
Fiscal Year 2024

February 22, 2024

SoCalGas™

In Partnership With

LA DWP Los Angeles Department of Water & Power

TITLE PAGE

APPLICATION FILING NAME:

SOUTHERN CALIFORNIA GAS COMPANY (SOCALGAS) AND LOS ANGELES DEPARTMENT OF WATER AND POWER (LADWP): LOS ANGELES AFFORDABLE HOUSING DIRECT INSTALL PROJECT (PROJECT)

Southern California Gas (SoCalGas) and the Los Angeles Department of Water and Power (LADWP) (collectively "Partners") are pleased to submit this request for grant funding to install premium high efficiency toilets, smart water leak detection, California-Friendly landscaping, and other water and gas saving devices at no cost to participating customers through SoCalGas' direct install energy efficiency programs, focusing on low-income customers and households residing in disadvantaged communities (DAC).

SoCalGas will lead the implementation of the proposed work on behalf of the Partners and will transact with the United States' Bureau of Reclamation (USBR) for the purposes of grant award and contracting. SoCalGas will act as the primary applicant and LADWP will act as the co-applicant for the WaterSMART - FY 2024 Water and Energy Efficiency Grant.

PRIMARY APPLICANT INFORMATION:
Southern California Gas Company
555 W. Fifth St., Los Angeles, CA 90013

CO-APPLICANT INFORMATION:
Los Angeles Department of Water and Power
Water Resources Division
111 N. Hope St., Los Angeles, CA 90012

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EXECUTIVE SUMMARY

Date: February 20, 2024

APPLICANT

Primary Applicant Name: Southern California Gas Company (SoCalGas), Los Angeles, Los Angeles County, California

Primary Applicant Category: Category A applicant with the authority to deliver power and natural gas in the state of California. This proposal is submitted under Funding Group II.

Co-Applicant Name: Los Angeles Department of Water and Power (LADWP)

Co-Applicant Category: Category A applicant with the authority to deliver water and power in the City of Los Angeles.

PROJECT SUMMARY

SoCalGas will partner with LADWP to add comprehensive cold and hot water conservation measures such as premium-efficiency toilets, smart leak detection, weather-based irrigation controllers, turf replacement, thermostatic shower valves and bathtubs, smart water loss monitoring devices, and low-flow showerheads and aerators in SoCalGas' water and energy efficiency direct install programs. These measures will be installed at no-cost to the participants, and the project will target low-income residents and those in areas designated by the state of California as disadvantaged communities. The project will consist of multiple SoCalGas direct install programs that currently serve the residential marker, for example, the Energy Savings Assistance (ESA), the Multifamily Energy Alliance (MEA) Program and others. The project is expected to serve 24,000 homes and save 789 acre-feet of clean water annually and 8,453 acre-feet over the life of the devices.

PROJECT SCHEDULE

The project is expected to start in January 2025, contingent upon receiving the award from the USBR. The project is expected to have a duration of 36 months and be completed in December 2027. The proposed project will not be located on a Federal facility.

PROJECT LOCATION

The Project will be located within the City of Los Angeles (the City), County of Los Angeles, and State of California) and will include LADWP's water service territories, as shown in Figure 1. Households that qualify for the low-income ESA program can be located anywhere in LADWP's service territories. Those that qualify through the market rate (i.e. non low-income) programs must also be located within a disadvantaged community as defined by Senate Bill 535 as shown in Figure 2. The Project is not located on a federal facility.

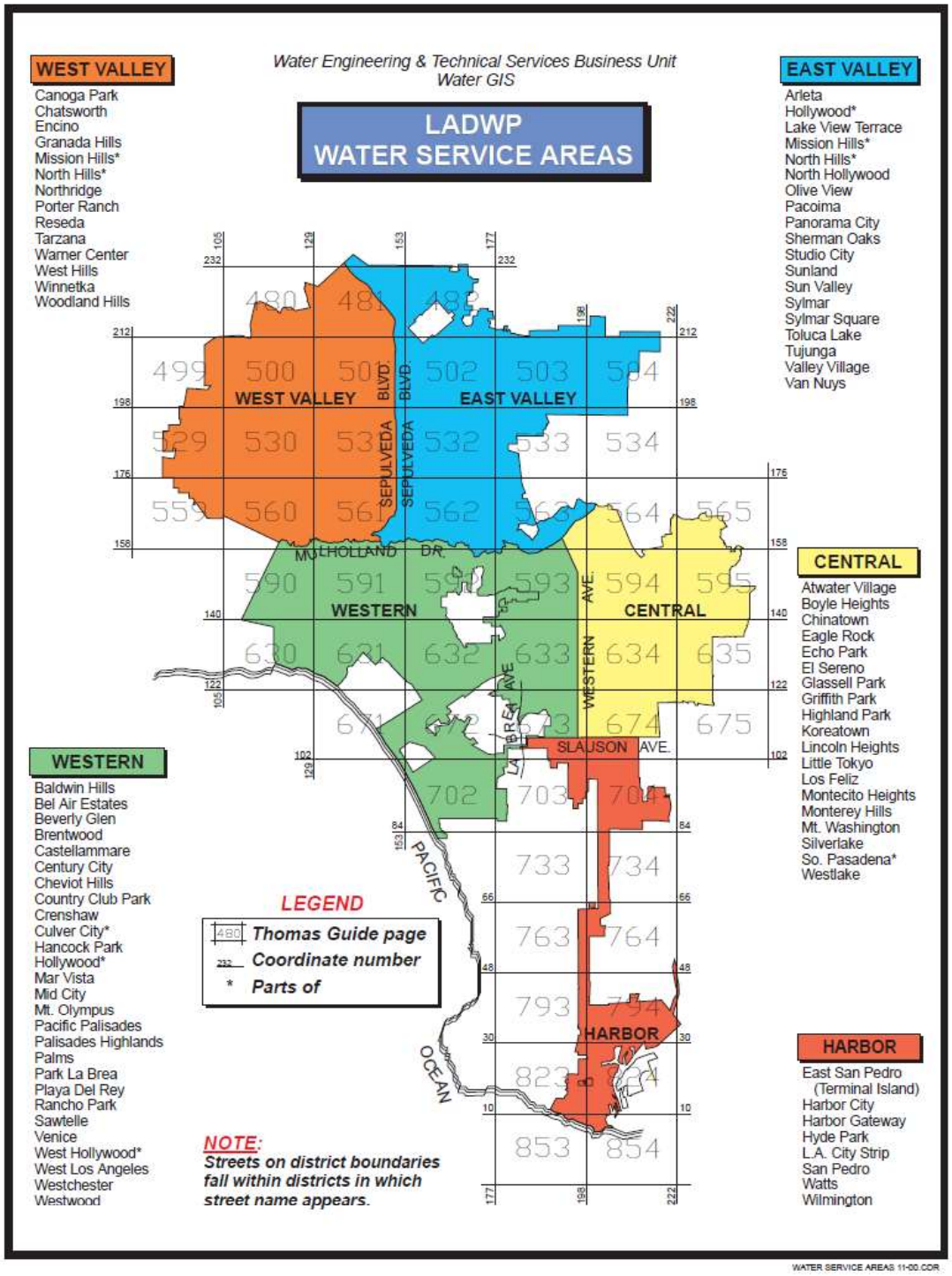


Figure 1 - LADWP Water Service Map

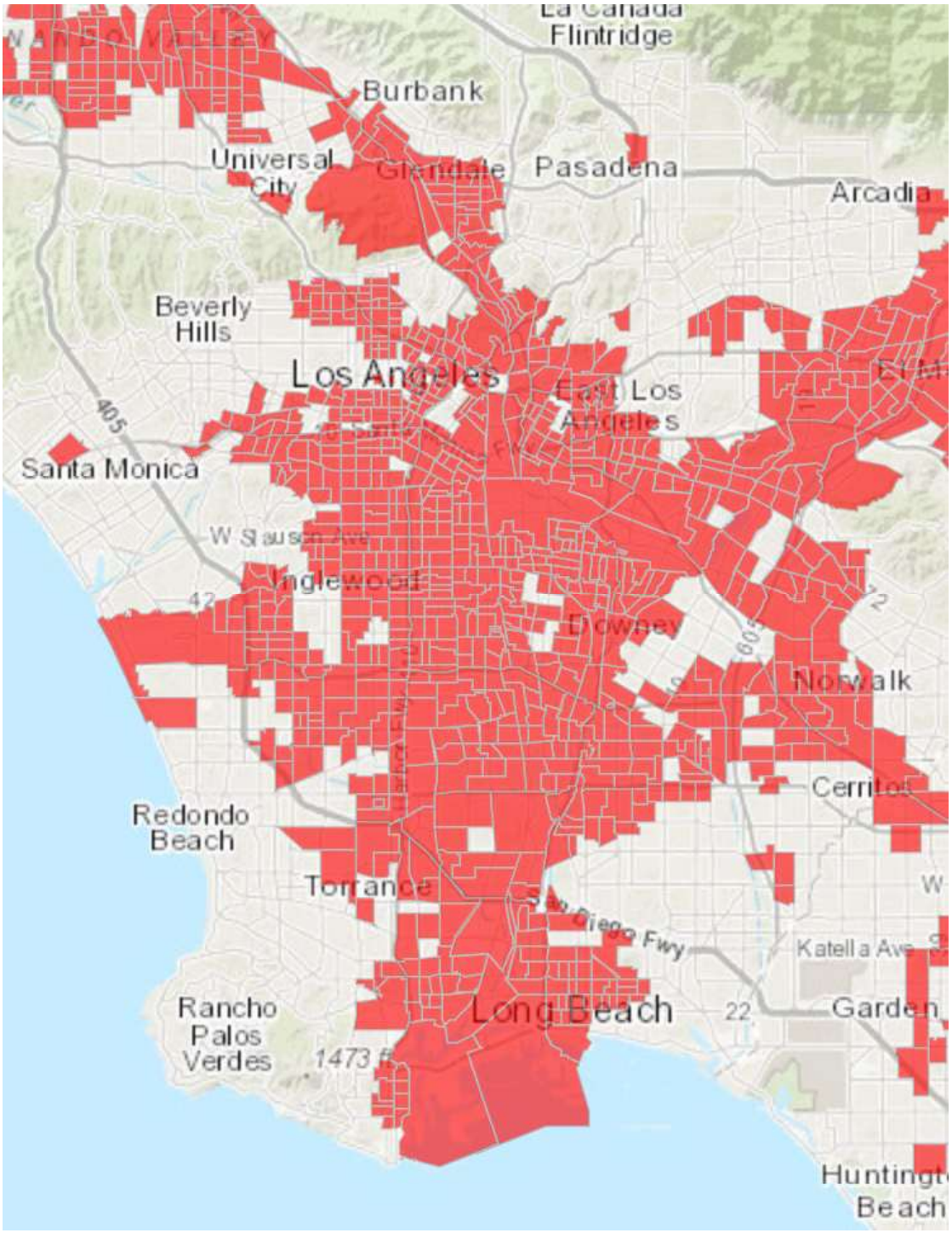


Figure 2 – SB 535 Disadvantaged Communities in Los Angeles (Highlighted in Red)

TECHNICAL PROJECT DESCRIPTION

TEAM AND PARTNERSHIP BACKGROUND

SoCalGas is the nation's largest natural gas distribution utility, delivering increasingly clean, safe, and reliable energy to 21.8 million through 5.9 million meters in more than 500 communities. SoCalGas' service territory encompasses approximately 24,000 square miles in diverse terrain throughout Central and Southern California, from Visalia to the Mexican border. SoCalGas has been a leader in sustainability and innovation and has demonstrated this by creating lasting benefits for stakeholders, championing people, and shaping the future. The mission of SoCalGas is to build the cleanest, safest, and most innovative energy company in America through innovation, collaboration, and decarbonization. ASPIRE 2045[1] is SoCalGas' strategy to further integrate sustainability across its business. It is designed to make a positive impact on communities and achieve greater business strength. This strategy builds upon SoCalGas' climate commitment to achieve net zero greenhouse gas emissions in its operations and delivery of energy by 2045.

LADWP is the largest municipal utility in the United States, serving four million residents and businesses. LADWP exists to support the growth and vitality of the City of Los Angeles through providing safe, reliable, and cost-effective water and power in a customer-focused and environmentally responsible manner.

SoCalGas and LADWP have formed a master partnership to jointly deliver energy and water efficiency solutions to their mutual customers located in the greater Los Angeles region. The partnership began in 2012 and to date has served more than 500,000 customers.

While both Partners are currently each implementing a portfolio of energy efficiency and water conservation programs, it is a common practice for both utilities to team up and jointly implement customer-focused programs and services that leverage each Partner's existing program infrastructure. This partnership is facilitated by a Master Inter-Utility Agreement (MIUA) between the Partners that allows for the creation of new joint programs and enables the Partners to transact financially with each other for the purposes of jointly delivering solutions to mutual customers. Continuing this tradition, SoCalGas and LADWP will partner in this Project, which consists of installation of energy and water-efficient fixtures and equipment at no cost to residents of Los Angeles. This Project will result in significant water and gas savings, as well as reduce utility bill costs for residents.

PROJECT BACKGROUND

In 2013, the Partners entered into an agreement under the MIUA to jointly implement the MEA Program to serve residential properties in the City of Los Angeles. This was followed by the creation of a joint ESA Program in 2015 to serve low-income residents in the city.

- The ESA Program[2] is a program directed at households with an income below an

[1] Leading Through Sustainability | SoCalGas, https://www.socalgas.com/sustainability/leading-through-sustainability
[2] https://www.socalgas.com/save-money-and-energy/assistance-programs/energy-savings-assistance-program

established threshold. To qualify for the program, participating households may qualify through participation in a public benefit program, such as the National School Lunch Program (NSLP) and Medi-Cal/Medi-Caid, or if the household has a maximum household income equal or less than two and a half of times of the Federal poverty guidelines. The ESA Program provides comprehensive retrofits and services to the participants, including weatherization and high efficiency appliance replacements.

- The MEA Program[3] is a comprehensive program targeted at multifamily properties (defined as more than four units in a single building), while the RACE Program[4] targets single-family homes, and the Comprehensive Mobile Home Program[5] targets mobile/manufactured homes. These programs provide no-cost direct-install services as well as assistance with rebate applications for equipment that is not included in the direct install program, and they are open to all homes with an active account with SoCalGas and LADWP.
- SoCalGas and LADWP regularly launch new partnership programs that provide similar services to the programs listed above. These new programs will be included in this proposed effort as appropriate, as long as the benefit recipients fall under the low-income category or the disadvantaged community designation.

Project measures will be included in the delivery of the programs above according to the description below.

PROJECT OVERVIEW

With the funding requested from USBR, the Partners are looking to strengthen and expand the joint programs through the Project. The Project will incorporate substantial and higher-cost measures into the two programs to implement a more comprehensive program portfolio in addressing water and energy efficiency. The new measures include:

a) Premium high-efficiency toilets (0.8-1.0 gallons per flush or gpf) to replace existing toilets with a flow of 1.6 gpf or higher[6];

b) Thermostatic shower valves (TSVs) in combination with low-flow showerheads;

c) Weather-based smart irrigation controllers to reduce landscape watering;

d) Water loss detection/mitigation using smart water loss monitoring devices; and

e) Turf-replacement with California-friendly landscaping.

Although the water savings for the additional measures may be substantial, the higher cost will require a significant investment from the parties involved. The funds requested from USBR for the Project will help subsidize the cost of the measures and increase the quantities that the Project could deliver. The addition of some, if not all, of these measures will be contingent upon

[3] https://www.socalgas.com/for-your-business/energy-savings/multi-family-savings
[4] https://www.socalgas.com/save-money-and-energy/rebates-and-incentives/residential-advanced-clean-energy-program
[5] https://www.socalgas.com/save-money-and-energy/rebates-and-incentives/comprehensive-mobilehome-program
[6] Wherever feasible, 0.8 gpf toilets will be installed, the 1.0 gpf version will only be installed where the 0.8 gpf model could not be installed.

receiving funding from USBR. LADWP and SoCalGas will provide a cost match from their pool of ratepayer funds to deliver these measures to approximately 24,000 housing units in the City.

Additionally, the partners will also install two existing measures in the Project, which include:

f) Low-flow faucet aerators (1.5 gallons per minute or gpm for kitchen aerators, and 1.0 gpm for bathroom aerators to replace higher flow units); and

g) Low-flow showerheads (1.5 gpm model to replace higher flow models)

All of the above measures will be targeted primarily at affordable housing and households residing in disadvantaged communities as defined by the State of California (California Senate Bills 535[7]) and the White House Council on Environmental Quality's Climate and Economic Justice Screening Tool (CEJST). The Partners are seeking a co-funding from the USBR for these measures to allow for more housing units in disadvantaged communities to be served by the Project.

The focus on income-qualified residents and those residing in disadvantaged communities is intended to help mitigate program inequity that has existed for years. While higher-income residents can purchase more efficient devices that are higher priced and can participate in the Partners' programs by claiming the associated rebates, the lower-income residents have historically been under served by the Partners' rebate programs as the residents lack the capital to purchase these bill-saving devices on their own. The lack of water saving devices can increase water bills for residents that cannot afford the upgrades. Various studies have also concluded that the increasing burden in water rates due to the ongoing drought crisis in California falls disproportionately upon the income-qualified households when compared to the impact of other households not in this category[8]. The Pacific Institute also concluded in a recent report that *"Ensuring water conservation and efficiency programs are accessible is a challenge worth tackling to save water and money, especially for households and communities that need it most. Funding these programs can be a challenge. There are several barriers to implementing water conservation and efficiency programs that are accessible to everyone. But there are already many creative solutions to overcoming these barriers to create access for people of all incomes."*[9] As the Partners have not been able to include higher priced measures in the direct install programs due to cost-effectiveness thresholds established by its regulators or the policymakers, one of the creative solutions offered by the Project is to pool together resources from multiple sources to assist these customers.

PROJECT PURPOSE AND ANTICIPATED BENEFITS

The Partners are working together to enhance these programs through the Project and request additional funding for the purpose of mitigating the impact of the drought on the water supply and extending further assistance to low-income residents and the disadvantaged communities that have long suffered the adverse consequences of climate change, environmental pollution, and severe drought.

