CALIFORNIA FRIENDLY®
TURF REPLACEMENT INCENTIVE PROGRAM
Phase 2

WaterSMART: Water and Energy Efficiency Grants for FY 2014
U.S. Department of the Interior
Bureau of Reclamation
Notice of Funding Opportunity
No. R14AS00001

The Metropolitan Water District of Southern California
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Los Angeles, CA 90012

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January 21, 2014

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EXECUTIVE SUMMARY

The executive summary should include:

- **The date, applicant name, city, county, and state.**

January 21, 2014

The Metropolitan Water District of Southern California
Los Angeles, Los Angeles County, California

- **A one paragraph project summary that specifies the work proposed, including how project funds will be used to accomplish specific project activities and briefly identifies how the proposed project contributes to accomplishing the goals of this FOA (see Section III.B, "Eligible Projects").**

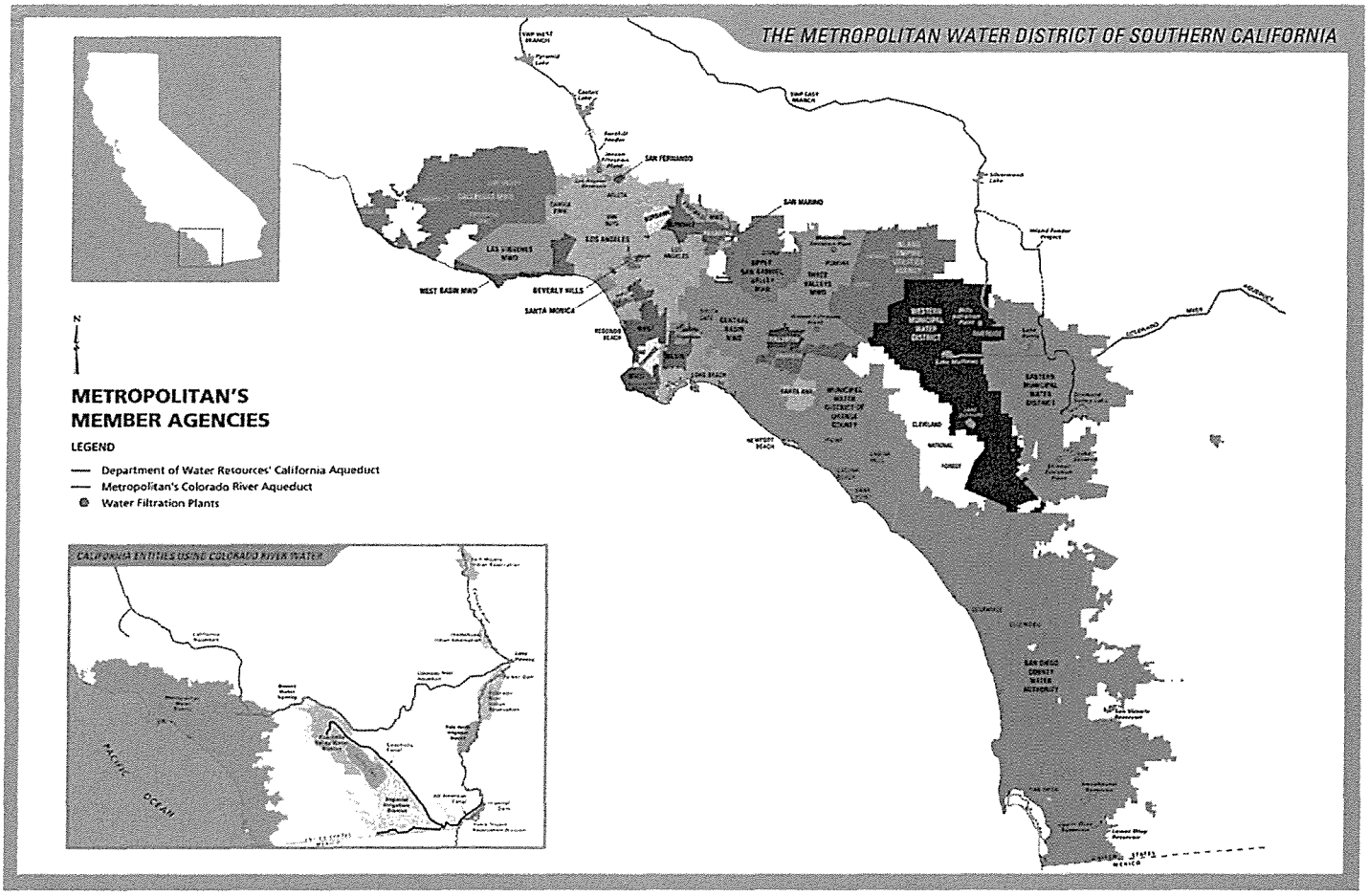
The California Friendly Turf Replacement Incentive Program – Phase 2 will provide funding to increase the availability of turf replacement programs within Metropolitan's service area over the next two years. Approximately $1.3 million in incentives will be offered through programs implemented by Metropolitan and participating member and retail agencies. Program funding will provide a base incentive up to $1.00 per square foot for residential and commercial sites (up to $0.23 per square foot from Reclamation matched with up to $0.77 per square foot from Metropolitan, member agencies, and other non-federal sources). Actual incentives may be higher depending on the local water agency's contribution. In Phase 1, approximately 2,700,000 square feet of turfgrass were converted to California Friendly landscapes saving 5,666 acre-feet (AF) of imported water. In Phase 2, Metropolitan, its member and retail agencies, and Reclamation will continue their successful collaboration to promote water efficient landscapes. Over a ten year period, the Phase 2 Program will conserve over 1,800 acre-feet of water, enough to serve over 360 homes. It will also save up to 4.9 million kWh by increasing energy efficiency in water management. The Phase 2 Program addresses several objectives of the WaterSMART grant including: (1) conserve and use water more efficiently; (2) improve energy efficiency; and (3) help prevent any water-related related crisis or conflict.