[7] https://oehha.ca.gov/calenviroscreen/sb535

[8] Drought and Equity in California, *Feinstein, L, et.al.,* Pacific Institute, Oakland, California, 2017 (https://pacinst.org/wp-content/uploads/2017/01/PI_DroughtAndEquityInCA_Jan_2017.pdf)

[9] https://pacinst.org/water-conservation-efficiency-accessibility/

In addition, there are other compelling factors that demonstrate a need for the Project:

1. More than 50% of Los Angelenos live in residential properties which are located in disadvantaged neighborhoods, and 63% of Angelenos are renters[10]. It has been well documented that due to the incentive split barrier that is very common in rented properties, many home improvement measures that result in energy efficiency and water conservation are largely ignored by both the owner and the renter. The owner does not want to install the measures as the tenant who usually pays the energy and water bills is the one getting the financial benefits. Meanwhile, the renter also hesitates to replace anything in the rented dwelling as the devices cannot be taken away when the lease expires. Without this intervention of directly installing the higher priced measures such as premium toilets and turf replacement, the existing fixtures will likely remain until the facility undergoes a major rehabilitation.
2. The state of California in general, and the City of Los Angeles in particular, has been experiencing a significant uptick in homelessness in the last few years. Efforts and funding from multiple sources have been directed to help address this rise in homelessness and provide more affordable housing for those needing it, but a significant gap remains. The recent trend of fast-tracking funds for new housing may also be causing an unintended effect of displacing funding for the rehabilitation of existing housing units. As of today, both LADWP and SoCalGas have fielded more requests than ever from advocacy groups and low-income property managements and owners to increase program benefits provided to affordable housing through the Partners' efficiency programs. Providing the proposed measures through a direct install approach will not only accelerate the modernization of the properties; it may also free up additional funds to be used for building new housing for the homeless.
3. In addition to saving a significant amount of clean water, the proposed measures will also carry many other benefits, including reducing energy consumption that will directly result in GHG reduction as well as reducing air pollution. The California Senate Bill (SB) 535 was created to address the disproportionate impact of pollution on disadvantaged communities that tend to be located near industrial centers and along major transportation corridors. Since the proposed work and funding is targeted at these defined disadvantaged communities, it will reduce GHG and pollution in these communities at a rate that will be significantly faster than the rate at which the Partners or the state can influence on their own.

The total Project cost, inclusive of the proposed USBR funding and the Partners' own funding, is estimated to be $7,989,483, and the USBR funding, totaling $1,997,371, will comprise of 25% of the overall budget. Overall, the Project is expected to serve 24,000 homes with a total water savings of 8,453 acre/ft over the lifetime of the devices, and on average, the water conservation fixtures installed are expected to reduce a participant's water and sewer bill by $1,534 per household over the life of the devices.

EVALUATION CRITERIA

[10] https://www.matthews.com/location-location-location-how-los-angeles-became-a-hotspot-for-multifamily/

E.1.1. Evaluation Criterion A—Quantifiable Water Savings (28 points)

1. Describe the amount of estimated water savings.

The Project consists of direct installation of various water saving devices that include showerheads, low-flow faucet aerators, thermostatic shower valves (TSV), thermostatic tub spouts, low-flow showerheads, premium high-efficiency toilets, irrigation controllers, and turf replacement. The Project is estimated to result in over 8,453 acre-feet of water over the life of the equipment. Table 1 summarizes the estimated annual and lifetime water savings for the measures proposed:

Table 1 – Summary of Water Savings By Device Installed

Measure	3-Year Quantity	Water Savings (acre-feet)/Unit	Device Life (Years)	Total Annual Water Savings (af)	Total Lifetime Water Savings (af)
Showerheads, 1.5 gpm	20,500	0.0058	10	119	1,189
Bathroom Faucet Aerators, 1.0 gpm	24,600	0.0019	10	47	467
Kitchen Faucet Aerators, 1.5 gpm	21,800	0.004	10	87	872
Thermostatic Showervalves + LF Showerheads	1,880	0.0076	10	14	143
Water Loss Detection	7,920	0.05	10	396	3,960
Premium High Efficiency Toilets	1,900	0.01165	20	22	443
Irrigation Controllers	2,080	0.0414	10	86	861
Turf replacement (sq.ft.)	150,000	0.000115	30	17	518
TOTAL				**789**	**8,453**

2. Describe the current losses.

The Project includes direct install programs to increase the water efficiency of indoor and outdoor devices in order to reduce water loss.

The outdoor measures include the installation of California-Friendly landscapes or weather-based smart irrigation controllers, which will conserve water used for outdoor irrigation and mitigate water loss from urban runoff and overwatering. Some of the sustainable landscapes' features will also include stormwater capture elements to promote groundwater recharge, which allows captured water to be used for the landscape at a later time to infiltrate the groundwater table, respectively.

Similarly, the indoor devices will allow more potable clean water to be retained within LADWP's water system, where it could be deployed elsewhere, For instance, the installation of thermostatic valves stops a showerhead's water flow when the water reaches a certain

temperature thereby preventing continuous water flow into the wastewater system during the time that users are unaware that the desired temperature has been reached. The shower user will then need to re-open the valve to allow the warm water flow and take the shower by pulling on a string.

Overall, the increased indoor and outdoor device efficiency will reduce the amount of water flowing into the city's wastewater system where it will be treated according to the City of Los Angeles' guidelines.

3) Describe the support/documentation of estimated water savings. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations.

METHODOLOGY OVERVIEW

The water savings presented here are derived from well-established, third-party reviewed and verified sources that have been vetted by regional and state regulators (e.g. the California Public Utilities Commission or CPUC). There are two primary sources of water savings assumptions:

1. For cold water measures such as premium high-efficiency toilets, weather-based irrigation controllers, smart leak detection devices, and turf replacement projects, the estimated water savings are based on the Metropolitan Water District of Southern California's (MWD or Metropolitan) Integrated Water Resource Plan (IRP)[11]. Metropolitan is the water supplier of 26 public water agencies in Southern California, including LADWP, that deliver water supplies directly or indirectly to 19 million people in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. The IRP is Metropolitan's roadmap for their long-term water strategy, which includes a water conservation plan. Metropolitan provides its member agencies with water savings figures for reporting purposes through the IRP. In the IRP, water saving assumptions are provided for each device that is included as a water conservation measure. Metropolitan updates the IRP measure saving values for rebated residential devices on an annual basis (see Table 2 below from 2023). The methodology to calculate the device water savings for the Project is outlined in the IRP, which may be subject to periodic updates in future assumptions and calculations due to changes to the IRP on an annual basis.
2. For hot water measures such as low-flow showerheads, aerators, and thermostatic shower valves and tub spouts, the water savings have been calculated using the technical workpapers ("workpapers"[12]) commissioned by the CPUC, who is the state regulator for SoCalGas. These technical workpapers were prepared by one or more Investor-Owned Utilities (IOUs) under the auspices of the CPUC with assistance from external organizations that are considered experts in their fields. These workpapers are peer-reviewed and approved by the CPUC's staff and consultants. Typically, feedback from California Technical Forum is also addressed in the workpaper. The California Technical Forum is comprised of various subject matter experts in specific fields covered in the workpaper. Due to the extensive details contained within each workpaper, only excerpts

[11] Metropolitan Water District of Southern California (MWD). *2016. Integrated Water Resources Plan. 2015 Update.* Report 1518. January. Appendix 9. The last full edition from 2015, and its Technical Appendices, can be downloaded from https://www.mwdh2o.com/how-we-plan/integrated-resource-plan/

[12] http://www.deeresources.net/workpapers

from workpapers relevant to demonstrating saving assumptions and calculations will be presented in this proposal. The workpapers are available publicly and can be accessed via the location provided in the coming sections.

METHODOLOGY TO DETERMINE ACTIVE WATER SAVINGS

For measures included in the IRP, an excerpt from the MWD *Integrated Water Resources Plan 2015 Update*[13] describes how the active water savings estimates were generally calculated,

"Device savings are limited by decay rates, or a corresponding device life, but not both at the same time. For example, a residential high-efficiency toilet (HET) saves about 38 gallons per day over a lifetime of 20 years with no assumed decay rate (replacing 3-5 gpf toilet with 1.28 gpf toilet). For a complete list of current and past device and program savings factors, see Appendices A and B. Annual savings are expressed in acre-feet (AF).

$$S_i = \frac{d_i \times a_i \times 365}{325{,}851\ gal\ per\ AF}$$

S_i is the annual savings in acre-feet (AF) for device *i*.
d_i is the number of devices *i* installed under an active conservation program.
a_i is the gallons per day savings from a baseline. Baselines are specific to each device and represent the typical amount of water usage for a conventional device prior to more efficient alternatives being made available, either through plumbing code enforcement or market innovations. For example, a HET with a 1.28 gallons-per-flush (GPF) has a savings factor of 38 gallons per day compared to the 3.5 GPF toilets available before the 1992 plumbing codes.
365 is the number of days assumed in one year for the purpose of simplifying the calculation.
325,851 is the number of gallons in one acre-foot of water.

Lifetime savings is the sum of annual savings over the life expectancy of the device:

$$L_i = \sum_{t_i=1}^{n} S_i$$

L_i is the lifetime savings of device i.
n is the number of years a device is expected to produce savings before it fails. This varies depending on the type of device.
t is the year when device i is producing savings.
S_i is the annual savings in acre-feet (AF) for device i.

Table 2 presents the water savings values in 2023 provided to Metropolitan's member agencies

[13] *Page 174 of Appendix* APPENDIX 9 METROPOLITAN CONSERVATION SAVINGS MODEL: METHODOLOGY AND ASSUMPTIONS

for water-savings devices are that currently being rebated by Metropolitan. These savings values are calculated based on Metropolitan's research into the device usage and corresponding savings when replaced by the rebated residential device."

4. Please address the following questions according to the type of infrastructure improvements proposed for funding.

The Project includes the following improvements proposed for funding:

- (4) Turf Removal
- (5) Smart Irrigation Controllers, Controllers with Rain Sensor Shutoff, Drip Irrigation, and High-Efficiency Nozzles
- (6) High-Efficiency Indoor Appliances and Fixtures

Table 2 – Metropolitan Water District Measure Savings Values for Rebated Residential Devices

Residential Devices	Annual Savings (acre-feet/year)	Device Lifetime (years)	Lifetime Savings (acre-feet)	MWD Incentive
Premium HET (Based on savings from 1.6 gpf toilet)	0.0105	20	0.210	$40
Weather Based Irrigation Controller (each; < 1 acre)	0.0414	10	0.414	$80
Weather Based Irrigation Controller (/Station; > 1 acre)	0.0179	10	0.179	$35
Rotary Multi-Stream Nozzle	0.0026	5	0.013	$2
Turf Replacement (per square foot)	0.0001	30	0.003	$2
Hose Bib	0.0179	10	0.179	$35
Soil Moisture Sensor (each; < 1 acre)	0.0414	10	0.414	$80
Soil Moisture Sensor (/Station; > 1 acre)	0.0179	10	0.179	$35
Rain Barrel	0.0019	5	0.010	$35
High Efficiency Clothes Washer	0.0328	14	0.459	$85
Cistern - Small (200 - 500 gallons)	0.0076	5	0.038	$250
Cistern - Medium (501 - 999 gallons)	0.0094	5	0.047	$300
Cistern - Large (1,000+ gallons)	0.0108	5	0.054	$350
Submeter	0.0246	20	0.492	$100
Leak Detection	0.0500	10	0.500	$100

(4) Turf Removal: *Applicants proposing turf removal projects should address:*

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

Method 1:

The value of 44 gal/sq-ft of water saved was determined by using the turf removal program savings of North Marin (representing the coastal region) and Southern Nevada Water Authority (representing the inland region) and taking the average of the two. This can be seen below.

Agency	Savings/sq-ft
North Marin	33
SNWA	55
Average	44 (or 0.0000135 acre-ft/sq-ft)

Method 2:

An average annual water savings estimate has been determined using the Maximum Applied Water Allowance (MAWA) equation listed below:

MAWA= (ETo) x (0.62) x [(0.7 x LA) + (0.3 x LA)]

Los Angeles is in Reference Evapotranspiration Zone 4 with an ETo of 46.6 inches/year. Customers are assumed to be watering at 100% of turf watering needs per square foot.

ETo = Reference Evaporation (inches per year)

0.7 = ET Adjustment Factor

LA= Landscape Area (sq-ft)

0.62 = Conversion Factor (to gallons per square foot)

0.3 = Runoff Factor (30% of water applied is assumed to run off the landscape)

Thus, MAWA = (46.6) x (0.62) x [(1 x $1ft^2$) + (0.3 x 1 ft^2)] MAWA = (28.89) x (1.3) = 37.6 gallons/sq-ft or 0.000115 acre-ft/sq-ft

Method 3:

Using Metropolitan's savings values, the water savings for turf replacement is calculated at 0.0001 acre-ft/sq-ft per year.

For the purposes of water savings calculations in this application, the savings from Method 2 or 0.000115 acre-ft/sq-ft will be used since it is the median value of the three methods.

b. *What is the total surface area of turf to be removed and what is the estimated average annual turf consumptive use rate per unit area?*

We propose a turf replacement of 150,000 sq ft to be installed at a rate of $8 per sq ft, with LADWP funding ($6 per sq-ft), and USBR funding the rest ($2 per sq-ft). A modest amount is being proposed here as the direct-install method for residential customers is new for LADWP, and will need time to prove the concept. The consumptive use rate per unit area after replacement is expected to be near zero, so the existing consumption rate is approximately 0.000115 acre-ft/year.

c. Was historical water consumption data evaluated to estimate average annual turf consumptive use per unit area? If so, did the evaluation include a weather adjustment component?

No, it was not.

d. Will site audits be performed before applicants are accepted into the program?

Yes, turf replacement contractors are required to submit photographic evidence of existing turf along with a proposed design that identifies the areas for turf to be replaced.

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

LADWP will perform a meter analysis on the turf applicants, prior to and after turf replacement, with appropriate adjustments for weather and plant establishment periods to determine water saved.

(5) Smart Irrigation Controllers, Controllers with Rain Sensor Shutoff, Drip Irrigation, and High-Efficiency Nozzles: Applicants proposing smart irrigation controllers, controllers with rain sensor shutoff, drip irrigation, or high-efficiency nozzle projects should address:

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

It should be noted that areas that have the turf replaced with California-friendly landscaping will not be eligible to receive a smart irrigation controller.

The rate of water savings provided by the MWD as listed in Table 1 is 0.0414 acre-feet per year for areas under 1 acre, which will be used as the basis for calculations.

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?

The MWD performs the analysis of the water savings from a smart irrigation control and takes into account the weather pattern in its calculations.

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

Only residential-type controllers/timers that are not weather-based will be replaced with the following smart devices or their equivalent. 1,260 units will be targeted for replacement.

- Rachio Type 3B – 630 units
- Orbit 57915 and 57925 – 630 units

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

The devices will be installed through a direct-install program.

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

The site will receive an assessment of watering stations, and the performance of each water station will be checked by the vendor after the installation of the controller. Photographs of the old and new controller devices along with a sampling of watering areas will also be collected.

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

LADWP will perform an analysis on the metered data for the property, prior to and after replacement, with appropriate adjustments for plant establishment periods to determine water saved.

(6) High-Efficiency Indoor Appliances and Fixtures: Installing high- efficiency indoor appliances and fixtures can provide water savings for municipal water entities where there is significant potential for replacing existing non-efficient indoor appliances and fixtures. Applicants proposing high-efficiency indoor appliance and fixtures projects should address:

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

PREMIUM HIGH EFFICIENCY TOILETS WATER SAVINGS

The water savings quantification for the toilets is obtained from the MWD data as shown in Table 2 and adjusted to the baseline population of existing toilets.

Based on LADWP's data collected through its programs, from 2020-2022, about 96% of the existing toilets to be replaced are 1.6 gpf (water savings = 0.0105 acre-feet/yr), while 4% are toilets between 3.0 and 5.0 gpf. From Table A.9-3 of the IRP, the water savings for replacement of toilets from model 3.0-5.0 gpf model to 1.28 gpf model is 0.038 acre-feet/yr.

Adjusting the new toilets to be on average the 0.9 gpf model, the water savings from replacing the 3.0-5.0 gf model with 0.8-1.0 gpf model can be estimated as (3.5 gpf-0.9 gpf) / (1.6 gpf-0.9 gpf) x 0.015 acre-feet/year= 0.039 acre-feet per year.

Therefore, the unit savings for each replaced toilet is:

[4% x 0.039 acre-ft/yr + 96% x 0.0105 acre-ft/yr] = 0.01165 acre-ft/yr

SMART LEAK DETECTION WATER SAVINGS

Smart leak detection monitor devices, such as Flume or equivalent, allow homeowners to learn and monitor their home water use. These devices use algorithms to continuously monitor water flow inside a home and establish patterns of consumption that allow the device to breakdown the water consumption end-uses and identify any water leaks as well as potential locations of the leak. These smart devices are usually installed in-line with or strapped on at the home's main water meter.

The water savings associated with these devices come from reduced water losses as these devices actively monitor and inform the user when such leaks are detected, often before the leaks are discovered visually, thereby compelling the home occupants to repair the leaks sooner, which results in more water savings. The device also increases awareness to the home's water use and can motivate the residents to reduce their water footprint. The MWD's IRP estimates the savings at 0.05 acre-feet per year, and the lifetime water savings at 0.5 acre-feet per year based on a device life of 10 years.

MWD's estimated savings are based on three studies conducted by water agencies in the country:

- A study conducted in the City of Goodyear found the device to save participating

households 14.6%[14] on average;

- A study conducted by Contra Costa water district found savings of 17%[15]; and
- A study conducted by San Antonio Water System found savings of 18%[16].

Taking an average savings from these findings, MWD assumed savings of 16.5% for each household. Based on MWD's IRP data, an average household served by its member agencies consumes 266 gallons per day. Projecting savings of 44 gallons per day and 16,061 gallons per year, the annual water savings are estimated at 0.05 acre-feet per year per household.

LOW-FLOW SHOWERHEADS WATER SAVINGS

The water savings for the low-flow showerheads are obtained from the CPUC's workpaper, entitled **"SWWH002-02 Low-flow Showerhead Residential 033021 with corrections".**

The full workpaper is available to download at:

http://www.deeresources.net/workpapers

For the 1.5 gpm showerhead to be installed in a residential unit, replacing an existing 2.25 gpm, in an Accelerated Replacement (AR) setting, California Climate Zone 9 (the climate zone for most of the city of Los Angeles), the water savings are determined as 1,893 gallons per year or 0.0058 acre-feet per year (assuming more conservative usage in a multifamily home). With a device life of 10 years, the lifetime water savings are 0.058 acre-feet of water per device.

The following is an excerpt from the low-flow showerhead workpaper,

"Calculation of Water Usage and Water Savings

The calculation of water savings due to the installation of a low-flow showerhead or flow control valve is represented below. Annual water savings is calculated as the difference between the estimated base case and measure case annual water usage.

Annual water usage is a function of flow rate (gpm), the average duration of each shower, the average number of showers taken per day per household, and the average number of showerheads per household. This calculation also includes a throttling factor which is a constant that represents the assumed actual water pressure as a portion of full pressure (80 psi). The annual water use calculation also includes a normalization factor, which adjusts the estimated water consumption to account for a change in the baseline hot water consumption as per a Water Fixture Disposition issued by the Energy Division of the California Public Utilities Commission (CPUC) in 2013.[17]

The inputs to calculate base case and measure case water usage are provided in following tables. Note that this measure is applicable for single family, multifamily, and mobile home installations. Due to lack of data on mobile home water usage, particularly at the fixture type level (showerhead, faucet), the mobile home water usage and savings calculations adopt the more

[14] https://flumewater.com/resources-flume-utility-and-business-solutions/
[15] https://calwep.org/wp-content/uploads/2020/11/Flume-CalWEP-Partnership-2.pdf
[16] https://flumewater.com/wp-content/uploads/2020/10/SAWS_Case20Study_10.20_Final-1mb1.pdf
[17] California Public Utilities Commission (CPUC), Energy Division. 2013. "Workpaper Disposition for Water Fixtures." February 22.

conservative multifamily values.

$$WS = WU_{base} - WU_{measure}$$

$$WU = \frac{FlowRate \times F \times Min \times Days \times QShwr}{N} \times G$$

WS = Annual water savings (gal/year)
WU = Annual water use (gal/year), for base or measure case
FlowRate = Showerhead water flow rate (gpm) for base or measure case fixtures
F = Throttling factor (%)
Min = Average shower time (min/day)
QShwr = Number of showers per household per day
Days = Shower days of operation (days/year)
N = Number of showerheads per household, SF or MF
G = Normalizing factor

Base Case Water Usage Inputs

Parameter	Single Family	Multi-family / Mobile Home	Source
Base Case Flow Rate (gpm) – normal replacement, new construction	1.80	1.80	California Energy Commission (CEC). 2014. *2014 Appliance Efficiency Regulations.* CEC-400-2014- 009-CMF.
Base Case Flow Rate (gpm) – accelerated replacement, add-on equipment	2.25	2.25	Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx".
Average Shower Time (min/shower)	7.4	7.4	DeOreo, W., P. Mayer, and D. Lewis. 2000. *Seattle Home Water Conservation Study: The Impacts Of High Efficiency Plumbing Fixture Retrofits In Single- Family Homes.* Prepared for the Seattle Public Utilities and the U.S. Environmental Protection Agency. Boulder, CO: Aquacraft, Inc. Water Engineering and Management.
Avg. # of Showers Taken per Day Per Household (showers/day/hh)	2.79	2.22	Single Family: Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx". Multifamily: KEMA-XENERGY, Itron, and RoperASW. 2004. *California Statewide Residential Appliance Saturation Study*. Prepared for the California Energy Commission. Contract No. 400-04-009. PG&E Banner Subset, Pages 100 and 102.
Avg. # of Showerheads per Household (showerheads/hh)	2.01	1.50	Single Family: Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx". Multifamily: U.S. Census Bureau. (n.d.). "U.S. 2000 Census Bathrooms in NC MF Units.xls."
Throttling Factor (%)	90%	90%	Biermayer, P. 2006. *Potential Water and Energy Savings from Showerheads.* Ernest Orlando Lawrence Berkeley National Laboratory,

Parameter	Single Family	Multi-family / Mobile Home	Source
			Environmental Energy Technologies Division. Contract No. DE-AC02-05CH11231. P. 6.
Operating Days (days/year)	365	365	Professional judgement.
Normalization Factor	0.670	0.702	See below.

Measure Case Water Usage Parameters – Multifamily / Mobile Home

Parameter	Multifamily / Mobile Home					Source
Measure Case Flow Rate (gpm)	1.00	1.25	1.50	1.60	1.70	-
Average Shower Time (min/shower)	7.4	7.4	7.4	7.4	7.4	See below.
Avg. # of Showers Taken per Day Per Household (showers/day/hh)	2.22	2.22	2.22	2.22	2.22	See below.
Avg. # of Showerheads per Household (showerheads/hh)	1.50	1.50	1.50	1.50	1.50	See below.
Throttling Factor (%)	90%	90%	90%	90%	90%	See below.
Operating Days (days/year)	365	365	365	365	365	Professional judgement.
Normalization Factor	0.702	0.702	0.702	0.702	0.702	See below.

Base Case Showerhead Flow Rate: The baseline for normal replacement (NR) showerhead installations have a single baseline flow rate that complies with the Title 20 code effective on July 1, 2016. For accelerated replacement and add-on equipment installations, the first baseline flow rate was derived as the average of measured existing showerhead flow rates from a residential field survey in Southern California. The second baseline for *accelerated replacement* installations complies with the Title 20 flow regulations effective on July 1, 2018.

Measure Case Showerhead Flow Rate: The mixed water flow rate for each measure case showerhead used in the water saving calculation.

Average Shower Time per Day: Shower duration was derived from water trace data from ten single family homes in Seattle in 1999. A study of residential end use of water conducted for the AWWA Research"

LOW-FLOW FAUCET AERATOR WATER SAVINGS

The water savings for the low-flow showerheads are obtained from the CPUC's workpaper, entitled **"SWWH001-02 Low-Flow Aerator Residential 032321 with corrections.zip".**

The full workpaper is available to download at:

http://www.deeresources.net/workpapers

For the 1.5 gpm kitchen faucet aerator that will be installed in homes, replacing an existing 2.20 gpm, in an Accelerated Replacement (AR) setting, California Climate Zone 9 (the climate zone for most of the city of Los Angeles), the water savings are determined as 1,295 gallons per year or 0.0040 acre-feet per year (assuming more conservative usage in a multifamily home). With a device life of 10 years, the lifetime water savings are 0.040 acre-feet of water per device.

For the 1.0 gpm bathroom faucet aerator that will be installed in home, replacing an existing 2.20 gpm, in an Accelerated Replacement (AR) setting, California Climate Zone 9 (the climate zone for most of the city of Los Angeles), the water savings are determined as 632 gallons per year or 0.0019 acre-feet per year (assuming more conservative usage in a multifamily home). With a device life of 10 years, the lifetime water savings are 0.019 acre-feet of water per device.

The following is an excerpt from the low-flow faucet aerators workpaper,

"Calculation of Water Usage and Water Savings

The estimation of base case and measure case water usage and the UES calculation replicated the approach presented in the "Workpaper Disposition for Water Fixtures" issued by the California Public Utilities Commission (CPUC) in 2013[18] to the extent possible. Deviations from the 2013 CPUC disposition that were necessary for accuracy and consistency include the following:

- Climate zone adjustment factors in 2013 CPUC disposition were not used, but rather updated to be consistent climate zone groundwater temperatures developed for the Title 24 2013 weather data.
- The 2013 CPUC disposition recommended 25 gpd based upon the NREL study for the DOE Building America analysis. The 25 gpd value is used directly for installations with 2.25 gpm code baseline, but split between kitchen (54.8%, 13.7 gpd) and lavatory (45.2%, 11.3 gpd) for 2.9 aerators/household = 3.9 gpd/aerator). This breakdown for lavatories is more conservative than the disposition since the disposition uses two aerators/household, rather than 2.9.
- The adjustment in the disposition from 59% energy factor to 77% recovery efficiency rate was not necessary since the original calculations in the 2009 field survey data also used 77%. This measure analysis utilizes a 77% recovery efficiency rate to be consistent with the direction of the disposition.

Water savings was calculated as the difference between the baseline and measure case usage. Water usage (baseline or measure case) is a function of the flow rate, number of faucets per household, and assumed operating time.

$$WS = WU_{base} - WU_{measure}$$

$$WU = \frac{FlowRate \times Min \times Days}{N}$$

WS = Annual water savings (gal/year)
WU = Annual water use (gal/year), for base or measure case
FlowRate = Water volume flow rate (gpm), for base or measure case
Min = Faucet average operating time (min/day)
Days = Faucet days of operation (days/year)
N = Number of faucets per household, SF or MF

The inputs to the base case and measure case water usage calculation are specified and explained below. Note that this measure is applicable for single family, multifamily, and mobile home installations. Due to lack of data on mobile home water usage, particularly at the fixture type level (showerhead, faucet), the mobile home water usage and savings calculations adopt the more conservative multifamily values.

[18] California Public Utilities Commission (CPUC), Energy Division. 2013. "Workpaper Disposition for Water Fixtures." February 22.

Base Case Water Usage Inputs

Single Family				
Parameter	**Units**	**Kitchen**	**Lavatory**	**Source**
Base Case Flow Rate	gpm	2.2	2.2	Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx".
Average Faucet Use Time	min/day	6.08	5.02	*(calculated)*
Flow Rate for All Sink Faucets	gpd	13.40	11.04	Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx". Hendron, R. and C. Engebrecht. 2010. *Building America Research Benchmark Definition: Updated December 2009.* National Renewable Energy Laboratory. NREL/TP-550-47246.
Multifamily / Mobile Home				
Parameter	**Units**	**Kitchen**	**Lavatory**	**Source**
Base Case Flow Rate	gpm	2.2	2.2	Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx".
Average Faucet Use Time	min/day	5.07	4.18	*(calculated)*
Flow Rate for All Sink Faucets	gpd	11.20	9.20	Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx". Hendron, R. and C. Engebrecht. 2010. *Building America Research Benchmark Definition: Updated December 2009.* National Renewable Energy Laboratory. NREL/TP-550-47246.

Measure Case Water Usage Inputs

Single Family						
Parameter	**Units**	**Kitchen**	**Lavatory**			**Source**
Measure Case Flow Rate	gpm	1.5	0.5	1.0	1.2	-
Average Faucet Use Time	min/day	6.08	5.02	5.02	5.02	*(calculated)*
Multifamily / Mobile Home						
Parameter	**Units**	**Kitchen**	**Lavatory**			**Source**
Measure Case Flow Rate	gpm	1.5	0.5	1.0	1.2	-
Average Faucet Use Time	min/day	5.07	4.18	4.18	4.18	*(calculated)*

Average Faucet Use Time. The estimated total water usage of all faucets in the household (gallons per day, gpd) was drawn from the Building America Research study conducted by the National Renewable Energy Laboratory (NREL).[19] To derive water usage by faucet type, data from the Sempra Energy Utilities (San Diego Gas and Electric and the Southern California Gas Company) 2009 field survey[20] was used to apportion the usage between kitchens and lavatories for both single-family and multifamily residences. The portion of total sink water usage is specified in the table below.

Sink Water Usage Breakdown and Number of Faucets per Household, by Aerator Application

[19] Hendron, R. and C. Engebrecht. 2010. *Building America Research Benchmark Definition: Updated December 2009.* National Renewable Energy Laboratory. NREL/TP-550-47246.

[20] Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx".

Parameter	Kitchen	Lavatory	Source
Portion of Total Sink Water Usage	0.55	0.45	Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx".
Number of Faucets per Household	1.0	2.9	Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx". California Public Utilities Commission (CPUC), Energy Division. 2013. "Workpaper Disposition for Water Fixtures." February 22.

Number of Faucets per Household. The number of faucets per household (specified in the previous table) were derived from survey results for SCG and SDG&E utilized in calculations included in the 2013 CPUC disposition. The survey data specified the number of lavatories and kitchens in a household. There was no breakdown between single-family and multifamily residence types in the survey data; thus, identical values for the number of kitchen and lavatory faucet aerators are used for all residence types.

Water Usage per Day. The water usage (gallons per day) for each faucet type was divided by the appropriate base case flow rate to derive the average minutes average per day of expected faucet use. This methodology estimates faucet use time in minutes per day that is constant and varies only by building type. The assumption of the minutes per day that a faucet is used does not change between the base case and measure case means that a reduction in the faucet flow rate will reduce water usage.

Water Use Assumptions, by Building Type

Water usage @ 2.25 gpm (gal/day)	25.0	20.8	Hendron, R. and C. Engebrecht. 2010. *Building America Research Benchmark Definition: Updated December 2009.* National Renewable Energy Laboratory. NREL/TP-550-47246.
Water usage @ 2.20 gpm (gal/day)	24.4	20.4	
Annual operating days (days/yr)	365	365	Assumption based on professional judgement

Foundation found a similar result[21]. Note that the average shower time in minutes per day is fixed and varies only by housing type. The assumption that the minutes per day a showerhead is used does not change between the base case and measure case scenarios means that a reduction in the showerhead flow rate will reduce water usage.

Average Number of Showers per Day: The average number of showers per day per single-family household was derived from the 2009 residential water fixture field study conducted in Southern California. The average number of showers per day per multifamily household was derived from the 2004 California Residential Appliance Saturation Study survey data.

Number of Showerheads per Household: The average number of showerheads per single-family household was derived from the 2009 residential water fixture field study conducted in

[21] Mayer, P. and W. DeOreo. 1999. *Residential End Uses of Water 1999, Subject Area: Water Resources.* Denver, CO: American Water Works Association (AWWA) Research Foundation. Page 99

Southern California. The average number of showerheads per multifamily household was calculated from U.S. Census 2000 data as the weighted average of the number of bathrooms in new construction homes the West Region from 1978 to 2006. This calculation assumes that each bathroom contains a shower or bath with one showerhead.

Throttling Factor: This factor adjusts the showerhead flow rate to account for pressures less than 80 psig, for limiting flow by throttling back (closing) the control valve to the shower, and to account for partial clogging due to debris in the pipe or from calcium deposits in areas with hard water contributes to this factor.

Normalization Factor: The 2013 "Water Fixture Disposition" adopted the assumptions for baseline daily hot water (DHW) usage in the Database for Energy Efficient Resources (DEER). As per the 2013 Water Fixture Disposition, the "DEER values for daily hot water use by end use are developed by NREL for the Building America House Simulation Protocols" (p.3). The NREL baselines standardize the daily shower hot water usage for replace-on-burnout (ROB) and early retirement (ER) measure installations to 28.01 and
23.3 gallons per day for single and multifamily, respectively.

The purpose of the normalization factor is to account for this change in assumed daily hot water baseline water usage from the daily usage derived from the residential field study to the usage adopted for DEER from the NREL study. The normalization factor shown below was calculated as the ratio of daily hot water consumption derived from the NREL study to the daily hot water consumption calculated from the 2009 field study. The inputs for this calculation are provided in the following table.

$$G = \frac{WU_{day\ DEER/NREL}}{WU_{day\ field\ study}}$$

Normalization Factor Inputs

Parameter	Single Family	Multifamily / Mobile Home	Source
Shower gpd/household (DEER assumption/NREL)	28.01	23.34	Henron, H. and C. Engebrecht. 2010. *Building America House Simulation Protocols.* Prepared for the U.S. Department of Energy Building Technologies Program. Golden, CO: National Renewable Energy Laboratory (NREL). NREL Report Number TP-550-49426. California Public Utilities Commission (CPUC), Energy Division. 2013. "Workpaper Disposition for Water Fixtures." February 22.
Shower gpd/household	48.81	33.27	Sempra Energy Utilities (SEU). 2012. "SEU 2009 ASW Data REDACTED.xlsx".

"

THERMOSTATIC SHOWER VALVE WATER SAVINGS

A thermostatic shower valve (TSV) is a device that stops the flow of water through a showerhead when the water temperature reaches a certain temperature (eg. 95 degrees F). The shower user will then need to re-open the valve to let the warm water flow and take the shower by pulling on

a string. More information about the device can be obtained at:

https://www.thinkevolve.com/pages/showerstart-tsv3

The water savings for the low-flow showerheads are obtained from the CPUC's workpaper, entitled "SWWH003-01 TSV with and without Integrated Low-Flow Showerhead 032121 with corrections.zip".

The full workpaper is available to download at:

http://www.deeresources.net/workpapers

For the thermostatic shower valve that will be installed in a home, installed in a shower line without a thermostatic valve, in an Accelerated Replacement (AR) setting, California Climate Zone 9 (the climate zone for most of the city of Los Angeles), the water savings are determined as 575 gallons per year or 0.0018 acre-feet per year (assuming more conservative usage in a multifamily home). With a device life of 10 years, the lifetime water savings are 0.0180 acre-feet of water per device. It should be noted that a thermostatic shower valve is almost always installed in combination with a low-flow showerhead, and in such combination, the water savings will be 0.0018 + 0.0058 = 0.0076 acre-ft/year or 0.076 acre-feet per device (lifetime).

The following is an excerpt from the thermostatic shower valve workpaper,

"Calculation of Water Usage and Water Savings of Low-Flow Showerhead

The calculation of water savings due to the installation of a low-flow showerhead is shown below. Annual water savings is calculated as the difference between the estimated base case and measure case annual water usage.

Annual water usage is a function of the showerhead flow rate (gpm), the average duration of each shower, the average number of showers taken per day per household, and the average number of showerheads per household. This calculation also includes a throttling factor which is a constant that represents the assumed actual water pressure as a portion of full pressure (80 psi). The annual water use calculation also includes a baseline water usage normalization factor, which adjusts the estimated water consumption to account for a change in the baseline hot water consumption as per the Water Fixture Disposition issued by the Energy Division of the California Public Utilities Commission (CPUC) in 2013.[22]

$$WS_{showerhead} = WU_{base} - WU_{measure}$$

$$WU = \frac{FlowRate \times F \times Min \times Days \times QShwr}{N} \times G$$

$WS_{showerhead}$ = Annual water savings (gal/yr) for low-flow showerhead
WU = Annual water use (gal/yr), for base or measure case
$FlowRate$ = Showerhead water flow rate (gpm) for base or measure case fixtures

[22] California Public Utilities Commission (CPUC), Energy Division. 2013. "Workpaper Disposition for Water Fixtures." February 22.

F = *Throttling factor (%)*
Min = *Average shower time (min/day)*
QShwr = *Number of showers per household per day*
Days = *Shower days of operation (days/yr)*
N = *Number of showerheads per household, SF or MF*
G = *Baseline water usage normalization factor*

Throttling Factor: This factor adjusts the showerhead flow rate to account for pressures less than 80 psig, for limiting flow by throttling back (closing) the control valve to the shower, and to account for partial clogging due to debris in the pipe or from calcium deposits in areas with hard water contributes to this factor.

Operating Days per Year. This analysis assumes showerhead fixtures are in operation 365 days per year.

Baseline Usage Normalization Factor: The 2013 "Water Fixture Disposition" adopted the assumptions for baseline daily hot water (DHW) usage in the Database for Energy Efficient Resources (DEER). As per the 2013 Water Fixture Disposition, the "DEER values for daily hot water use by end use are developed by NREL for the Building America House Simulation Protocols" (p.3). The NREL baselines standardize the daily shower hot water usage for NR and AR measure installations to 28.01 and 23.3 gallons per day for single and multifamily, respectively.