- **State the length of time and estimated completion date for the project.**

The California Friendly® Turf Replacement Incentive Program – Phase 2 will be completed over a two-year period. The project is a continuation of an existing program so implementation will begin immediately upon notice to proceed. The estimated completion date is September 30, 2016.

BACKGROUND DATA

Provide a map of the area showing the geographic location (include the State, county, and direction from nearest town).



Water Supply Sources, Current Uses, and Projected Demand

As applicable, describe the source of water supply, the water rights involved, current water uses (i.e., agricultural, municipal, domestic, or industrial), the number of water users served, and the current and projected water demand. Also, identify potential shortfalls in water supply. If water is primarily used for irrigation, describe major crops and total acres served.

The Metropolitan Water District of Southern California is a public agency established in 1928 by the state legislature to develop, store, and distribute water for domestic and municipal purposes. The mission of Metropolitan is to provide its service area with adequate and reliable supplies of high-quality water that meet present and future needs in an environmentally and economically responsible way. Metropolitan is governed by a 37-member board of directors, representing 26 member public agencies that serve approximately 18 million people. Metropolitan's service area encompasses 5,200 square miles within six counties: Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura.

Metropolitan is the regional water wholesaler for imported water. Over the past five years, imported supplies from the Colorado River and the Bay-Delta averaged 1,850,000 AF per year. Metropolitan's basic apportionment from the Colorado River is 550,000 AF per year. Metropolitan has a contractual right of up to 1,911,500 AF from the State Water Project. Metropolitan participates in the development of local water resources, groundwater, and recycled water to maintain regional supply reliability. Metropolitan also has long-term water management programs, including conservation and transfers that extend the region's limited local supplies.

Water uses are comprised of retail municipal and industrial (M&I) (96%), retail agriculture (2%), and groundwater replenishment (2%). Annual demand for the region, net of conservation, is expected to increase from an estimated 4,100,000 AF per year in 2010 to 4,600,000 AF per year by 2020.

Conservation is essential to providing reliable water supplies to meet future demand within this region. Over the past two decades, Metropolitan has invested about $322 million in conservation activities, saving over 1,720,000 AF. Despite this progress, the region still faces significant water supply challenges in the future. The Upper Colorado River Basin is recovering from a protracted multi-year drought which began in October 1999. Invasive species, water diversions, and wastewater discharges have contributed to the decline of the Bay-Delta, resulting in litigation and pumping restrictions that have altered Metropolitan's water supplies. Metropolitan's 2010 Integrated Water Resources Plan identifies the need for an additional 1,200,000 AF of new annual supply to meet dry year demands in 2020.[1] Conservation and recycled water are targeted to provide 580,000 AF, or nearly half of this supply.

[1] Metropolitan Water District of Southern California. Integrated Water Resources Plan Update. October 2010

Water Delivery System Overview

In addition, describe the applicant's water delivery system as appropriate. For agricultural systems, please include the miles of canals, miles of laterals, and existing irrigation improvements (i.e., type, miles, and acres). For municipal systems, please include the number of connections and/or number of water users served and any other relevant information describing the system.

Metropolitan and its 26 member agencies serve a population of approximately 18 million within a 5,200 square mile service area. Metropolitan's regional system includes the 242-mile long Colorado River Aqueduct with five pumping plants, a distribution system with seven reservoirs, five water filtration plants, 43 pressure control structures, 15 power plants and approximately 775 miles of large diameter pipelines.

Energy Sources and Uses

If the application includes renewable energy or energy efficiency elements, describe existing energy sources and current energy uses.

In 2011 Metropolitan's total energy consumption was approximately 1.43 million megawatt-hours (MWh). Of that, approximately 1.37 million MWh was consumed on the Colorado River Aqueduct. Metropolitan has 16 small-conduit hydroelectric power recovery plants that generated a total of 328 million kilowatt-hours for FY 2010/11. In addition, Metropolitan has two solar photovoltaic energy facilities. The facility at the Skinner plant is rated at one megawatt and the Diamond Valley Lake Visitor Center facility is rated at 520 kilowatts. During FY 2010/11, the Skinner plant produced 2,350 megawatt-hours of energy and the visitor center produced 554,000 kilowatt-hours of energy. The energy is used to offset retail energy use at the two locations. Metropolitan purchases energy needed to meet demand through the retail energy market.

Additional energy is used by Metropolitan's member agencies and retail agencies to deliver potable water to end-use customers. The California Public Utilities Commission study on embedded energy in water found that water sector electricity use is "at least 7.7 percent of statewide electricity requirements" for treatment and delivery to customers.[2]

Working Relationship with Reclamation

Identify any past working relationships with Reclamation. This should include the date(s), description of prior relationships with Reclamation, and a description of the projects(s).

Metropolitan has a long history of working collaboratively with Reclamation on water resource management programs. The table below lists grants and assistance Metropolitan received from Reclamation over the past ten years for implementation of water conservation projects and studies.

[2] California Public Utilities Commission. Embedded Energy in Water Studies Study 2: Water Agency and Function Component Study and Embedded Energy- Water Load Profiles. Prepared by GEI Consultants/Navigant Consulting, Inc. August 31, 2010.

Date	Project	Award Amount
September 2003	**California Friendly Landscape Pilot Rebate Program for New Homes** *Incentives to install water efficient landscapes in model and production homes*	$262,000
September 2004	**Artificial Turf Replacement on Municipal and Public Lands** *Incentives to replace turfgrass with artificial turf*	$220,000
September 2005	**Protector del Agua Online/Web-Based Training** *Conversion of California Friendly landscape training classes into online courses*	$50,000
November 2006	**Landscape Conservation Program Analysis** *Study of market drivers and barriers to increase landscape irrigation efficiency*	$50,000
September 2006	**Innovative Conservation Program** *Funding supports research projects that provide new technologies to conserve water*	$300,000
September 2008	**Innovative Conservation Program** *Funding supports research projects that provide new technologies to conserve water*	$243,000
April 2010	**Economic Analysis Study** *Evaluation of effectiveness of conservation approaches*	MOU
July 2010	**Agricultural Technical Assistance** *Assist with technical issues regarding Metropolitan's agricultural conservation program*	MOU
September 2010	**Conservation Market Study** *Evaluation of urban incentive programs*	$150,000
January 2011	**Retail Water Rate Study** *Reclamation study to evaluate effectiveness of conservation pricing in reducing retail water demand*	MWD collaboration
September 2011	**California Friendly Turf Replacement Incentive Program (Phase 1)** *Incentives to replace turfgrass with climate-appropriate landscapes*	$1,000,000
September 2011	**Landscape Water Use Efficiency Research** *Conduct field research and analyses on outdoor water management technologies and practices*	$60,000
		(cont'd)

Date	Project	Award Amount
November 2011	**Research on effectiveness of rebate programs in reducing household and commercial water use** *Reclamation study to evaluate effectiveness of water rebate programs for a variety of water saving devices in reducing household and commercial water use*	MWD collaboration
September 2012	**Sprinkler Nozzle Incentive Program** *Incentives for high-efficiency rotating nozzles*	$500,000
September 2013	**High-Efficiency Clothes Washer Incentive Program** *Incentives for high-efficiency clothes washing machines*	$500,000
September 2013	**Innovative Conservation Program** *Funding supports research projects that provide new technologies to conserve water*	$100,000
	TOTAL	**$3,435,000**

TECHNICAL PROJECT DESCRIPTION

The technical project description should describe the work in detail, including specific activities that will be accomplished as a result of this project. This description shall have sufficient detail to permit a comprehensive evaluation of the proposal.

PURPOSE AND NEED

The California Friendly® Turf Replacement Incentive Program – Phase 2 will continue the implementation of regional and local turfgrass replacement programs within Metropolitan's service area. The continuation of efforts begun in Phase 1 is needed for several reasons. First, turf replacement provides significant water savings and reduces per capita demand necessary for future water supply reliability. Second, Metropolitan and its member agencies are fostering the transformation of landscape norms and standards within this region from turf-dominant to water-efficient, California Friendly landscapes. Third, Metropolitan's 2011 WaterSMART: Water and Energy Efficiency Grant program has been successfully completed and significant customer demand still remains. The increasing customer demand for turf replacement programs is evidence that the incentives are an effective catalyst for change. The record low rainfall has significantly increased the demand to replace exiting turf with climate appropriate landscapes.

20 Percent per Capita Reduction

Metropolitan's 2010 Integrated Water Resources Plan (IRP) provides a long-range plan for water supply reliability within the region. The IRP identifies the need for 580,000 AF of new annual water savings by 2020 to meet dry year demands, which may be achieved through any combination of increased conservation and recycled water use that offsets potable demand. This savings is equivalent to a 20 percent reduction in urban per capita potable water use from the historical average of 177 gallons per capita per day (GPCD)[3] to 141 GPCD within ten years.