The purpose of the normalization factor is to account for this change in assumed daily hot water baseline water usage from the daily usage derived from the residential field study to the usage adopted for DEER from the NREL study. The normalization factor is calculated as the ratio of daily hot water consumption derived from the NREL study to the daily hot water consumption calculated from the 2009 field study. The inputs for this calculation are explained below.

$$G = \frac{WU_{day\ DEER/NREL}}{WU_{day\ field\ study}}$$

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

The following appliances and fixtures will be installed:

Project Measures	3-Year Installation Device Quantity
Showerheads, 1.5 gpm	20,500
Bathroom Faucet Aerators, 1.0 gpm	24,600
Kitchen Faucet Aerators, 1.5 gpm	21,800
Thermostatic Showervalves + LF Showerheads	1,880
Water Loss Detection	7,920
Premium High Efficiency Toilets	1,900
Irrigation Controllers	2,080
Turf replacement (sq.ft.)	150,000

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.

SoCalGas, working in concert with the CPUC and its consultants, performs rigorous Evaluation, Measurement, and Verification (EM&V) on all program activities to verify the existence of non-efficient appliances and fixtures before the retrofit. The programs also conduct an inspection process to verify that the measures have been successfully installed and are operational. The published water savings for all measures are shown in Tables 1 and 2, and the sources for the savings have been discussed previously in this section.

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

The devices will be installed through a direct install program.

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

LADWP will perform an analysis on the metered water data for the property, prior to and after replacement, with appropriate adjustments for plant establishment periods for the sustainable landscapes, to verify the amount of water saved.

Note that an agreement will not be awarded for an improvement to conserve irrigation water unless the applicant agrees to the terms of Public Law 111-11 § 9504(a)(3)(B) (see Section F.2.7. Requirements for Agricultural Operations under P.L. 111-11 §9504(a)(3)(B).

The irrigation water conserved through this project is potable residential water and not agricultural related.

E.1.2. Evaluation Criterion B—Renewable Energy (20 points)

Subcriterion B.1—Implementing Renewable Energy Projects Related to Water Management and Delivery

This project does not include implementation of renewable energy capacity.

E.1.2.2 Subcriterion B.2—Increasing Energy Efficiency in Water Management

Up to 6 points may be awarded for projects that address energy demands and reduce greenhouse gas emissions by retrofitting equipment to increase energy efficiency and/or through water conservation improvements that result in reduced pumping or diversions.

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.

The proposed project will result in direct gas energy savings from reduced hot water consumption for measures such as low-flow showerheads, aerators, and thermostatic water shut-off valve that directly reduce domestic hot water that is heated by natural gas. It is estimated that

the Project will result in direct savings of 4,221,726 Therms annually, and electricity savings of 3,309,454 kWh annually from reduced conveyance of water to the point of delivery, as summarized in Table 3.

DIRECT ENERGY SAVINGS

All direct energy savings associated with the measures above are calculated using the methodology presented in technical workpapers that have been prepared using California utility ratepayer funding under the auspices of the California Public Utilities Commission (CPUC). These workpapers have been reviewed and vetted by independent technical experts commissioned by the CPUC. The direct energy savings for the measures that reduce hot water consumption reflect the amount of energy associated with heating the domestic water to the temperature at usage. For discussions regarding the CPUC technical workpapers, please refer to Section E.1.1. To illustrate how the energy savings are determined in a workpaper, the following is an excerpt from the Low-flow showerhead workpaper that shows how the direct gas energy savings are calculated. The full details of the calculations are available in each CPUC workpaper.

"GAS SAVINGS (THERMS)

The gas unit energy savings (UES) of this measure is based upon the estimated decrease in hot water usage as a result of the installation of a low-flow showerhead or flow control valve. The calculation of water savings and gas energy savings are explained below.

Calculation of Water Usage and Water Savings

The calculation of water savings due to the installation of a low-flow showerhead or flow control valve is represented below. Annual water savings is calculated as the difference between the estimated base case and measure case annual water usage.

Annual water usage is a function of flow rate (gpm), the average duration of each shower, the average number of showers taken per day per household, and the average number of showerheads per household. This calculation also includes a throttling factor which is a constant that represents the assumed actual water pressure as a portion of full pressure (80 psi). The annual water use calculation also includes a normalization factor, which adjusts the estimated water consumption to account for a change in the baseline hot water consumption as per a Water Fixture Disposition issued by the Energy Division of the California Public Utilities Commission (CPUC) in 2013.[23]

The inputs to calculate base case and measure case water usage are provided in following tables. Note that this measure is applicable for single family, multifamily, and mobile home installations. Due to lack of data on mobile home water usage, particularly at the fixture type level (showerhead, faucet), the mobile home water usage and savings calculations adopt the more conservative multifamily values.

$$WS = WU_{base} - WU_{measure}$$

[23] California Public Utilities Commission (CPUC), Energy Division. 2013. "Workpaper Disposition for Water Fixtures." February 22

$$WU = \frac{FlowRate \times F \times Min \times Days \times QShwr}{N} \times G$$

WS = Annual water savings (gal/year)
WU = Annual water use (gal/year), for base or measure case
FlowRate = Showerhead water flow rate (gpm) for base or measure case fixtures
F = Throttling factor (%)
Min = Average shower time (min/day)
QShwr = Number of showers per household per day
Days = Shower days of operation (days/year)
N = Number of showerheads per household, SF or MF G = Normalizing factor

The purpose of the normalization factor is to account for this change in assumed daily hot water baseline water usage from the daily usage derived from the residential field study to the usage adopted for DEER from the NREL study. The normalization factor shown below was calculated as the ratio of daily hot water consumption derived from the NREL study to the daily hot water consumption calculated from the 2009 field study. The inputs for this calculation are provided in the following table.

$$G = \frac{WU_{day\ DEER/NREL}}{WU_{day\ field\ study}}$$

Calculation of Gas Unit Energy Savings

The gas UES is based upon the estimated decrease in hot water usage as a result of the installation of a low-flow showerhead or flow control valve.

$$UES_{therms} = \left[\frac{WS \times Cp \times WaterWeight \times \left(\frac{1\ therm}{100{,}000\ Btu}\right)\left(T_{mixed} - T_{ground}\right)}{EFF_{gas}}\right]$$

UES_{therms} = Annual gas unit energy savings (therms/year)
WS = Water savings
Cp = Specific heat capacity of water (Btu/lb/°F), fixed constant
WaterWeight = Weight of water (lb/gal), fixed constant
T_{mixed} = Mixed water temperature, at faucet (°F)
T_{ground} = Make-up groundwater temperature, (°F)
EFF_{gas} = Water heater efficiency, gas (recovery efficiency)

"

EMBEDDED ENERGY SAVINGS

In addition to the direct energy savings, there is also embedded energy associated with the conveyance and treatment of water in the State of California, which is often referred to as the "water-energy nexus" savings. The CPUC's water-energy nexus technical workpaper contains the embedded energy savings for most of the measures included here. This workpaper is entitled "SWMI001-01 Water Energy Nexus_2020-07-20.zip" and can be found in the workpaper database cited earlier.

"Water-Energy Calculator

The Water-Energy Calculator assesses water-energy program cost effectiveness for energy efficiency portfolios.[24] The Water-Energy Calculator, one of the tools addressed in D.15-09-023, calculates energy savings associated with moving and treating water, along with related indirect off-site energy impacts. The intended use of this water/energy cost-effectiveness analysis tool is to:

- Estimate the IOU and non-IOU embedded energy savings that result from joint water-energy programs,
- Assess the benefits that accrue to energy utilities and to water utilities from programs and measures that save both energy and water, and
- Determine if incentivizing measures and programs that save both energy and water is a cost-effective use of IOU energy ratepayer funds.

Prior energy efficiency tools measured only the direct energy savings associated with reduced water use in site-specific energy savings programs directed at customers. Consequently, programs or projects that estimate the energy required by the water system above and beyond the site-specific energy use (such as energy use required for hot water use) could not be quantified prior to the Water-Energy Calculator. However, with CPUC approval of the Water-Energy Calculator, embedded energy savings from water conservation projects and programs that target the water system can be quantified, and costs and benefits can be allocated among program administrators.

Electric Savings (kWh)

Embedded electric energy savings of the WEN Measures specified in the Measure Case Description were calculated with the Water-Energy Calculator (version 1.05).[25] To calculate the embedded energy savings, the Water-Energy Calculator requires water savings values from existing approved statewide deemed energy efficiency measures and/or water savings values developed by MWD.

The resultant embedded energy savings values represent incremental energy savings by hydrological zone. Because the unit energy savings (UES) of the IOU WEN measures do not account for embedded energy in water (as defined in the Technology Summary), the estimated embedded energy savings for WEN measures are additive to the approved UES values. The incremental embedded energy savings were calculated for the measures specified in the Measure Case Description. Other water saving measures may be incorporated later as data becomes available.

Overview of the Water-Energy Calculator Approach

The Water-Energy Calculator (version 1.05) calculates all three water-related benefits in a single tool that can be used for analyzing the benefits of water conservation measures. Specifically, this tool provides:

[24] California Public Utilities Commission (CPUC), Navigant Consulting, Inc., and GEI Consultants. (n.d.) "Water-Energy Calculator. Version 1.05."
[25] California Public Utilities Commission (CPUC), Navigant Consulting, Inc., and GEI Consultants. (n.d.) "Water-Energy Calculator. Version 1.05."

- Analysis of the Avoided Embedded IOU Energy in Water is contained within the Water Energy Calculator.
- The Avoided Capacity Cost of Water is calculated by the Avoided Water Capacity Cost Model (developed by the Navigant team). These values feed into the Water Energy Calculator.
- Environmental Benefits of Reduced Water Use is obtained from secondary data review of existing environmental benefits models.

The Water-Energy Calculator estimates IOU and non-IOU embedded energy savings. These embedded energy savings consider the energy intensity of the weighted average mix of water supplies to a given region as well as the energy intensities of the other system components (treatment, distribution, and wastewater systems as appropriate).

The Water-Energy Calculator requires water savings values developed for measures implemented in the IOU portfolios ("IOU WEN measures") and water savings values developed by the Metropolitan Water District (MWD), referred to as "MWD WEN measures." The following sections detail the step-by-step procedure on how the final embedded water energy savings are outputted from the Water-Energy Calculator.

Table 3 presents the summary of energy savings by measure, including both the direct gas savings and the associated embedded energy savings. The following factors were assumed in the calculations of these savings:

- Where available, saving for multifamily is selected (some of the embedded water-energy nexus calculations are grouped only into a common residential sector).
- It is assumed that the new devices are "Accelerated Replacement" of existing devices due to the direct install approach that replace devices in situ, not at burn out.
- Installations take place in California Climate Zone 9 where most of Los Angeles is located.
- The hydrologic region of South Coast, where most of Los Angeles is located, is used, and the embedded energy savings reflect only the energy savings credit for non-IOU, which includes LADWP for the region. The energy savings credits are calculated based on the contribution of various electric utilities in the region to the conveyance of water (IOU vs. non-IOUs eg. LADWP; it should be noted that designated IOU for the South Coast region is Southern California Edison).
- Water loss detection is not a measure in this workpaper, so the embedded energy savings is treated as zero due to the lack of available data.

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

The proposed project will result in a lifetime savings of 4,221,726 Therms and 3,309,454 kWh. According to the EPA GHG calculator, these savings correspond to 22,337 and 2,345 metric tons of GHG respectively, totaling 24,682 metric tons, which is equivalent to removing 5,493

gasoline-powered passenger cars for a year.

Table 3 – Summary of Device Energy Savings, Direct and Embedded

Measure	3-Year Quantity	Device Life	Direct Therms/Unit	Embedded kWh/Unit	Total Annual Therm Savings	Total Annual kWh Savings	Lifetime Therm Savings	Lifetime kWh Savings
Showerheads, 1.5 gpm	20,500	10	8.65	2.71	177,325	55,555	1,773,250	555,550
Bathroom Faucet Aerators, 1.0 gpm	24,600	10	2.8	2.76	68,880	67,896	688,800	678,960
Kitchen Faucet Aerators, 1.5 gpm	21,800	10	7.1	2.53	154,780	55,154	1,547,800	551,540
Thermostatic Showervalves + LF Showerheads	1,880	10	11.27	2.68	21,188	5,038	211,876	50,384
Water Loss Detection	9,950	10			-	-	-	-
Premium High Efficiency Toilets	1,900	20		0.41	-	779	-	15,580
Irrigation Controllers	2,080	10		26.8	-	55,744	-	557,440
Turf replacement (sq.ft.)	150,000	30		0.2	-	30,000	-	900,000
TOTAL					**422,173**	**270,166**	**4,221,726**	**3,309,454**

•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 energy savings estimated above consider the significant pumping energy needed to convey water across the state and the Los Angeles region. The amount of embedded energy savings for the devices is established in the workpaper referenced above. The Water-Energy Nexus calculator developed by the CPUC is generally the acceptable and most widely used method of calculating the embedded energy, including pumping, for water used in California. The current version of the Water-Energy Nexus calculator can be accessed at the following website:

https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/demand-side-management/energy-efficiency/water-energy-nexus-programs

•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.

Because the areas served by LADWP use water from multiple sources, a combination approach is used for the purposes of calculations, as contained in the Water-Energy Nexus Calculator.

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

Yes, the embedded energy savings are included in the CPUC water-energy nexus workpaper.

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

No reduced vehicle miles driven will result from the proposed work.

E.*1.3. Evaluation Criterion C—Other Project Benefits (15 points)*

Resilience and Sustainability Benefits. *Will the project address a specific water and/or energy sustainability concern? Please address the following:*

Explain and provide detail of the specific issue(s) in the area that is impacting water resilience and sustainability. Consider the following:

•Describe recent, existing, or potential drought or water scarcity conditions in the project area.

Drought in Los Angeles, California:

The Project is in the City of Los Angeles (City) which has a semi-arid climate and has had a long history of droughts and varying hydrology. Given the City's location, up to 90% of the water supplied to its residents has been imported water from the Los Angeles Aqueduct (LAA) and the Metropolitan Water District (MWD). MWD, in turn, sources their water through the Colorado River Aqueduct and the California Aqueduct (also known as the State Water Project (SWP)). The City relies on water bought from MWD to meet demand, during hydrologically dry years or drought years, when LAA supplies decrease.

While the City has had a long history of droughts, these periods have been getting longer and more frequent and supplemental water supplies have become less reliable. California was in a three-year drought from 2007-2009 and a five-year drought from 2012-2016, with its most recent drought from 2020-2022. While prohibited uses and mandatory watering restrictions have been in effect in the City since 2009, these efforts had to be increased to face the challenges of the most recent drought. In 2021, California experienced its second driest water year in the state's recorded history and California's Governor Gavin Newsom expanded a drought emergency declaration for the entire state of California. As of 2022, California had experienced three consecutive years of drought and experienced its driest first three months of the year in recorded history, with limited storage in its major reservoirs.

These long dry periods have also been followed by intense wet periods in which the City takes advantage of its stormwater capture and groundwater recharge infrastructure. In 2023, the City experienced some of its wettest months on record and an unprecedented hurricane, which also delivered significant snowpack to the Sierra Nevada Mountain range, resulting in significant relief for water supply issues in California. This provided enough water for the City to ease some of its drought restrictions in the summer of 2023, but highlighted the importance of having infrastructure available to withstand long wet periods and capture this additional precipitation for it to be used at later times. Specifically, LADWP was able to capture about 160,000 acre-feet (AF) of water in 2023 due to LADWP and other improvements to stormwater capture facilities. The City may not have had the chance to capture this water had it not been proactive and ready for increased swings in precipitation.

While imported water supplies are highly impacted due to variability in climate and hydrology, they have also been subject to other restrictions, exacerbating water scarcity in the City. Below is more detail on each of the City's imported water sources and the other challenges they have faced.

Colorado River Aqueduct (CRA):

The CRA is supplied by the Colorado River Basin (CRB), most of which is arid or semi-arid and generally receives less than ten inches of precipitation per year. Particularly, the CRB has had severe dry conditions that have persisted for the last two decades with precipitation slightly below average and runoff below average in two out of every three years. From 2000-2022, the CRB has experienced the driest 23-year period in more than a century and one of the driest periods in the last 1,200 years. In 2021, the Bureau of Reclamation (BOR) announced its first ever shortage declaration pursuant to the provisions of its Interim Guidelines for Lower Basin Shortages and Coordinated Operations (Interim Guidelines) of Lake Mead and Lake Powell adopted in 2007. The shortage declaration was repeated in calendar year 2023 as well. This triggered cuts to the Colorado River water allocations for several western states, and the country of Mexico. BOR began a supplemental environmental impact statement (SEIS) process in 2023 to change its existing Interim Guidelines in response to both Lake Mead and Lake Powell reaching record low elevations.

State Water Project (SWP):

Recent 2022 drought conditions extremely limited the water available for the City through MWD's SWP water supplies. In April of 2022, MWD declared a water shortage emergency condition and implemented the Emergency Water Conservation Program to MWD's six SWP dependent agencies, which included LADWP. This limited the amount of water delivered to the six SWP dependent agencies to health and safety water allocations which amounted to 55 gallons per person per day. Even though MWD had roughly three million AF in storage, LADWP and others did not have sufficient access to certain storage and supplies from MWD. MWD had to borrow health and safety supplies from the State to meet basic customer drinking and sanitary needs. Consequentially, LADWP stayed within its maximum allowed water allocation from MWD by implementing Phase 3 of the Emergency Water Conservation Plan to reduce outdoor watering in the City. While a 100% allocation was received from the SWP due to increased precipitation in 2023, a full allocation had not happened since 2006. Overall, this highlights the reliability and variability of supplies from the SWP for the City.

•*Is the project in an area that is experiencing, or recently experienced, drought or water scarcity?*

Yes, the Project will occur throughout homes in the City of Los Angeles (City). The City has a semi-arid climate, with a history of droughts and large oscillations in precipitation. California experienced statewide droughts from 2007-2009, 2012-2019, and 2020-2022. In the recent drought, California experienced its three driest years on record. California's Governor Newsom declared a drought emergency for the entire state of California in 2021 and called for a 15% percent water usage reduction for all Californians in July of 2021. The Governor also called on local water suppliers to move to Level 2 of their Water Shortage Contingency Plans and directed the State Water Resource Control Board to ban on the watering of decorative grass at commercial, industrial, institutional, and HOA common areas. However, given increased precipitation during the beginning of 2023, California's Governor Newsom removed some of the

drought emergency provisions in March of 2023 with other state emergency proclamations put in place due to the winter storms. While this allowed 2023 to start off with a large amount of water, the 2024 "Water Year", defined as October 1, 2023 – September 30, 2024, started with precipitation in the Eastern Sierra trending with the driest year on record, but has since increased to roughly 60% of normal April 1st conditions, which is the historical peak. The SWP initial Table A allocation for 2024 is still only at 10% of full service demands.

•Describe any projected increases to the severity or duration of drought or water scarcity in the project area. Provide support for your response (e.g., reference a recent climate informed analysis, if available).

The information below was referenced from LADWP's 2020 Urban Water Management Plan (UWMP). This plan is published every five years with the next update slated for 2025.