This per capita reduction is consistent with California's Water Conservation Act of 2009 (SBX7-7, Steinberg). The law, enacted as part of the historic water reform legislation package to address the state's long-term water issues, requires the state to achieve a 20 percent reduction in per capita potable water use by 2020 (known as "20x2020"). Metropolitan and its member agencies are working to achieve the IRP target and comply with 20x2020 by expanding use of recycled water and implementing conservation programs that have the potential to provide long-term, sustained water savings.

Per capita reduction is particularly important given projected growth for the region and the need to balance future supply and demand. Metropolitan is estimating that the population within the service area will increase by 170,000 people per year. Metropolitan's service area is included in the December 2012 "Colorado River Basin Water Supply and Demand Study" (Basin Study) that was prepared under Reclamation's Basin Study Program as part of the Department of the Interior WaterSMART program. The Basin Study projects a long-term imbalance in future supply and demand of about 3.2 million acre-feet by 2060 due to projected growth and impacts of climate change. The study indicates that Municipal and Industrial conservation, including residential

[3] Regional average of historical per capita water use from 1996 to 2005

indoor and outdoor landscaping water conservation measures, offers the greatest potential for savings to help manage demand.

Demand for Turf Replacement Programs

Over the past five years, turf replacement incentives have been offered by over 100 water agencies within Metropolitan's service area. In Phase 1 of Metropolitan's turf removal program, approximately 2,700,000 square feet of turfgrass were converted to California Friendly landscapes. Metropolitan's 2011 WaterSMART: Water and Energy Efficiency Grant has been successfully completed and significant customer demand still remains. Communities are looking for means to lower water demand while maintaining the aesthetic quality and functions of landscapes. Residents and businesses want to replace turf to lower water bills and/or publically demonstrate their conservation ethic, but cost is a barrier. Additional funding for incentives is needed to meet customer demand.

Transforming Landscape Norms

Over the past two decades, Metropolitan has invested $322 million in conservation activities, saving over 1,720,000 AF. Retail customers are metered throughout Metropolitan's service area, and many agencies are implementing conservation-based rate structures and enforcing ordinances. To assist member agencies, Metropolitan offers a range of device incentives through its regional programs for residential and commercial customers. Devices include high efficiency toilets, urinals, and clothes washers; climatic or sensor-based smart controllers, moisture sensors, rotating nozzles, and large rotary nozzles; cooling towers; and a range of devices specific to commercial food preparation, hospitality, and medical facilities.

With the region's considerable progress on indoor water use efficiency, landscape is an increasingly important focus for conservation. In addition to the irrigation devices in the regional programs, Metropolitan provides funding for regional and local turf replacement programs that encourage climate-appropriate landscapes. Turf replacement programs are generating higher levels of interest in landscape conservation because they provide highly visible examples of water efficient landscapes.

According to the California Department of Water Resources, landscape irrigation comprised approximately 27 percent of urban water use within the South Coast Hydrologic Region in 2001.[4] (Metropolitan's service area encompasses a majority of this hydrologic region). A 1999 national study on residential uses indicates that approximately 60 percent of residential water use is for landscape irrigation.[5] Landscapes within Metropolitan's service area are dominated by irrigated turfgrass. With average annual precipitation of 17.6 inches in this region, turf requires nearly three times the amount of water provided through natural rainfall. This region receives the majority of annual precipitation from November through February with little to no rainfall during the remainder of the year. Therefore, nearly 100 percent of turf water needs must be provided through irrigation during warmer months when resources are constrained and reservoir levels are lower.

[4] California Department of Water Resources, 2005 California Water Plan Update
[5] American Waterworks Association Research Foundation. Residential End Uses of Water. 1999.

Achieving a 20 percent reduction in per capita water use requires that the region work to transform landscape norms. The California Friendly Turf Replacement Incentive Program is a cornerstone of this effort. Metropolitan, its member agencies, and Reclamation have a successful history of collaboration on landscape conservation projects. The concept of California Friendly landscapes was developed and promoted through the collaborative efforts of Metropolitan and Reclamation. In 2003, Metropolitan and Reclamation launched the California Friendly Landscape Pilot Rebate Program for new development. This project, funded by both agencies, contributed to the development of the state's new Model Water Efficient Landscape Ordinance and mandatory green building code. The California Friendly Turf Replacement Incentive Program – Phase 2 will continue this partnership. The program will provide financial incentives to encourage the replacement of turfgrass with California Friendly landscapes, increasing the number of examples throughout Metropolitan's service area.

OBJECTIVES

The objectives of the California Friendly Turf Replacement Incentive Program – Phase 2 include:

- Transform an additional 1,300,000 square feet of irrigated turfgrass to California Friendly landscapes
- Conserve over 1,800 AF over a ten year life, improving management of local water supplies and reducing reliance on imported supplies to meet future demand
- Continue collaborating with Reclamation to promote California Friendly landscapes and encourage the evolution of landscape norms from high-water use to water efficient landscapes
- Meet increasing customer demand and continue turf replacement program momentum in the region
- Provide a base incentive that is sufficient to address cost barrier issues (up to $0.23 per square foot from Reclamation and up to $0.77 per square foot from Metropolitan, member agencies, and other non-federal sources)
- Contribute to California's goal of achieving a 20 percent reduction in urban per capita potable water use by 2020 (SBX7-7, Water Conservation Act of 2009 known as "20x2020")
- Assist retail agencies in complying with 20x2020 and fulfilling requirements of the California Urban Water Conservation Council Memorandum of Understanding Regarding Urban Water Conservation in California
- Implement M&I conservation measures consistent with the adaptation strategies in the December 2012 "Colorado River Basin Water Supply and Demand Study" that was prepared under Reclamation's Basin Study Program as part of the Department of the Interior WaterSMART program
- Provide benefits for energy efficiency and water supply sustainability

PROJECT DESCRIPTION

The California Friendly Turf Replacement Incentive Program – Phase 2 will provide funding to increase the availability of turf replacement programs within Metropolitan's service area over the next two years. A total of $1.3 million in incentives will be offered through programs implemented by Metropolitan and participating member and retail agencies. Program funding will provide a base incentive up to $1.00 per square foot for residential and commercial sites (up to $0.23 per square foot from Reclamation matched with up to $0.77 per square foot from Metropolitan, member agencies, and other non-federal sources). Actual incentives may be higher depending on the local water agency's contribution. The Phase 2 program is estimated to conserve over 1,800 AF over a ten year life with quantifiable water savings. It will also save an estimated 4.9 million kWh by increasing energy efficiency in water management. Reduced consumptive demand will provide additional benefits for water supply sustainability.

With total funding of $3.3 million in Phases 1 and 2, the magnitude of the California Friendly Turf Replacement Incentive Program is fostering the transformation of landscape norms within this region from turf dominant, high-water use landscapes to California Friendly landscapes. As conceived by Metropolitan and Reclamation, California Friendly landscapes are water efficient through the use of climate appropriate plants, efficient irrigation, permeable surfaces that allow rainwater infiltration and mulch to retain soil moisture.

The California Friendly Turf Replacement Incentive Program has minimum eligibility and conversion requirements to maximize water savings, although member agencies may impose additional requirements for their local programs. Participants are encouraged to use California Friendly plants; install high efficiency irrigation system components or remove irrigation; and avoid the use of invasive species. Minimum requirements for participation include:

- Area to be converted must have irrigated turfgrass;
- Converted area must not include any live turfgrass;
- Converted area, including weed barriers, must be permeable to water and air;
- Exposed soil must be covered with mulch; and
- The participant must agree to the following: (1) allow a pre and post inspection; (2) sustain the conversion for a minimum of five years unless the property is sold; (3) comply with all applicable laws, policies, codes, covenants, conditions and restrictions; and (4) allow water use data to be used to evaluate the program.

The California Friendly Turf Replacement Incentive Program is intended to address the three primary barriers to change for consumers: cost, aesthetics, and knowledge.

- ***Cost***

  The Phase 2 program will provide an incentive of up to $1.00 per square foot (up to $0.23 from Reclamation and up to $0.77 from Metropolitan, member agencies, and other non-federal sources), with participating agencies having the option to increase the incentive amount for their customers. Agencies within Metropolitan's service area that have offered incentives under $1.00 per square foot noted that the low incentives limited interest and participation. The $1.00 per square foot incentive offered in Phase 1 generated significant customer demand and will be continued in Phase 2.

- ***Aesthetics***

  The program will increase the number of California Friendly landscape examples that can be viewed in person and online, which is essential to persuading consumers to replace turf. In addition to design resources developed by member agencies, actual landscapes in the community provide real-world examples to assist others in making the change. This program will encourage development of additional resources that can be accessed online as well as increase the number of examples within communities.

- ***Knowledge***

  Participant knowledge on how to remove turf, and design and install a water efficient landscape is critical to the success of turf replacement programs. Comprehensive educational resources are widely available within this region. In-person and online training is available for homeowners and professionals through Metropolitan's California Friendly Landscape Training program. Some agencies have created (and require) online training for participants, including videos. Classes on how to create water efficient landscapes are regularly offered at the Water Conservation Garden in San Diego County, botanic gardens, and native plant nurseries. The Surfrider Foundation, a prominent environmental organization, provides in-person training and online resources through their Ocean Friendly Gardens program. Professional training in irrigation efficiency is offered through the California Landscape Contractors Association as well as irrigation manufacturers and supply houses. Extensive resources for design and plant selection are available through Metropolitan's BeWaterWise.com website, and there are numerous California Friendly demonstration gardens throughout Metropolitan's service area.