Los Angeles Aqueduct (LAA):
Annual LAA deliveries to the City are forecasted to decrease since the deliveries are dependent on snowfall in the Eastern Sierra Nevada Mountains. LADWP has conducted several studies in recent years to further evaluate potential climate impacts to the Eastern Sierra Nevada watershed and deliveries from the LAA system. In 2011, LADWP completed a Climate Study (Study) that utilized a set of 16 general circulation models and two greenhouse gas emission scenarios to model climate impacts in the Eastern Sierra Nevada region through the end of the 21st century. The Study results suggested an expected increase in temperature of 8 degrees Fahrenheit, reduction in precipitation of 10 percent, and reduction of snowpack, all of which might affect LAA supply deliveries. The Study's forecasted modeling results from hydrologic impacts indicate that the long-term average LAA supply of 192,000 AFY will drop to 184,200 AFY by 2045 under average year weather conditions. However, in a single dry year condition, defined as a repeat of FY 1989/90 hydrology, deliveries are forecasted to be as low as 68,500 AFY. This decrease of 115,700 AFY totals to enough water for about 1,388,400 City residents per year. That's almost a third of the City's population of around 4 million residents that would be impacted.

State Water Project (SWP):
The Department of Water Resources (DWR) annually approves the amount of contract allocations SWP contractors will receive. One of the variables impacting projected water supplies available include snowpack in the Sierra Nevadas. In 2014, SWP contractors received only five percent of their allocations. In 2017, SWP contractors received 85 percent. In 2019, DWR released the 2019 State Water Project Delivery Capability report that provides contractors with current and projected water supply availability for the SWP. This report factors in climate change, sea level rise, current regulations, and water use assumptions upstream of the Bay-Delta. MWD projects their SWP supply capability to be 1.761 million acre-feet (MAF) in 2045 under average conditions. This projection includes SWP-related groundwater storage and water transfer programs. Excluding SWP-related groundwater storage and water transfer programs, current programs are expected to result in 1.521 MAF under average conditions; while under multi-year dry conditions (1988-1992 hydrology) and single-dry year conditions (1977 hydrology), MWD expects to receive only 628,000 AF and 416,000 AF, respectively. This has a potential to affect City supplies since the City heavily relies on MWD supplies.

Colorado River Aqueduct (CRA):

Per the 2020 UWMP, the long-term outlook of Lake Mead is for continued decline of the reservoir level which has, and may, continue to reduce the amount of Colorado River water currently available to MWD. Per BOR's *Revised Draft Supplemental Environmental Impact Statement for Near-term Colorado River Operations*, "Although hydrology improved in 2023, it is foreseeable that without appropriate responsive actions and under a continuation of poor hydrologic trends, major Colorado River reservoirs could continue to decline to "dead pool" in the coming years."

BOR also issued its January 2024 24-Month Study Projections that reported on hydrological and projected operations for the Colorado River system reservoirs for the next two years. It projects the following elevations for Lake Mead by December 31, 2024: probable minimum elevation to be 1,053.7 feet (ft), most probable elevation to be 1,056.19 ft, and probable maximum to be 1,064.89 ft. Level 1 shortage conditions on Lake Mead are triggered when the elevation reaches between the range of 1,050 ft to 1,075 ft. As a result, under all three circumstances in the report, Lake Mead would fall in this shortage condition.

•*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.*

While SoCalGas aspires to become carbon neutral by 2045, and it is currently pursuing carbon-neutral technologies such as hydrogen and renewable natural gas, the homes receiving measures through this project still uses natural gas for domestic hot water heating. Some of the measures proposed in this project will directly reduce the amount of natural gas being used, and energy efficiency is a key component of SoCalGas's Aspire 2045 to reduce the carbon footprint of its consumers and convert the remaining to carbon-neutral technologies.

•*Please describe how the project will directly address the concern(s) stated above.*

The Project will directly address the concerns of varying hydrology in the City by promoting water conservation, water use efficiency, and stormwater capture in the Project's sustainable landscape installation. The Project will have established project guidelines and requirements for customers to ensure that water supplies are conserved, optimized and augmented inside and outside residences.

For instance, to receive a California-Friendly landscape, the multifamily properties must install stormwater retention features. Customers must also only use permeable hardscape to promote groundwater recharge and must provide a 3-inch-deep ring of mulch around each plant that promotes soil health and enhances the soil's water retention. Additionally, overhead irrigation is not permitted in the sustainable gardens. Customers must install drip irrigation to reduce irrigation overspray and water waste. This will help conserve waterand reduce urban runoff that pollutes nearby water bodies. Lastly, the requirement to remove turf and install California Friendly plants and native species will reduce water demand and increase water conservation since these plants can survive dry periods without additional irrigation. Please note that the rules above may be modified in the future subject to coordination with MWD and new local and state laws.

The other water efficient devices will also help conserve water and promote water use efficiency during dry periods throughout the City. For example, Flume devices will provide customers with real-time water use data that will enable them to track their water use and know if there are leaks, allowing the customer to proactively lower their bills and continually improve their water use efficiency.

•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?

Yes, the Project's water efficient device installations will directly result in more efficient management of the water supply and grant greater flexibility to water managers. This Project will particularly help conserve water supplies during dry years by promoting water conservation, water use efficiency, and stormwater capture. Furthermore, the Program's other features will reduce customer-side losses of water. This includes the sustainable garden's rainwater collection features and less water-intensive plants to be installed. These gardens will also prevent the pollution of downstream water bodies, optimizing the City's management of its local watershed. With the installation of water efficient fixtures such as premium high-efficiency toilets, efficient shower heads and faucet aerators, automatic shutoff valves for showers and bathtubs, as well as the reduced flows for landscaping through drip irrigation, water supplies will be used much more efficiently than they are now, thus prolonging the scarce water supplies in the region during drought years and even in average and wet years.

•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 Project will conserve water in various ways by allowing customers to save water on outdoor and indoor use. For example, the sustainable landscape's new plants will require less water than traditional landscapes since the plants' water needs are more appropriate for the Los Angeles climate. These landscapes and the other efficient water fixture upgrades will allow water stored in upstream reservoirs to be preserved and extended for future uses throughout the City. Conserved water could also be made available for other areas in the Southern California region that may need it to meet demands.

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

Nearly all of the conserved water through the indoor and outdoor efficient devices can remain in LADWP's potable water system and can either be re-used for other purposes or re-allocated elsewhere. The amount of the conserved water would be equivalent to 9,500 acre-feet over the life of the devices included in the measures. The annual savings from the project is estimated to be 890 acre-feet of clean water, enough for about 10,680 residents in Los Angeles every year.

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

LADWP's existing potable water distribution system is divided into 5 geographic regions in Los Angeles named the Harbor, East Valley, West Valley, Central, and Western districts. As this system is dependent on the SWP and the CRA to import and distribute water, water conserved will benefit these two water sources and all the other Southern California regions and the Basin States who rely on these sources for water. The Project's rainwater capture features, such as rain barrels and cisterns, will also allow for residential reuse like irrigating the sustainable landscape. Lastly, healthy and living soil with mulch and compost will also aid in the sustainable landscape's water retention and decrease urban runoff.

•*Will the project assist States and water users in complying with interstate compacts?*

California is complying with interstate compacts, including the 2019 Drought Contingency Plans (DCP) for the Colorado River that was signed amongst all Colorado River Board states and Mexico. The Colorado River Board states include California, Arizona, Nevada, Colorado, New Mexico, Utah and Wyoming. Colorado, New Mexico, Utah, and Wyoming are in the Upper Basin States and Arizona, California, and Nevada are in the Lower Basin States. To comply with the DCP, the Lower Basin states were meeting regularly to discuss additional measures needed to avoid and protect Lake Mead from dropping below 1,020 feet. The Project will assist the City with reducing water demands and therefore potentially assist in measures to protect Lake Mead from declining below 1,020 feet.

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

Yes, the Project could help prevent a water-related crisis/conflict by promoting water conservation, water use efficiency, and stormwater capture during California's varying hydrology. As water supplies dwindle and precipitation fluctuates between dry and wet extremes, conserving the relatively low levels of water supplies and capturing large precipitation events becomes vital for the City to effectively manage its water supplies. Future and current tension can be mitigated as these efforts are put into place throughout California so that water can be conserved and used for later dry periods. Reduced water demands can be viewed as future supplies to maintain the growth of the City.

Furthermore, LADWP is striving to meet the 2019 Green New Deal which identifies sourcing 70% of the City's water locally by 2035, capturing 150,000 AFY of stormwater by 2035, and reducing potable water use per capita by 25% by 2035. This would be to bolster LADWP's local supplies in lieu of importing water during times of drought and even non-drought years. An example of the City's conservation success is that now the City uses less water today than was used 50 years ago, but with over one million more people in its population. LADWP wants to either maintain or reduce those water demands while still allowing for the City to grow into this new normal of climate uncertainty.

Ecological Benefits. *In addition to the separate WaterSMART Environmental Water Resources Projects NOFO, this NOFO places a priority on projects that that result in ecological benefits, through this section and other sections above, consistent with the SECURE Water Act. Please provide information regarding how the project will provide ecosystem benefits, including the following:*

•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).

By reducing the City's future reliance on imported water, the Project allows LADWP to contribute to ongoing ecosystem restoration efforts in places like the San Francisco Bay and Sacramento-San Joaquin Delta (Bay-Delta) and the Eastern Sierra's Owens Basin. Several species in the Bay-Delta and Owens Basin are listed as either threatened or endangered and are associated with the water supplies from these imported sources, specifically:

Bay-Delta List:

1. ***Hypomesus transpacificus (Delta Smelt)*:** The Delta smelt is listed as a threatened species under the ESA. In April 2010, the United States Fish and Wildlife Service (USFWS) considered a petition to reclassify the Delta smelt as endangered; following review of all available evidence, USFWS determined that such a reclassification is warranted, but precluded by other higher priority listing actions.
2. ***Oncorhynchus tshawytscha* (Chinook salmon):** The Sacramento winter-run and Central Valley spring-run Chinook salmon are listed as endangered pursuant to the ESA.
3. ***Oncorhynchus mykiss* (Central Valley steelhead):** The Central Valley steelhead is listed as endangered under the ESA.

The Delta smelt, which was listed as threatened under the ESA in 1993, has been utilized as a general "marker" to determine the health of the Bay-Delta ecosystem. In 2008, Judge Oliver Wanger of the U.S. District Court for the Eastern District of California issued a biological opinion prepared by the U.S. Fish and Wildlife Service (USFWS). The biological opinion was prepared in response to a request from the Bureau of Reclamation (USBR) and addressed the effects of the continued operation of the USBR's Central Valley Project (CVP) and California's SWP on the Delta smelt and its designated critical habitat. It determined that operation of the CVP and SWP is likely to jeopardize the continued existence of the Delta smelt and adversely modify its critical habitat. As a result of the biological opinion, both the CVP and SWP were required to make sharp reduction in allocations to water contractors. While a variety of factors are thought to have contributed to the decline of the Delta smelt, experts believe that water exports directly contribute to the health of the population. Impacts associated with water exports include reductions in freshwater outflow, entrainment losses to water diversions, entrainment at power plant intakes, and changes in the abundance and composition of food sources.

Owens Basin List:

The Owens Basin has two species of federally and state endangered fish that depend on aquatic habitats in the Owens Basin:

1. The Owens Pupfish (*Cyprinodon radiosus*) and
2. Owens Tui chub (*Siphateles bicolor snyderi*).

•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, recreational benefits, etc.).

Yes, the indoor and outdoor installations will allow water to remain in the potable water system for longer periods of time and allow for the capture of varying precipitation. This would provide the benefit of maintaining water levels in the water distribution system, external storage systems, and locally for customers to reduce their water use at home. This respective water may then be rerouted and allocated for other uses throughout State. For instance, conserved water could be made available for other areas in the Southern California region that may not have as much flexibility with their water supply sources by offsetting the amount of water that is imported directly to the City. Additionally, upstream reservoirs will be able to maintain their storage levels which could impact habitat maintenance in LADWP's aqueduct reservoirs.

•Will the proposed project reduce the likelihood of a species listing or otherwise improve the species status?

This project may provide indirect benefits to species' listings and statuses. For example, an increase in water conservation and water use efficiency may decrease the reliance on imported water from the LAA, CRA, and SWP that convey water from ecosystems and habitats in the Eastern Sierra Nevada, Colorado River Basin, and Bay-Delta, respectively. While environmental commitments are still met amidst LADWP's exports from the Eastern Sierra, LADWP may be able to purchase less imported water from these other sources in the long term. The sustainable gardens may also provide localized benefits by reducing the proliferation of weeds and pests, and providing food and habitats for local pollinators and birds. Reducing urban runoff pollution may also benefit other species' ecosystems and habitats in the City's local rivers.

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

California has explicitly recognized the need to address the ongoing ecological deterioration of the Bay-Delta in the "co-equal goals": (1) creation of a more reliable water supply for California and (2) restoration of the Bay-Delta ecosystem. To address the latter goal, a group of federal, state and local water agencies; state and federal fish agencies; environmental organizations and other interested parties developed the Bay Delta Conservation Plan (BDCP) to identify water flow and habitat restoration actions to recover endangered and sensitive species and their habitats in the Bay-Delta. In addition to assessing options for statewide water conveyance improvements, the BDCP also recognizes the importance of local resource strategies, such as water conservation, water recycling and urban runoff management in the effort to reduce pressure on the Bay-Delta ecosystem. This effort is on-going and has been focused on a new alternative that divides the project into two separate efforts for new conveyance and habitat restoration, titled "California Water Fix" and "California EcoRestore," respectively.

Overall, ecosystem benefits will vary depending on the program upgrades that are installed. Installing a sustainable landscape through turf replacement will increase the local plant diversity, attract local pollinators necessary for ecosystem health, provide habitats and food for local wildlife like birds and butterflies, decrease pest proliferation in the area, and build healthy soil with compost and mulch. Furthermore, improved irrigation systems will help prevent urban runoff that pollutes downstream water bodies. The stormwater capture features will also help decrease urban runoff and pollution into downstream rivers and the Pacific Ocean. Lastly,

reducing the use of synthetic fertilizers in these landscapes may also reduce the eutrophication and pollution of nearby receiving water bodies since the fertilizer's remnants can be conveyed through urban runoff.

The Project may also contribute to GHG reductions. The domestic upgrades will reduce air pollution by reducing GHG emissions and other byproducts associated with water heating. Additionally, water conservation and water use efficiency will help reduce the energy needed for imported water pumping and conveyance from the CRA and SWP since they can be the most energy intensive among LADWP's imported water sources.

The increased water conservation may also bring indirect benefits to ecosystems from which the City imports its water. In the Mono Basin, LADWP historically diverted water from four tributary streams of Mono Lake. Between 1971 and 1988, LADWP averaged 83,400 AFY from the Mono Basin. Beginning in 1989, with the issuance of a landmark California Supreme Court case, LADWP began to reduce exports to comply with legal requirements. In 1994, the State Water Resources Control Board (SWRCB) entered Decision 1631, which established fishery protection flows for streams tributary to Mono Lake. Decision 1631 also set limits on LADWP water exports from the Mono Basin to a range of 0 to 16,000 AFY. Since 1994, LADWP's average Mono Basin export has been 12,000 AFY.

***Climate Change**: E.O. 14008 emphasizes the need to prioritize and take robust actions to reduce climate pollution; increase resilience to the impacts of climate change; protect public health; and conserve our lands, waters, oceans, and biodiversity.*

•Describe how the project addresses climate change and increases resiliency. For example, does the project help communities adapt to bolster drought resilience?

Climate change has caused California and the City to experience longer dry periods and unprecedented wet periods, oscillating the amounts of water available to the City at any given point. The Program's various features will help stabilize the local water LADWP manages by promoting water conservation, water-use efficiency, and stormwater capture. Without this local water supply stabilization, the City might have to purchase more imported water from MWD at a higher cost during periods of varying hydrology. This then might cause utility bills to increase for the City's residents, a majority of which live in disadvantaged communities. The Program's features will therefore benefit the City's ratepayers by helping maintain water rates and expanding the customer's options to bolster their local drought resilience efforts. Customers will be able to choose to reduce their utility bills through water conservation installations and learn about their water consumption through real-time water usage data. These efforts are optimized further through residential landscape workshop classes LADWP offers for customers to learn how to make their garden California-Friendly and become more waterwise gardeners. The California Native Plant Landscaper Certificate Program is also offered to train gardeners on how to maintain these new sustainable gardens. In this way, the communities will play a direct role in adapting to drought resilience in their neighborhoods and their City.

There are also other ancillary benefits of the Program. For instance, the sustainable landscapes may help reduce heat island effects in urban communities as temperatures rise due to climate change. The Program ensures this by requiring for there to be three plants for every 100 sq-ft of

turf replaced, along with organic mulch to be used around planted areas, and the use of trees where possible. This may increase cooling shade for homes, minimize materials that often absorb the sun's heat, and may assist customers in limiting energy use by reducing the need for air conditioning. Additionally, this project will result in a significant amount of direct and embedded energy savings from imported purchased water that will reduce GHG emissions that disproportionately affect disadvantaged communities. The reduction in these GHG emissions may contribute to combatting the climate change crisis at large and locally.

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

The Project's upgrades will promote ecological resiliency in several ways. For example, the sustainable landscapes will utilize efficient drip irrigation systems, which prevent the pollution of downstream water bodies resulting from inefficient irrigation systems overspray and overwatering used on conventional turf. This can produce a higher amount of water runoff that can channel local street pollutants to the City's local water bodies like the Los Angeles River and Pacific Ocean. The sustainable gardens' drip irrigation components will reduce the pollution that is channeled to downstream water bodies, benefiting the animals, habitats, and ecosystems dependent on these water bodies. The drip and other smart irrigation also deliver water directly to plant roots, minimizing evaporative losses and promoting their growth and establishment, allowing them to provide longer lasting ecological benefits to the surrounding ecosystems, insects, pollinators, and birds. Lastly, the absence of synthetic fertilizers in sustainable landscapes will also help reduce water pollution since the fertilizer's nitrogen can run off into local water bodies and cause eutrophication. Since eutrophication impairs the water quality of bodies of water other animals may deem as their habitat, this is another way sustainable gardens directly benefit the local ecology.

When compared to conventional turf, sustainable landscapes will also enhance and promote the longevity of wildlife since the California-Friendly and native species of plants are more suitable for adapting to the City's climates and varying hydrology. Specifically, customers can identify which microclimate zones their homes are in when they are working on their sustainable gardens, whether it be closer to the coast or the mountains. The specialization of these native plants and the corresponding longevity could therefore increase the likelihood of attracting local insects, pollinators, and birds that could benefit local ecosystems and community gardens. Sustainable landscapes will also promote healthy soils by requiring a 3-inch-deep ring of mulch around each plant. This promotes soil health and enhances the soil's water retention which would also benefit and sustain plant life throughout the communities, especially during varying hydrology caused by climate change.