Implementation through regional and locally administered programs offers several advantages. First, it maximizes the opportunity for customer participation, either through local programs or a regional program for local agencies that have limited staff resources for program administration. Second, it increases the potential for individual customer success through direct interaction with their water agencies. It provides opportunities to educate customers about local landscape standards, irrigation technologies, and climate appropriate plants for local conditions. Most importantly, it leverages federal, regional, and local funding (through supplemental incentives and in-kind services) to build momentum and public acceptance within communities. Agencies report anecdotal evidence of a multiplier effect where additional landscapes are converted within neighborhoods due to one or two properties participating in a program. This outcome is an indicator of changing landscape norms, one of the program's key objectives.

Phase 1 Turf Replacement Program

Metropolitan implemented Phase 1 of the California Friendly Turf Replacement Incentive Program with funding for the replacement of approximately 2,000,000 square feet of turf. Metropolitan's 2011 WaterSMART: Water and Energy Efficiency Grant helped fund Phase 1 along with a 2008 Proposition 50 Drought Assistance grant. The customer response during Phase 1 has provided clear indication of public interest and support for turf replacement programs.

Phase 2 – Continued Funding for the California Friendly Turf Replacement Incentive Program

Funding is a primary constraint that limits future program offerings. With continued funding provided for Phase 2 by Metropolitan, member agencies, and Reclamation, broader participation will be encouraged and the momentum generated in Phase 1 can continue. The sources of funding for Phase 2 will be:

Phase 2 Incentives

Source	Incentive per Square Foot	Yr 1	Yr 2	Total
2013 WaterSMART Grant	Up to $0.23	$150,000	$150,000	$300,000
Non-federal sources: Metropolitan, member and retail agencies	Up to $0.77	$500,000	$500,000	$1,000,000
Member Agency (optional)	$X			
Total	Up to $1.00 + $X	$650,000	$650,000	$1,300,000

Program Monitoring, Verification, and Evaluation

As project administrator, Metropolitan will perform the following tasks:

- Coordinate with participating member agencies to track agency funding requests, expenditures, and status of inspections
- Administer regional turf removal program as requested by member agencies
- Conduct periodic status meetings with participating agencies to address implementation issues, share best practices, and ensure adherence to the project schedule
- Participate in a representative sample of pre and post inspections with participating agencies
- Receive and analyze sample data from retail water agencies, including pre and post conversion water use
- Prepare financial and program performance reports, including final program evaluation

Implementing agencies will perform the following tasks:

- Develop local program terms, conditions, guidelines, resources
- Provide marketing, outreach, and customer assistance for the local program
- Administer the local program through in-house resources or use of Metropolitan's regional rebate program administrator (www.socalwatersmart.com)
- Review applications to ensure eligibility; conduct pre and/or post inspections to ensure compliance with program terms and conditions
- Provide representative digital project photos of pre and post conditions
- Collect site-specific data from participants to assist in the program evaluation
- Report sample data to Metropolitan for use in program evaluation
- Review data analysis and assist in program evaluation

Performance Measures

Data will be collected for a sample of sites to determine general characteristics of participants in the program. Pre and post conversion water use history and site data for the sample sites will be used to estimate program water savings.

Landscape irrigation occurs year-round within Metropolitan's service area. Pre-project baseline data will be estimated using dedicated meter data and theoretical irrigation requirements:

- **Dedicated meter data:** Historical water use data (up to 10 years) for a representative sample of project sites served by dedicated irrigation meters will be used to determine baseline water use for turf irrigation. Typically these are large landscape sites, such as homeowner associations, parks, golf courses, schools, and other institutional facilities.

The metered water use will be divided by the square footage of irrigated area and the number of years in the data set, providing average annual water demand per square foot of turf.

- **Theoretical irrigation requirement:** For smaller projects that do not have dedicated irrigation meters, pre-project water use will be determined by using reference evapotranspiration (ETo) values from the California Irrigation Management Information System (CIMIS) weather stations within Metropolitan's service area. The following formula will be used:

$$ETWU = \frac{ETo \times 0.62 \times PF \times PA}{IE}$$

ETWU = Estimated Total Water Use per year (gallons)

ETo = Reference Evapotranspiration (inches)

- Reference ETo for Metropolitan's service area = 50.2 inches/yr:
  - Metropolitan has eight reference evapotranspiration zones within its service area ranging from 32.9 to 62.5 inches/yr
  - The area of each zone within Metropolitan's service area was calculated using GIS
  - The reference evapotranspiration for Metropolitan's service area was calculated based on the weighted average of the zone areas

PF = Plant factor

- Pre-conversion - Irrigation requirements for cool season turf = 80% ETo[6]
- Post-conversion - Plant factor for moderate water use plants = 0.4 – 0.6[7]; assume lower end due to focus on California Friendly plants, local program requirements, and participants' interest in saving water

PA = Project Area, square feet of irrigated turf to be removed

0.62 = Conversion Factor

IE = defined as "the measurement of the amount of water beneficially used divided by the amount of water applied"[8]

- Pre-conversion = 0.4; assume 0.5 for inefficient system design and condition plus further inefficiency of 0.1 due to improper controller settings that result in overwatering (typical observation within Metropolitan's service area)
- Post-conversion = 0.8; average based on range of requirements for local programs (including capping existing systems, elimination of

[6] University of California Cooperative Extension and California Department of Water Resources. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California. 2000
[7] California Model Water Efficient Landscape Ordinance. September 2009
[8] Ibid.

overhead spray, and installation of drip systems); and participants' interest in saving water

Post-project methods for quantifying benefits of turf removal projects will include verifying the amount of turf removed at project sites. This will be accomplished through a combination of project inspections, site photos, and geographic information systems technology with aerial photos. The water savings will be calculated based on area of turf removed and any known irrigation changes compared to the estimated pre-project turf irrigation application rate from dedicated meter data or the theoretical irrigation requirement. The total savings for Phase 2 will be calculated as the summation of water savings for all participating sites, determined through dedicated meter data and the theoretical irrigation requirement for the sample sites.

Data will be normalized for weather if conditions are significantly different for pre- and post-data evaluation periods. The Southern Nevada Water Authority 2005 Xeriscape Conversion Study found significant annual savings in Year 1 following conversion. The Inland Empire Utilities Agency WaterWise Residential Landscape Rebate Program Evaluation noted that it would be best to allow at least one year following installation before analyzing water use data. With project completion by September 2016, some conversions will have less than 12 months of post installation data. The analysis will consider this and other data limitations.

SCOPE OF WORK

Metropolitan's scope of work for the California Friendly Turf Replacement Incentive Program – Phase 2 will include the following tasks and deliverables:

Task		Month Due (from authorization to proceed)	Deliverables
1	Issue addendum to member agency agreements to incorporate grant requirements	1	Executed addendum
2	Provide outreach to member agencies to encourage participation, explain program requirements and administration	1	Summary of outreach efforts
3	Execute funding requests for participating member agencies	2	List of participating agencies, funding levels, incentive amounts
4	Provide agencies with information to acknowledge Reclamation funding on program materials	2	Information to participating agencies
5	Collect participating agency program materials, such as outreach and education collateral materials, applications and	4	Summary of retail programs, copies of program materials

	Task	Month Due (from authorization to proceed)	Deliverables
	guidelines		
6	Administer program, monitor performance, collect sample data	Ongoing	Program tracking database
7	Prepare semiannual financial and program performance reports	6, 12, 18, 24	SF 425 and interim performance report
8	Work with participating agencies on program assessment and evaluation	12, 24	Data collection and analysis
9	Prepare final financial and program evaluation report	24	SF 425 and final program performance report

BENEFITS

The California Friendly Turf Replacement Incentive Program – Phase 2 will provide multiple benefits:

- Estimated quantifiable water savings of over 1,800 AF over a ten year life
- Reduced energy demand up to 4.9 kWh due to reduced pumping to import water through the Colorado River Aqueduct and State Water Project, treat and deliver the water to customers
    - Based on estimated minimum energy savings of 2,611 kWh per acre foot per California Public Utilities Commission studies
- Improved management of local water supplies to help reduce reliance on imported water supplies to meet expected future demands

FEASIBILITY AND READINESS TO PROCEED

Rapid deployment of grant funds for Phase 2 is possible. Momentum is already established and program administrative elements are already in place through implementation of Phase 1, in which over 100 agencies participated. Several agencies have developed web pages for their turf replacement programs, including tools and resources to assist participants (i.e., Long Beach Water Department's Lawn to Garden program: www.lblawntogarden.com). Other agencies are using Metropolitan's regional SoCalWaterSmart website that includes turf replacement program pages for both residential and commercial customers.

OUTREACH, COMMUNITY INVOLVEMENT AND ACCEPTANCE

Metropolitan's member agencies have a long track record of involving local community organizations in the implementation of their conservation programs. There is a regional commitment to include local organizations in programs such as these, particularly for outreach and education. Watershed councils, environmental groups, energy utilities, and local governments are supportive of the programs for the multiple benefits they provide in water supply, water quality, energy demand management, and greenwaste reduction. Business organizations and chambers of commerce are potential supporters as well.

PROGRAM MANAGEMENT

Metropolitan's California Friendly Turf Replacement Incentive Program is managed by Ms. Kathy Ramos, Assoc. Resource Specialist. She is currently managing Metropolitan's landscape programs, including the Phase 1 turf replacement program.

Ms. Ramos will manage the project with the assistance of Ms. Alice Webb-Cole, Senior Resource Specialist, and Mr. Andrew Hui, Regional Supply Unit Manager. Ms. Webb-Cole and Mr. Hui have provided oversight on several Reclamation agreements, including the California Friendly Turf Replacement Incentive Program – Phase 1.