•*Does the proposed project seek to reduce or mitigate climate pollutions such as air or water pollution?*

Yes, air pollution may be reduced through the Program's installations. Water efficient installations will increase water conservation and water use efficiency which may offset imported water use. Given that imported water from the SWP and CRA is energy intensive, there will be a reduction in GHG emissions associated with the reduction in conveyance and pumping of water imported from hundreds to thousands of miles away. Furthermore, some of the Project's installations will also directly reduce the use of natural gas that is used to heat domestic hot water and, as a result, the combustion byproducts such as Nox released through the process of

hot water heating. California-Friendly landscapes may also increase plant diversity and plant life longevity in neighborhoods, allowing for stronger and longer lasting ecosystems that benefit the surrounding air quality and facilitate carbon capture. Lastly, the absence of gasoline powered lawn maintenance equipment in these gardens may also help reduce local air pollution since this equipment is typically not used for sustainable landscapes when compared to conventional turf.

Water pollution may also be reduced through the installation of California-Friendly landscapes. The landscape's features will mitigate polluted runoff to the Los Angeles River, its streams and rivers, and the Pacific Ocean, by facilitating local stormwater capture, increasing groundwater infiltration, and reducing overwatering that leads to more urban runoff and pollution. By reducing the polluted urban runoff that is channeled to these downstream water bodies, benefits are provided to the animals, habitats, ecosystems, and watersheds dependent on these water bodies. Furthermore, the absence of synthetic fertilizers in sustainable landscapes will help reduce water pollution since the fertilizer's nitrogen will not run off into local water bodies causing eutrophication. Since eutrophication impairs the water quality of the receiving local water bodies, this is another way sustainable gardens directly prevent local water pollution.

•*Does the proposed project include green or sustainable infrastructure to improve community climate resilience?*

Yes, the California-Friendly landscapes include various green and sustainable features that may improve community climate resilience. These include, but are not limited to, rain capturing features like a rain garden, rain barrel, cistern, infiltration trench, or vegetated swale. These will recharge local soils and allow for more localized use of captured stormwater during periods of varying hydrology caused by climate change. These features, along with more drip and smart irrigation installations that prevent overwatering, will increase water conservation and decrease urban runoff which pollutes local water bodies in the City. The plants installed in these gardens are also more suitable for the City's semi-arid climate which may allow them to live longer and survive through more frequent, extended droughts and dry periods. Ultimately, this allows the City to better manage its local water supplies and watershed health that are challenged by climate change.

•*Does the proposed project contribute to climate change resiliency in other ways not described above?*

The Project will help the City reach other sustainability goals as outlined in the City of Los Angeles' 2019 Green New Deal. As outlined, the City has goals of sourcing 70% of water locally by 2035, capturing 150,000 AFY of stormwater by 2035, and reducing municipal water use by at least 22.5% by 2025, and 25% by 2035. By promoting stormwater capture, water conservation and water use efficiency, the Project will help the City approach these goals.

There may also be further potential for the City to expand its Turf Replacement Program to achieve these aforementioned goals. The California Department of Water Resources' Landscape Area Measurement (LAM) Study provided preliminary numbers demonstrating that there is still approximately 1.4 billion sq-ft of total irrigable-irrigated area, where irrigable-irrigated landscape area is area that is currently irrigated and looks green from aerial imagery. Assuming a significant portion of irrigable-irrigated area is turf, there could be significant opportunity for existing landscapes to be converted to California-Friendly landscapes, and reduce water demands

for that. Applying for grant funding to augment the program's existing rebate amount will help identify if financial incentives can help drive the mass market adoption in the multifamily sector of landscape conversion. The City has already been successful in meeting past goals of turf replacement. In April of 2015, Governor Jerry Brown's executive order to replace 50 million sq-ft of turf across the whole of California was accomplished by the City alone as of August of 2020 when over 50 million sq-ft of turf was rebated for through LADWP's Turf Replacement program. This demonstrates that the LADWP and SoCal Gas Co. will be able to effectively utilize any grant funding to further turf replacement in the City and approach the goals outlined in the 2019 Green New Deal.

E.1.4 Evaluation Criterion D—Disadvantaged Communities, Insular Areas, and Tribal Benefits (15 points)

E.O. 14008 affirms the advancement of environmental justice for all through the development and funding of programs to invest in disadvantaged communities. This criterion, which is used to identify projects that advance the Justice 40 Initiative, includes all Federally recognized Tribes and Tribal entities, and any disadvantaged communities in insular areas (American Samoa, Guam, the Northern Mariana Islands, or the Virgin Islands) identified pursuant to the following criteria.

•Please use the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool (CEJST), available online at Explore the map Climate & Economic Justice Screening Tool (screeningtool.geoplatform.gov/ en/#17.59/36.63278/-105.181329) to identify any disadvantaged communities that will benefit from your project.

Per the White House Council on Environmental Quality's interactive Climate and Economic Justice Screening Tool, the population of disadvantaged communities (DACs) within the City of Los Angeles (City) is around 1,972,111 people, or about 52% of the City's total population. The Project will therefore benefit a large portion of DACs in the City.

•If applicable, describe how the proposed project will serve or benefit a disadvantaged community, identified using the tool. For example, will the project improve public health and safety by addressing water quality, add new water supplies, provide economic growth opportunities, or provide other benefits in a disadvantaged community?

The Project will benefit DACs by installing water efficient devices that will reduce their utility bills by conserving water. These Project benefits might also decrease the City's reliance on imported water which is becoming less reliable during drought periods. Lastly, water conserved also has the indirect benefit of reducing GHG emissions that particularly impact disadvantaged communities since imported water can be energy intensive and must be conveyed from hundreds to thousands of miles away.

In addition to the water benefits, the Project will also provide economic growth opportunities. The increased financial incentive through the no-cost direct install approach may encourage more residents to convert their lawns to sustainable landscapes since there has been low participation in LADWP's rebate programs due to the upfront and increasing costs. This may then provide more jobs for the local landscaping businesses that may be subcontracted to work in their own neighborhoods. The Project utilizes a network of contractors that derive their workforce from the local communities, and many from the workforce are the residents of the areas they work in. Therefore, this funding will directly benefit the residents by potentially

providing economic growth through labor investment as well as funding in workforce training and development.

In addition to those residing in DACs, households outside of DACs that qualify as low-income will also be served by the Project through SoCalGas' Energy Savings Assistance Program (ESAP). Table 4 shows how a household can qualify for the ESAP, which is part of the Project.

The City has a population where Hispanics (45.1%), Blacks (6.4%), Native Americans (0.2%) and Asians (15.7%) make up a majority of the city population (combined 67.7%)[26]. The demographics of public housing occupants in the City (35.7% Hispanics, 11.1% Blacks, 12.3% Asians)[27] appears to be fairly similar to the demographics for the entire city. These races that make up the majority of the Los Angeles population have been historically underserved and systematically denied a full opportunity to participate in aspects of economic, social and civic life. The no-cost direct install approach as proposed here will be effective in reaching these underserved communities that need the most assistance.

E.1.4.2 Subcriterion D.2. Tribal Benefits

No, the Project does not directly serve, support, or benefit a Tribe.

Table 4 - ESAP Qualifying Methods and Household Income Limit

Two ways to qualify:

1. Public Assistance Programs

If you or another person in your household receives benefits from any of the following programs.

- Medi-Cal/Medicaid
- Medi-Cal for Families A & B
- Women, Infants & Children (WIC)
- CalWORKs (TANF)[1] or Tribal TANF
- Head Start Income Eligible - Tribal Only
- Bureau of Indian Affairs General Assistance
- CalFresh (Food Stamps)
- National School Lunch Program (NSLP)
- Low Income Home Energy Assistance Program (LIHEAP)
- Supplemental Security Income (SSI)

2. Maximum Household Income

Effective June 1, 2023 to May 31, 2024.

Household Size	Total yearly household income not more than
1	$36,450
2	$49,300
3	$62,150
4	$75,000
5	$87,850
6	$100,700
7	$113,550
8	$126,400

Each additional Person $12,850

[26] https://bestneighborhood.org/race-in-los-angeles-ca/
[27] https://housing.lacity.org/wp-content/uploads/2020/05/hud_tables.pdf?download=1

E.1.5 Evaluation Criterion E—Complementing On-Farm Irrigation Improvements (8 points)

This project does not complement on-farm irrigation improvements.

E.1.6 Evaluation Criterion F—Readiness to Proceed (8 points)

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: Do not repeat the more detailed technical project description provided in Section D.2.2.2 Application Content. This section should focus on a summary of the major tasks to be accomplished as part of the project.

This project is expected to need minimal time to start, and measure installations are anticipated to begin no later than the first three months after the contract with USBR is executed (with a high possibility of it launching within the first two months). This is because the delivery of the project measures will leverage existing programs that are already operating within the targeted areas at the present time. The measure prices proposed here have also been discussed with the program contractors, allowing SoCalGas to issue work contracts in an expedited fashion. The Project is divided into three tasks that include Project Kick-Off and Planning, Project Implementation, and Program Monitoring and Invoicing. The following are the planned tasks and subtasks for this project:

TASK 1 - Project Kick-Off and Planning

1.a. Conduct Kick-off Meeting with USBR

SoCalGas and LADWP personnel will meet with representatives from USBR to kick off the project and discuss project schedule, milestones, reporting, invoicing and all other aspects of the project performance.

1.b. Conduct Kick-off Meeting with Internal Stakeholders

SoCalGas and LADWP will confer with all internal stakeholders, including marketing team, Information Technology, program implementation team, and program contractors to outline roles and responsibilities for the project.

1.c. Create a Program Order Between SoCalGas and LADWP

SoCalGas and LADWP will enter into a Program Order under the Master Inter-Utility (umbrella) Agreement between the two utilities. A Program Order is analogous to a work order between the two utilities that specify the roles and responsibilities of the two parties, and the terms and conditions of the co-funding between the two utilities.

1.d. Negotiate and Execute Contract with Program Implementers/Contractors

On behalf of the Partners, SoCalGas will enter into formal negotiations with the contractors of the SoCalGas Programs to include the program measures listed in this proposal. Upon

successful negotiations, SoCalGas will execute these contracts, upon which the program contractors are ready to proceed. It is expected that the negotiations and issuance of the contracts to be a brief and straightforward process as SoCalGas has already entered into a master contract to implement the SoCalGas Programs with these contractors, so the additional measures proposed here will be add-ons their existing contracts. The prices of measures proposed in this application are also based on local market rates that have been previously discussed with the program contractors.

1.e. Create a Program Implementation Plan and Program Forms

The Partners will work together to create a Program Implementation Plan (PIP) that outlines the program design, rules, requirements, and all the other details necessary that govern program implementation. The program forms to document measure installations will also be created and finalized at this time.

1.f. Create Program Database for Tracking and Reporting

SoCalGas will create a program database to track, report and collect invoices related to program activities. The program contractors will use this database as the primary method of reporting program activities. SoCalGas will tailor this reporting database to meet the reporting and invoicing needs of both LADWP and the USBR.

1.g. Create Program Marketing and Outreach Materials

SoCalGas and LADWP will work together to create joint marketing and outreach materials to be used in the program. Such materials will include printed collaterals, electronic media, and social media campaigns and promotions.

1.h. Establish Quality Assurance Process

The Partners will jointly establish the quality assurance (QA) process to ensure that program installations meet the expectations of the program. The quality assurance will include various strategies including getting customer feedback as well as randomly-sampled inspection to ensure that installations meet the program's quality standards. All of the quality assurance standards for this proposed work will meet or exceed the existing QA standards for the SoCalGas Programs.

1.i. Provide Program Training for Program Contractors

Utilizing the PIP and Program Database, SoCalGas' staff will conduct a training session with program contractors to go over program expectations, rules, requirements, and quality assurance and answer any questions about the program. Future refresher training sessions will be conducted periodically to ensure that the contractors are continuously in compliance with all project requirements.

TASK 2 - Project Implementation

2.a. Conduct Program Marketing

The Partners will conduct program marketing to enroll multifamily property owners and operators into the program. The marketing will be a multi-pronged effort that will involve the staff at both utilities as well as contractors. The marketing and outreach efforts will include any combination of the following:

- Sending marketing materials to property owners and managers via mail, email or social media

- Telephone calls from the contractors
- Door-to-door canvassing
- Presentation at trade forums
- Leverage the utilities' account management channels with pre-existing relationships with major multifamily property owners and operators.

2.b. Conduct Measure Installations

The contractors will perform installations on a consistent basis throughout the 3-year duration of the program. While production quantities are expected to remain steady over time, some fluctuations can be expected, especially when there are requests from major partners and accounts. The Program Manager will monitor the volume of installations to smooth out any peaks or valleys in installation quantities by adjusting resources available, including shifting work from one contractor to another depending on performance.

2.c. Conduct Quarterly Review with Contractors

The Partners will conduct a quarterly review with the program contractors to ensure optimum performance and highest quality standards.

2.d. Conduct Annual Review with USBR

The Partners will conduct an annual project review USBR to provide updates, best practices, lessons learned, forecast, challenges, solutions, and enhancements. The frequency of this review with the USBR can be increased as necessary upon request from the USBR.

TASK 3 - Program Reporting and Invoicing

3.a. Submit Monthly Report

SoCalGas will provide the USBR with a monthly report that details the production volume and other narrative reports to detail the progress of the project. Any items that need the attention of the USBR will also be highlighted in this report

3.b. Submit Quarterly Invoice

SoCalGas will provide a quarterly invoice to the USBR with a detailed breakdown of program activities and charges. Detailed project data can also be provided to the USBR upon the request. The frequency of the invoices can be increased if needed.

3.c. Prepare and Submit Annual Report

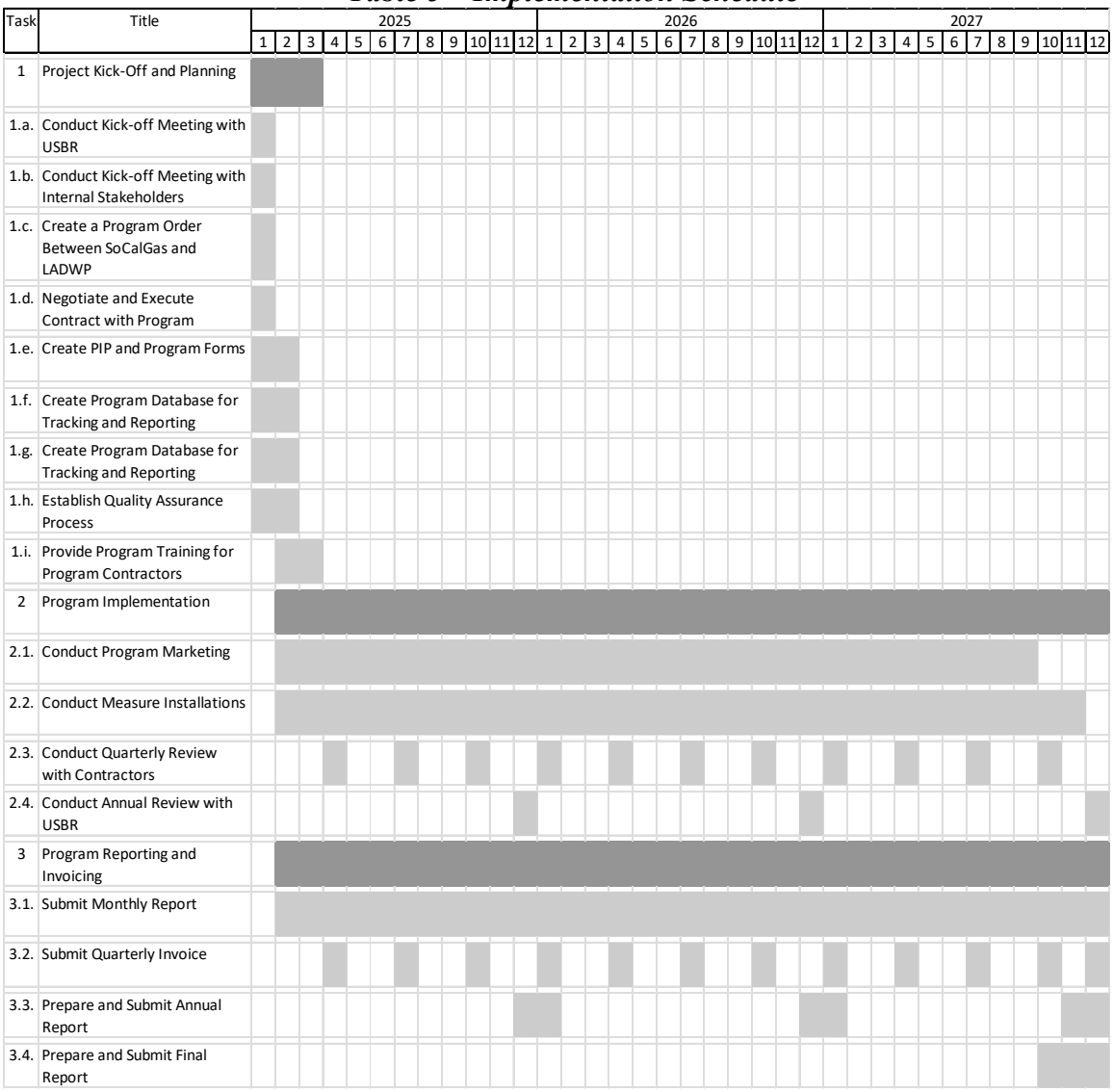
SoCalGas and LADWP will prepare and provide an annual report that summarizes program activities for the project year, including all major findings, lessons learned, program trends, forecast, Quality Assurance, and all other aspects of program metrics and Performance Measures that are of interest to the USBR.

3.d. Prepare and Submit Final Report

At the conclusion of the Program, the Partners will provide a final report to the USBR that provides a detailed breakdown of program activities and accomplishments. The Partners will work with the USBR to arrive at the format and content for this Final Report.

Table 5 shows the Implementation schedule for all tasks.

Table 5 – Implementation Schedule



•Describe any permits that will be required, along with the process for obtaining such permits. Identify and describe any engineering or design work performed specifically in support of the proposed project.

The Common Permits guidelines released by the Los Angeles Housing and Community Investment Department states that any home improvement projects will require a permit where the work regulated by the City's building code is valued at $500 or more, or when it affects the structural stability of a building or public safety, or is due to making a building conform to the requirements of the code for change of use or occupancy. Installations of toilets fall under the building code, so some installations of toilets with a project cost above $500 will require a building permit. Participating installers in the programs are required to follow all applicable laws, including pulling a permit, and they are required to obtain a permit, if necessary, prior to installation. Upon request of building officials or other authorities, the installers must furnish the permit for the project, and failure to do so will result in penalties and/or disciplinary actions.

Very little design or engineering is required with the installation of the proposed measures. The proposed measures involve off-the-shelf devices that can be retrofitted into existing buildings without the need for major revamp or re-design.

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

All work proposed in this project is funded by SoCalGas' and LADWP's ratepayers and administered under the auspices of the California Public Utilities Commission and the City of Angeles that act as regulators to the two utilities. The work performed must meet all rules and policies of the regulators in addition to all the applicable federal, state, regional and local laws and ordinances.

•Describe the current design status of the project.

There is very little design work required for this project, but it will require some planning and preparation work to add the proposed measures into the existing programs. Please refer to the Tasks and Subtasks section above for the discussion on the planning and preparation activities required for this project.

E.1.7 Evaluation Criterion G—Collaboration (5 points)

*Up to **5 points** may be awarded for projects that promote and encourage collaboration among parties in a way that helps increase the sustainability of the water supply.*

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?

This project is a collaborative effort between multiple parties to achieve shared goals between organizations. The partnership between SoCalGas and LADWP is the primary driver for the proposed work that leverages the strengths of each organization. Although SoCalGas does not currently provide water services, it operates large-scale customer-oriented programs that can deploy products and services very quickly to the targeted audience. LADWP has the funding and expertise in the water sector that allows both utilities to complement each other in the shared objective of providing the best service to their mutual customers and assisting the disadvantaged communities in the greater Los Angeles areas.

This project is also receiving full support from the Metropolitan Water District, the water supplier for LADWP and many other water agencies in Southern California. Metropolitan has also collaborated with LADWP and SoCalGas in the past to deploy water conservation measures to the shared customer bases quickly and efficiently. A letter of support from MWD has been included in this grant application.

Both SoCalGas and LADWP have also had a long history of working with affordable housing organizations to provide various efficiency and retrofit measures. Many regional and national affordable housing organizations have worked with SoCalGas and LADWP in the past and have been appreciative of the funding, support and expertise that the two utilities have provided to improve their housing stock over the years. Due to the increasing homelessness in the City, these organizations are pleased to be able to leverage any external funding to modernize their existing

housing stock so that more funding can be allotted to creating new affordable housing in the city. The Partners have reached out to some of these organizations, and they have expressed their support for SoCalGas and LADWP to pursue this grant funding. Those that have provided a letter support include the Retirement Housing Foundation (RHF), a prominent affordable housing provider in Southern California.

SoCalGas and LADWP will also partner with the City of Los Angeles Housing Department to coordinate and expedite construction permits that are needed to perform the installations at the participating multifamily properties. A letter of support from the Housing Department has been included in this grant application.

Lastly, both LADWP and SoCalGas will continue partnering with organizations such as the Alliance for Water Efficiency and California Water Efficiency Partnership to promote the project and its benefits in solving drought challenges and addressing program inequity in California. By working with the organizations, the Partners hope to inspire other organizations to work collaboratively to benefit the public.

•What is the significance of the collaboration/support?

This collaborative approach between a private utility (SoCalGas) and a public one (LADWP) has been groundbreaking and significant in scope where two utilities can essentially operate as a single entity that works for the benefit of their mutual customers. We are pleased that we will be able to extend this nationally-recognized partnership model to the proposed project that will help tackle the impact of the severe drought in southern California, while at the same time creating more jobs and housing for the segment of the population that needs it the most.

The relationship with and support received from the affordable housing organizations is also very meaningful as it will allow the project to be deployed quickly and received well. The readiness of these organizations to work with the Partners will ensure a seamless process to introduce the proposed measures into their existing housing stock as quickly as possible.

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

SoCalGas and LADWP plan to leverage their extensive marketing reach in coordination with MWD and other water conservation organizations to promote the proposed project. By pooling marketing and promotional resources, we are confident that we will be able to reach a broad audience that will encourage multifamily housing owners and operators to adopt water conservation as part of their long-term strategy. As the Partners have an existing relationship with many of the regional and national affordable housing organizations, the exposure to this work will encourage these organizations to seek resources to implement similar measures for their housing stock outside of the City of Los Angeles. This will add pressure to more stakeholders to find solutions to address water conservation in the affordable housing stock in general and could promote innovation through competition.

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

Since the project serves only residential customers, only the residential sector will derive direct benefits from the project. However, the reduced water losses will enable LADWP to maintain

more potable water in its system, and consequently will be able to serve all the customer sectors better by strengthening the water supply for every customer.

•Please attach any relevant supporting documents (e.g., letters of support or memorandum of understanding).

Letters of support are included in the Letters of Support and Participation section of this grant application.

E.1.8 Evaluation Criterion H—Nexus to Reclamation (4 points)

*Up to **4 points** may be awarded if the proposed project is connected to a Reclamation project or Reclamation activity. No points will be awarded for proposals without connection to a Reclamation project or Reclamation activity.*

•Describe the nexus between the proposed project and a Reclamation project or Reclamation activity. Please consider:
•Does the applicant have a water service, repayment, or operations and maintenance (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?
•Will the proposed work benefit a Reclamation project area or activity?
•Is the applicant a Tribe?

The Project's components of water use efficiency, water conservation, stormwater capture, and groundwater recharge may benefit a USBR project and activity, since USBR manages the Colorado River and its reservoirs to meet water and power delivery obligations. Specifically, the Project's water savings will allow LADWP to reduce imported water purchases from MWD, which may then influence demands for both Colorado River water (USBR's Boulder Canyon Project) and Sacramento-San Joaquin Delta water (USBR's Central Valley Project). In this way, the Project will also help abide by the Colorado River Basin Drought Contingency Plan since it requires western member states to reduce allocations on the Colorado River during periods of extended drought.

For context, LADWP purchases approximately 42 percent of its water in an average year from MWD. One of MWD's water sources is the Colorado River. The Colorado River Aqueduct (CRA) conveys water from the Colorado River to USBR's Lower Colorado Region, where USBR effectively serves as the Watermaster for the last 688 miles of the river within the United States. From 2005 to 2009, MWD obtained about 37 percent of its imported water supply (yearly average) from the Colorado River through its water delivery contract with the United States Secretary of the Interior. MWD's contract number under the Seven Party Agreement is Ilr-645.

The Project will be implemented at residential properties throughout LADWP's service area in Southern California, which is included within USBR's Lower Colorado Region. Neither SoCalGas nor LADWP is a tribe.

PERFORMANCE MEASURES

The Performance Measures to be tracked and reported in this project consist of the potable water savings in LADWP's water savings. To quantify the performance measures, LADWP and SoCalGas will perform Evaluation, Measurement and Verification (EM&V) toward the end of the project. The EM&V process will utilize actual meter data from the residential facilities that receive the measures, and the metered data will be supplemented by the field data and photographs collected pre- and post-installation. The performance measure process will be conducted according to the protocols of internationally accepted "International Performance Measurement and Verification Protocol" or IPMVP[28]. The full results of the performance measures will be included in the final report.

END OF 50-PAGE LIMIT

[28] https://evo-world.org/en/products-services-mainmenu-en/protocols/ipmvp

PROJECT BUDGET NARRATIVE

FUNDING PLAN AND LETTERS OF COMMITMENT

BUDGET PROPOSAL

The total funding for the 3-year project is $7,989,483 that is broken out as follows:

FUNDING SOURCES	Amount
Non-Federal Entities	
1. SoCalGas Ratepayer Energy Efficiency Funds	$ 819,178
2. LADWP Ratepayer Water Conservation Funds	$ 5,172,934
Non-Federal Subtotal	**$ 5,992,112**
REQUESTED RECLAMATION FUNDING	**$ 1,997,371**

The funding plan by year is as follows:

FUNDING SOURCE	YEAR 1 (01/01/25-12/31/25)	YEAR 2 (01/01/26-12/31/26)	YEAR 3 (01/01/27-12/31/27)	TOTAL
SoCalGas	$253,179	$320,245	$245,753	**$819,178**
LADWP	$1,598,773	$2,022,281	$1,551,880	**$5,172,934**
USBR	$617,317	$780,842	$599,211	**$1,997,371**
TOTAL	**$2,469,269**	**$3,123,369**	**$2,396,845**	**$7,989,483**

BUDGET NARRATIVE

A copy of Attachment SF-424C Construction has been included in the Attachment Form, and the summary is presented below:

BUDGET INFORMATION - Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case, you will be notified.

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	$ 724,243.00	$	$ 724,243.00
2. Land, structures, rights-of-way, appraisals, etc.	$	$	$
3. Relocation expenses and payments	$	$	$
4. Architectural and engineering fees	$	$	$
5. Other architectural and engineering fees	$	$	$
6. Project inspection fees	$	$	$
7. Site work	$	$	$
8. Demolition and removal	$	$	$
9. Construction	$ 7,265,240.00	$	$ 7,265,240.00
10. Equipment	$	$	$
11. Miscellaneous	$	$	$
12. SUBTOTAL *(sum of lines 1-11)*	$ 7,989,483.00	$	$ 7,989,483.00
13. Contingencies	$	$	$
14. SUBTOTAL	$ 7,989,483.00	$	$ 7,989,483.00
15. Project (program) income	$	$	$
16. TOTAL PROJECT COSTS *(subtract #15 from #14)*	$ 7,989,483.00	$	$ 7,989,483.00
FEDERAL FUNDING			
17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.	Enter eligible costs from line 16c Multiply X 25 %		$ 1,997,370.75

The project cost is primarily made up of three categories – labor, fringe benefits, and construction costs. The first is the labor for SoCalGas' personnel that will manage and implement the project on behalf of the Partners. The personnel cost consists of the current salary (average rate based on position type and blended to include increases in the future years) and performance incentive. The second is the fringe benefits associated with the SoCalGas personnel, and this cost includes the Pension and Benefits (Payroll Tax, Pension Medical, Dental, Vision, Transportation, Wellness, Workers Comp and Payroll Overhead) that is calculated at an average of 55.7% of the loaded personnel rate. The labor and fringe benefits costs make up the administrative expenses in Form SF-424C.

The third category is the construction costs associated with measure delivery. All measures will be installed by SoCalGas' Program Contractors in conjunction with the existing programs and services that are already being implemented by SoCalGas. Local subcontractors may also be used in the performance of the work. The cold water measures, including water leak detection, premium high efficiency toilets, smart irrigation controllers, and turf replacement are new measures that do not currently exist in the programs. The rest of measures that are offered presently, such as low-flow showerheads and aerators, will be included in this project provided that they are: a) installed after the start of this project and delivered in concert with the new cold-water measures; b) the project locations meet all the criteria for the project, including the low-income or disadvantaged community status.

The program contractors for customer programs have been previously selected by SoCalGas through a competitive award process. To qualify for participation in this project, the contractors will re-bid into the project and the measure prices will be at or lower than the prices listed below. The cost per unit has been obtained from historical pricing of SoCalGas's existing contracts supplemented by vendor quotes based on similar work completed for other businesses or organizations within Southern California. The following table presents the 3-year costs and the breakdown of project costs for SoCalGas, LADWP and USBR. Overall, SoCalGas will be responsible for approximately 10% of the project costs, LADWP 65% and USBR 25%.

Expenditure Type	3-Year Quantity	Cost per unit	Total Cost	LADWP Cost Share	LADWP Cost
CONSTRUCTION					
Showerheads, 1.5 gpm	20,500	$32	$656,000	25%	$164,000
Bathroom Faucet Aerators, 1.0 gpm	24,600	$14	$344,400	25%	$86,100
Kitchen Faucet Aerators, 1.5 gpm	21,800	$14	$305,200	25%	$76,300
Thermostatic Showervalves + LF Showerheads	1,880	$98	$184,240	25%	$46,060
Water Loss Detection	7,920	$380	$3,009,600	75%	$2,257,200
Premium High Efficiency Toilets	1,900	$430	$817,000	75%	$612,750
Irrigation Controllers	2,080	$360	$748,800	75%	$561,600
Turf replacement (sq.ft.)	150,000	$8	$1,200,000	75%	$900,000
Construction Subtotal			**$7,265,240**		**$4,704,010**
ADMINISTRATIVE					
Labor			$464,258		$300,592
Fringe Benefits			$259,985		$168,332
Administrative Subtotal			**$724,243**		**$468,924**
TOTAL			**$7,989,483**	**65%**	**$5,172,934**

Expenditure Type	SoCalGas Cost Share	SoCalGas Cost	USBR Cost Share	USBR Cost
CONSTRUCTION				
Showerheads, 1.5 gpm	50%	$328,000	25%	$164,000
Bathroom Faucet Aerators, 1.0 gpm	50%	$172,200	25%	$86,100
Kitchen Faucet Aerators, 1.5 gpm	50%	$152,600	25%	$76,300
Thermostatic Showervalves + LF Showerheads	50%	$92,120	25%	$46,060
Water Loss Detection			25%	$752,400
Premium High Efficiency Toilets			25%	$204,250
Irrigation Controllers			25%	$187,200
Turf replacement (sq.ft.)			25%	$300,000
Construction Subtotal		**$744,920**		**$1,816,310**
ADMINISTRATIVE				
Labor		$47,601		$116,065
Fringe Benefits		$26,657		$64,996
Administrative Subtotal		**$74,258**		**$181,061**
TOTAL	**10%**	**$819,178**	**25%**	**$1,997,371**

CONSTRUCTION COSTS

Construction costs will be billed on a per unit installed basis. Upon confirmed installation of each device, each party, SoCalGas, LADWP and USBR will incur a fixed charge associated for the installation. The following table presents the Unit Cost for each funding entity. The USBR's per unit cost share will be fixed and billed at the rate below for the entire three years of the project. The cost split proposed here among the USBR, SoCalGas and LADWP are calculated based on the level of attribution desired by SoCalGas and LADWP to demonstrate adequate "influence" to their respective regulating entities. In the administration of ratepayer-funded energy and water efficiency programs, the amount of funding or co-funding made by the program administrator will often decide how much savings "credit" will be assigned to it during the Evaluation, Measurement and Verification (EM&V) process.

Expenditure Type	3-Year Quantity	Cost per unit	LADWP Cost Share	LADWP Cost / Unit
Showerheads, 1.5 gpm	20,500	$32	25%	$ 8.00
Bathroom Faucet Aerators, 1.0 gpm	24,600	$14	25%	$ 3.50
Kitchen Faucet Aerators, 1.5 gpm	21,800	$14	25%	$ 3.50
Thermostatic Showervalves + LF Showerheads	1,880	$98	25%	$ 24.50
Water Loss Detection	9,950	$380	75%	$ 285.00
Premium High Efficiency Toilets	1,900	$430	75%	$ 322.50
Irrigation Controllers	2,080	$360	75%	$ 270.00
Turf replacement (sq.ft.)	150,000	$8	75%	$ 6.00

Expenditure Type	SoCalGas Cost Share	SoCalGas Cost / Unit	USBR Cost Share	USBR Cost / Unit
Showerheads, 1.5 gpm	50%	$ 16.00	25%	$ 8.00
Bathroom Faucet Aerators, 1.0 gpm	50%	$ 7.00	25%	$ 3.50
Kitchen Faucet Aerators, 1.5 gpm	50%	$ 7.00	25%	$ 3.50
Thermostatic Showervalves + LF Showerheads	50%	$ 49.00	25%	$ 24.50
Water Loss Detection			25%	$ 95.00
Premium High Efficiency Toilets			25%	$ 107.50
Irrigation Controllers			25%	$ 90.00
Turf replacement (sq.ft.)			25%	$ 2.00

ADMINISTRATIVE COSTS

The following table presents the estimated administrative costs that are comprised of labor and fringe benefits. The administrative costs are estimated at 10% of the construction costs.

Position Title	Time (Hrs)	Rate (Hr or Salary)	Total Labor	Fringe Benefits	Total Administrative Cost	Loaded Rate
Program Advisor	4120	$ 80	$ 331,335	$ 185,547	$ 516,882	$ 125.46
Sr. Project Manager	920	$ 99	$ 90,817	$ 50,857	$ 141,674	$ 153.99
Manager	360	$ 117	$ 42,107	$ 23,580	$ 65,686	$ 182.46
		Total	**$464,258**	**$259,985**	**$724,243**	

The following table presents the breakdown of the administrative cost share by co-funder.

Expenditure Type	Total Cost	LADWP Cost Share	LADWP Cost	SoCalGas Cost Share	SoCalGas Cost	USBR Cost Share	USBR Cost
ADMINISTRATIVE							
Labor	$464,258		$300,592		$47,601		$116,065
Fringe Benefits	$259,985		$168,332		$26,657		$64,996
Administrative Subtotal	**$724,243**	**65%**	**$468,924**	**10%**	**$74,258**	**25%**	**$181,061**
TOTAL	**$7,989,483**	**65%**	**$5,172,934**	**10%**	**$819,178**	**25%**	**$1,997,371**

Instead of charging LADWP administrative cost on a per hour basis, SoCalGas has a standard practice of charging a fee equivalent to the percentage of construction costs for each installed measure, in this particular project, 10% of the construction costs. This practice provides transparency in the amount of administrative fee charged and limits LADWP's risk as the administrative costs is capped based on the amount of the confirmed installations. As an example, for each 1.5 gpm showerhead installed, SoCalGas will invoice LADWP in the amount of $8 plus 10% administrative fee that is equivalent to $0.80 for a total charge of $8.80. If this practice is desirable for USBR, SoCalGas is also open to charging the administrative costs as a percentage fee (10%) of the installed amount to USBR instead of on an hourly basis.

PRE-AWARD COSTS

This project does not have any proposed pre-award costs.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

D.2.2.5. Environmental and Cultural Resources Compliance

Please answer the questions from Section H.1. Environmental and Cultural Resource Considerations in this section.

H.1. Environmental and Cultural Resource Considerations

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants should consider the following list of questions focusing on the NEPA, ESA, and NHPA requirements. Please answer the following questions to the best of your knowledge. If any question is not applicable to the project, please explain why. The application should include the answers to:

• 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.

The proposed project will not impact the surrounding environment and will be limited to the footprint of the residential facility (both exterior and interior), which is not a typical animal habitat. During the turf replacement, some earth may be disturbed while the California-friendly landscaping is put in and the existing turf grass is removed. The impact of such disturbance on the environment and animal habitat is minimal.

• 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?

We are not aware of any species listed as Federal threatened or endangered species in the project area as the project will be conducted in well-established residential areas.

• 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 proposed project may have.

There are not.

• When was the water delivery system constructed?

It wasn't until 1860 that the city of Los Angeles' Water Company completed its first water system. On Feb. 3, 1902, the City of Los Angeles formally took ownership of the first Los Angeles municipal water works 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.*

It will not.

• *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.*

There are no buildings, structures or features eligible that we are aware of at this time.

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

There are no known archeological sites that we are aware of as the Project will be implemented in applicable multifamily and single family residences.

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

The Project will not have a disproportionately high and adverse effect on low income or minority populations, in fact the Project will provide benefits to these populations.

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

No, it will not.

• *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, it will not. The sustainable landscapes will promote the installation of plant species that are native to California. Additionally, the sustainable landscape's use of mulch may prevent the growth of weeds.

REQUIRED PERMITS OR APPROVALS / OVERLAP OR DUPLICATION

D.2.2.5 Required Permits or Approvals

You should state in the application whether any permits or approvals are necessary and explain the plan for obtaining such permits or approvals.

Note: Improvements to Federal facilities that are implemented through any project awarded funding through this NOFO must comply with additional requirements. Reclamation may also require additional reviews and approvals prior to award to ensure that any necessary easements, land use authorizations, or special permits can be approved consistent with the requirements of 43 CFR Section 429 and that the development will not impact or impair project operations or efficiency.

The only required permit is a residential permit for construction work valued at over $500 at a City of Los Angeles home, which will be obtained from the local permitting office or online prior to the installation. The only measure proposed that falls under the City of L.A. building code is premium high efficiency toilets and only when the project cost exceeds $500. The granting of this permit is routine and usually done instantaneously at the time of application (online or in person). The Partners will coordinate the Los Angeles Housing Department to streamline the process of applying for and receiving permits.

OVERLAP OR DUPLICATION OF EFFORT STATEMENT

D.2.2.6 Overlap or Duplication of Effort Statement

Applicants should provide a statement that addresses if there is any overlap between the proposed project and any other active or anticipated proposals or projects in terms of activities, costs, or commitment of key personnel. If any overlap exists, applicants must provide a description of the overlap in their application for review.

Applicants should also state if the proposal submitted for consideration under this program does or does not in any way duplicate any proposal or project that has been or will be submitted for funding consideration to any other potential funding source—whether it be Federal or non-Federal. If such a circumstance exists, applicants must detail when the other duplicative proposal(s) were submitted, to whom (Agency name and Financial Assistance Program), and when funding decisions are expected to be announced. If at any time a proposal is awarded funds that would be duplicative of the funding requested from Reclamation, applicants must notify the NOFO point of contact or the Program Coordinator immediately.

This proposal is not overlapping with any other proposal to be submitted by the Partners to other Federal or non-Federal entities. However, the proposed work is part of SoCalGas and LADWP's partnership programs that will be launched contingent upon the award of this application. The SoCalGas programs are currently operational and are installing some of the low-cost measures proposed here, such as low-flow showerheads, aerators and thermostatic shower valves. This grant application, if successful, will make the upcoming program partnership much more impactful for the communities that it will serve by adding more measures that will save water and reduce utility bills. The additional funding requested here for these measures, if granted, will allow the Partners to install the measures in more homes than what the current program budget will allow for without the federal award.

CONFLICT OF INTEREST DISCLOSURE

D.2.2.7 Conflict of Interest Disclosure Statement

Per 2 CFR §1402.112, "Financial Assistance Interior Regulation" applicants should state in the application if any actual or potential conflict of interest exists at the time of submission. Submission of a conflict-of-interest disclosure or certification statement is mandatory prior to issue of an award.

D.2.2.7.1 Applicability

This section intends to ensure that non-Federal entities and their employees take appropriate steps to avoid conflicts of interest in their responsibilities under or with respect to Federal financial assistance agreements.

In the procurement of supplies, equipment, construction, and services by recipients and by sub recipients, the conflict-of-interest provisions in 2 CFR§200.318 apply.

D.2.2.7.2 Notification

Non-Federal entities, including applicants for financial assistance awards, must disclose in writing any conflict of interest to the DOI awarding agency or pass-through entity in accordance with 2 CFR §200.112.

Recipients must establish internal controls that include, at a minimum, procedures to identify, disclose, and mitigate or eliminate identified conflicts of interest. The successful applicant is responsible for notifying the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by sub recipients.

D.2.2.7.3 Restrictions on Lobbying

Non-Federal entities are strictly prohibited from using funds under a grant or cooperative agreement for lobbying activities and must provide the required certifications and disclosures pursuant to 43 CFR §18 and 31 USC §1352.

D.2.2.7.4 Review Procedures

The Financial Assistance Officer will examine each conflict-of-interest disclosure on the basis of its particular facts and the nature of the proposed grant or cooperative agreement and will determine whether a significant potential conflict exists and, if it does, develop an appropriate means for resolving it. Enforcement. Failure to resolve conflicts of interest in a manner that satisfies the government may be cause for termination of the award. Failure to make required disclosures may result in any of the remedies described in 2 CFR §200.339, Remedies for noncompliance, including suspension or debarment (see also 2 CFR §180).

D.2.2.8. Conflict of Interest Disclosure Statement

Conflict of Interest Disclosure Per the Financial Assistance Interior Regulation (FAIR), 2 CFR

§1402.112, you must state in your application if any actual or potential conflict of interest exists at the time of submission.

We are not aware of any actual or potential conflict of interest at the time of this grant applications submission.

Applicability

This section intends to ensure that non-Federal entities and their employees take appropriate steps to avoid conflicts of interest in their responsibilities under or with respect to Federal financial assistance agreements.

In the procurement of supplies, equipment, construction, and services by recipients and by sub recipients, the conflict of interest provisions in 2 CFR §200.318 apply.

Notification

Non-Federal entities, including applicants for financial assistance awards, must disclose in writing any conflict of interest to the DOI awarding agency or pass- through entity in accordance with 2 CFR §200.112.

Recipients must establish internal controls that include, at a minimum, procedures to identify, disclose, and mitigate or eliminate identified conflicts of interest. The successful applicant is responsible for notifying the Financial Assistance Officer in writing of any conflicts of interest that may arise during the life of the award, including those that have been reported by sub recipients.

Restrictions on Lobbying

Non-Federal entities are strictly prohibited from using funds under a grant or cooperative agreement for lobbying activities and must provide the required certifications and disclosures pursuant to 43 CFR §18 and 31 USC §1352.

Review Procedures

The Financial Assistance Officer will examine each conflict of interest disclosure on the basis of its particular facts and the nature of the proposed grant or cooperative agreement, and will determine whether a significant potential conflict exists and, if it does, develop an appropriate means for resolving it. Enforcement. Failure to resolve conflicts of interest in a manner that satisfies the government may be cause for termination of the award. Failure to make required disclosures may result in any of the remedies described in 2 CFR §200.339, Remedies for noncompliance, including suspension or debarment (see also 2 CFR §180).

SoCalGas and LADWP will comply with all the Terms in the Applicability, Notification, Restrictions on Lobbying and Review Procedures Sections.

UNIFORM AUDIT REPORTING STATEMENT

D.2.2.8 Uniform Audit Reporting Statement

All U.S. states, local governments, federally recognized Indian Tribal governments, and nonprofit organizations expending $750,000 USD 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's Internet Data Entry System. U.S. state, local government, federally recognized Indian Tribal governments, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the Federal Audit Clearinghouse website.

D.2.2.9. 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 your organization's fiscal year must submit a Single Audit report for that year through the Federal AuditClearinghouse's Internet Data Entry System in accordance with 2 CFR §200 subpart F.

U.S. state, local government, federally recognized Indian Tribal governments, and non-profit applicants must state if your organization was or was not required to submit a Single Audit report for the most recently closed fiscal year. If your organization was required to submit a Single Audit report for the most recently closed fiscal year, provide the Employer Identification Number (EIN) associated with that report and state if it is available through the FederalAudit Clearinghouse website.

SoCalGas will comply with the Uniform Audit Reporting Statement. SoCalGas' EIN is 95-1240705.

CERTIFICATION REGARDING LOBBYING

D.2.2.9 Certification Regarding Lobbying

Applicants requesting more than $100,000 in Federal funding must certify to the statements in 43 CFR §18, A ppendix A. If this application requests more than $100,000 in Federal funds, the authorized official's signature on the appropriate SF-424 form also represents the applicant's certification of the statements in 43 CFR § 18, Appendix A.

D.2.2.10 SF-LLL: Disclosure of Lobbying Activities (if applicable)

If applicable, a fully completed and signed SF-LLL: Disclosure of Lobbying Activities form is required if the applicant has made or agreed to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. This form cannot be submitted by a contractor or other entity on behalf of an applicant.

A copy of the GG_LobbyingForm and SFLLL-V1.1 for SoCalGas has been included in this grant application.

LETTERS OF SUPPORT FOR THE PROJECT AND LETTERS OF PARTICIPATION

D.2.2.11 Letters of Support

You should include any letters from interested stakeholders supporting the proposed project. To ensure your proposal is accurately reviewed, please attach all letters of support as an appendix. Letters of support received after the application deadline for this NOFO will not be considered in evaluating your proposed project. These letters do not count within the 125 page maximum.

Letters of support from the following organizations have been included:

Los Angeles Assembly Member, Fifty-Fourth District, Mr. Miguel Santiago

Los Angeles Assembly Member, Sixty-First District, Ms. Tina S. McKinnor

Metropolitan Water District

Retirement Housing Foundation

D.2.2.12 Letter of Partnership (Category B Applicants)

Category B applicants should submit a Letter of Partnership from the Category A partner, stating that they are acting in partnership with the applicant and agree to the submittal and content of the application (see Section C.1 Eligible Applicants). However, if the project is selected, a Letter of Partnership must be received prior to award.

A copy of the Master Inter-Utility Agreement between SoCalGas and LADWP has also been included in this section as proof that the Partners are able to conduct financial transactions with each other for the period of 2022-25. The two utilities have had this MIUA since 2012, and the Partners intend to renew it to cover the period of 2026 and beyond.

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0054
(916) 319-2054
FAX (916) 319-2154

DISTRICT OFFICE
320 WEST 4TH STREET, SUITE 1050
LOS ANGELES, CA 90013
(213) 620-4646
FAX (213) 620-6319

E-MAIL
Assemblymember.Santiago@assembly.ca.gov

Assembly
California Legislature

MIGUEL SANTIAGO
ASSISTANT MAJORITY LEADER
ASSEMBLYMEMBER, FIFTY-FOURTH DISTRICT

COMMITTEES
ARTS, ENTERTAINMENT, SPORTS, AND TOURISM
HEALTH
UTILITIES AND ENERGY

SELECT COMMITTEE
CHAIR: LOS ANGELES COUNTY HOMELESSNESS

February 20, 2024

U.S Department of the Interior
Bureau of Reclamation
Financial Assistance Operations
P.O. Box 25007, MS 84-27133
Denver, CO 80225

RE: Support of the Southern California Gas Company's and the Los Angeles Department of Water and Power's Grant Application to the WaterSMART Water and Energy Efficiency Grant Program

Dear Bureau of Reclamation:

I write you today in support of the grant application submitted by the Southern California Gas Company (SoCal Gas) and the Los Angeles Department of Water and Power (LADWP) for the Bureau of Reclamation's WaterSMART Water and Energy Efficiency Grant for Fiscal Year 2024 (Grant Opportunity).

SoCal Gas and LADWP are applying for grant funding to supplement a water and energy efficiency direct install program (Program) for participating residential sectors in the City of Los Angeles (City). The Program will install high-efficiency devices at no cost to participating residents, which will result in significant water and gas savings, as well as reduce utility bill costs for residents.

We believe SoCal Gas and LADWP have the capability and experience to fully meet the goals of this Grant Opportunity. SoCalGas and LADWP have had a long history of success and have formed a partnership to deliver energy and water efficiency solutions to their Los Angeles customers that receive services from both utilities. This partnership began in 2012 and has provided benefits to more than 500,000 households.

If awarded, the Program will utilize grant funding to support the installation of indoor and outdoor water and gas efficient devices in eligible multifamily and single-family residential housing units located within the City, including disadvantaged and low-income communities. These measures will include premium high-efficiency toilets, weather-based irrigation controllers, turf replacement, thermostatic shower valves and tub spouts, water use monitoring devices, and low-flow showerheads and aerators. The Program is expected to provide these

retrofits to approximately 24,000 households over the next three years which would save 890 acre-feet of water a year, enough for 10,680 residents in Los Angeles.

Thank you for considering the SoCalGas and LADWP Program application. We strongly support this effort to make the City of Los Angeles more resilient in the future.

Sincerely,

Miguel Santiago

MIGUEL SANTIAGO
Assembly Member, 54th District

STATE CAPITOL
P.O. BOX 942849
SACRAMENTO, CA 94249-0061
(916) 319-2061
FAX (916) 319-2161

Assembly
California Legislature

TINA S. McKINNOR
ASSEMBLYMEMBER, SIXTY-FIRST DISTRICT

DISTRICT OFFICE
ONE W. MANCHESTER BOULEVARD, SUITE 601
INGLEWOOD, CA 90301
(310) 412-6400
FAX (310) 412-6354

February 21, 2024

U.S Department of the Interior
Bureau of Reclamation
Financial Assistance Operations
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Subject: Support of the Southern California Gas Company's and the Los Angeles Department of Water and Power's Grant Application to the WaterSMART Water and Energy Efficiency Grant Program

Dear Bureau of Reclamation:

I am writing to express my strong support of the grant application submitted by the Southern California Gas Company (SoCal Gas) and the Los Angeles Department of Water and Power (LADWP) for the Bureau of Reclamation's WaterSMART Water and Energy Efficiency Grant for Fiscal Year 2024 (Grant Opportunity). SoCal Gas and LADWP are applying for grant funding to supplement a water and energy efficiency direct install program (Program) for participating residential sectors in the City of Los Angeles (City). The Program will install high-efficiency devices at no cost to participating residents, which will result in significant water and gas savings, as well as reduce utility bill costs for residents.

SoCal Gas and LADWP have the capability and experience to fully meet the goals of this Grant Opportunity. SoCalGas and LADWP have had a long history of success and have formed a partnership to deliver energy and water efficiency solutions to their Los Angeles customers that receive services from both utilities. This partnership began in 2012 and has provided benefits to more than 500,000 households.

If awarded, the Program will utilize grant funding to support the installation of indoor and outdoor water and gas efficient devices in eligible multifamily and single-family residential housing units located within the City, including disadvantaged and low-income communities. These measures will include premium high-efficiency toilets, weather-based irrigation

controllers, turf replacement, thermostatic shower valves and tub spouts, water use monitoring devices, and low-flow showerheads and aerators. The Program is expected to provide these retrofits to approximately 24,000 households over the next three years which would save 890 acre-feet of water a year, enough for 10,680 residents in Los Angeles.

Thank you for your attention to this matter.

Sincerely,

TINA McKINNOR

Assemblymember

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Office of the General Manager

February 20, 2024

Ms. Christina Munoz
U.S Department of the Interior
Bureau of Reclamation
Financial Assistance Operations
PO BOX 25007, MS 84-27133
Denver, CO 80225

Dear Ms. Munoz:

Southern California Gas Company's and the Los Angeles Department of Water and Power's Grant Application to the WaterSMART Water and Energy Efficiency Grant Program

The Metropolitan Water District of Southern California (Metropolitan) wishes to express support for Southern California Gas Company's (SoCal Gas) and the Los Angeles Department of Water and Power's (LADWP) joint application to the Bureau of Reclamation's (USBR) Water and Energy Efficiency Grant (WEEG) for Fiscal Year 2024. The grant would be used to support water and energy efficiency direct installation for residential sectors in the City of Los Angeles in partnership with the Los Angeles Department of Water and Power (LADWP).

Metropolitan, in partnership with local water agencies and energy utilities, supports investment in drought-resilient programs and resources to develop and manage more sustainable water supplies for millions of Southern California businesses and residents. The unprecedented severity of California's recent drought, the long-term shortage on the Colorado River, and the projected impacts of severe climate change underscore the need for continued diversification of Southern California's water resource portfolio.

SoCalGas and LADWP have had a long history of success and have formed a partnership to deliver energy and water efficiency solutions to their Los Angeles customers that receive services from both utilities. Together, they have the capability and experience to fully meet the goals of this grant opportunity. This partnership began in 2012 and has provided benefits to more than 500,000 households.

If awarded, the Program will utilize grant funding to support the installation of water and gas efficient devices in applicable housing located within the city, including disadvantaged and low-income communities. These measures will include premium-efficiency toilets, weather-based irrigation controllers, turf replacement, thermostatic shower valves and bathtubs, smart water loss monitoring devices, and high-efficiency showerheads and aerators. Overall, the Program is expected to provide retrofits to more than 24,000 households within the overlapping territories of LADWP and SoCalGas.

Metropolitan supports SoCal Gas's application for USBR 2024 WEEG funding for the LADWP Direct Install program, which will continue to help communities in Los Angeles become more resilient, and support supply reliability across the region for future generations in a sustainable and cost-effective manner. Please contact Mr. Gary Tilkian at (213) 217-6088 or via e-mail at gtilkian@mwdh2o.com if you have any questions.

Sincerely,

Brandon Goshi
Acting Manager, Water Resource Management Group

EG: vsm

Foundation Property Management, Inc.

February 15, 2024

U.S Department of the Interior
Bureau of Reclamation
Financial Assistance Operations
P.O. Box 25007, MS 84-27133
Denver, CO 80225

Subject: Support of the Southern California Gas Company's and the Los Angeles Department of Water and Power's Grant Application to the WaterSMART Water and Energy Efficiency Grant Program

Dear Bureau of Reclamation,

As the Vice President of Operations for Foundation Property Management, Inc., I am is writing this letter in support of the WaterSMART Water and Energy Efficiency Grant for Fiscal Year 2024 grant application submitted by the Southern California Gas Company (SoCal Gas) and the Los Angeles Department of Water and Power (LADWP). SoCal Gas and LADWP are applying for grant funding to supplement a water and energy efficiency direct install program (Program) for participating residential sectors in the City of Los Angeles (City). The Program will install water-efficient equipment at no cost to participating residents, which will result in significant water and gas savings, as well as reduce utility bill costs for residents.

We believe SoCal Gas and LADWP have the capability and experience to fully meet the goals of this grant opportunity. SoCalGas and LADWP have had a long history of success and have formed a partnership to deliver energy and water efficiency solutions to their Los Angeles customers that receive services from both utilities. This partnership began in 2012 and has provided benefits to more than 500,000 households; we have first-hand experience of their ability to deliver results.

If awarded, the Program will utilize grant funding to support the installation of water and gas efficient devices in applicable housing located within the City, including disadvantaged and low-income communities. These measures will include premium-efficiency toilets, weather-based irrigation controllers, turf replacement, thermostatic shower valves and bathtubs, smart water loss monitoring devices, leak detection devices, and low-flow showerheads and aerators. Overall, the Program is expected to provide retrofits to more than 24,000 households within the overlapping territories of LADWP and SoCalGas.

Foundation Property Management, Inc.

Thank you for considering the SoCalGas and LADWP application. We strongly support this effort to make the communities in Los Angeles more resilient in the face of the drought.

Sincerely,

Yuri A. Escandon
Vice President of Operations
Foundation Property Management, Inc.

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