EVALUATION CRITERIA

The evaluation criteria portion of your application should thoroughly address each of the following criterion and subcriterion in the order presented to assist in the complete and accurate evaluation of your proposal. (Note: it is suggested that applicants copy and paste the below criteria and subcriteria into their applications to ensure that all necessary information is adequately addressed). Applications will be evaluated against the evaluation criteria (listed below), which comprise 100 points of the total evaluation weight. Please note that projects may be prioritized to ensure balance among the program Task Areas and to ensure that the projects address the goals of the WaterSMART program.

Evaluation Criterion A: Water Conservation (28 points)

*Up to **28 points** may be awarded for a proposal that will conserve water and improve efficiency. Points will be allocated to give consideration to projects that are expected to result in significant water savings.*

Subcriterion No. A.1—Water Conservation:

For projects with quantifiable and sustained water savings, please respond to Subcriterion No. 1(a)—Quantifiable Water Savings described in this subsection. If the project does not result in quantifiable water savings but will improve water management, please respond to Subcriterion No. 1(b)—Improved Water Management described in this subsection. If the project has separate components that will result in both quantifiable water savings and improved water management, an applicant may respond to both Subcriteria No. A.1(a) and (b). However, an applicant is limited to 20 points total under both Subcriteria No. A.1(a) and (b).

Subcriterion No. A.1(a)—Quantifiable Water Savings:

*Up to **20 points** may be allocated based on the quantifiable water savings expected as a result of the project.*

Describe the amount of water saved. For projects that conserve water, please state the estimated amount of water expected to be conserved (in acre-feet per year) as a direct result of this project. Please provide sufficient detail supporting how the estimate was determined, including all supporting calculations. Please be sure to consider the questions associated with your project type (listed below) when determining the estimated water savings, along with the necessary support needed for a full review of your proposal (please note, the following is not an exclusive list of eligible project types. If your proposed project does not align with any of the projects listed below, please be sure to provide support for the estimated project benefits, including all supporting calculations and assumptions made).

In addition, all applicants should be sure to address the following:

- What is the applicant's average annual acre-feet of water supply?
- Where is that water currently going (e.g., back to the stream, spilled at the end of the ditch, seeping into the ground, etc.)?
- Where will the conserved water go?

(6) Landscape Irrigation Measures: Landscape irrigation measures can provide water savings by reducing outdoor water usage. These measures include turf removal, Smart irrigation controllers (e.g., weather or soil-moisture based) and high-efficiency nozzles (e.g., sprinkler heads).

a. **Turf Removal:** Applicants proposing turf removal projects should address the following:

- How have average annual water savings estimates been determined? Please provide all relevant calculations, assumptions, and supporting data.
- 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?
- 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?
- Will site audits be performed before applicants are accepted into the program?
- How will actual water savings be verified upon completion of the project?

The California Friendly Turf Replacement Incentive Program – Phase 2 is estimated to provide 186 AF per year of quantifiable water savings through the removal of irrigated turfgrass and the installation of California Friendly landscapes. 186 AF per year is enough water to serve over 360 homes for a year. The water savings estimate is based on the difference between the pre and post conversion Estimated Total Water Use (ETWU).

$$ETWU = \frac{ETo \times 0.62 \times PF \times PA}{IE}$$

Factor	Pre-conversion	Post-conversion
Reference ETo	50.2	50.2
Conversion Factor (inches to gallons)	0.62	0.62
Plant Factor (PF)	0.8	0.4
Project Area (PA)	1 SF	1 SF
Irrigation Efficiency	0.4	0.8
ETWU	62.2	15.5

Water Savings per square foot: 62.2 – 15.5 = 46.7 gal/sf

Assumptions:

- Reference ETo for Metropolitan's service area = 50.2 inches/yr:
  - Metropolitan has eight reference evapotranspiration zones within its service area ranging from 32.9 to 62.5 inches/yr
  - The area of each zone within Metropolitan's service area was calculated using GIS
  - The reference evapotranspiration for Metropolitan's service area was calculated based on the weighted average of the zone areas
- Plant Factor:
  - Pre-conversion - Irrigation requirements for cool season turf = 80% ETo[9]
  - Post-conversion - Plant factor for moderate water use plants = 0.4 – 0.6[10]; assume lower end due to focus on California Friendly plants, local program requirements, and participants' interest in saving water
- Irrigation Efficiency defined as "the measurement of the amount of water beneficially used divided by the amount of water applied"[11]
  - Pre-conversion = 0.4; assume 0.5 for inefficient system design and condition plus further inefficiency of 0.1 due to improper controller settings that result in overwatering (typical observation within Metropolitan's service area)
  - Post-conversion = 0.8; average based on range of requirements for local programs (including capping existing systems, elimination of overhead spray, and installation of drip systems); and participants' interest in saving water

[9] University of California Cooperative Extension and California Department of Water Resources. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California. 2000
[10] California Model Water Efficient Landscape Ordinance. September 2009
[11] Ibid.

Phase 2 Water Savings

Estimated average water savings per square foot	a	46.7 gal / sq ft / year
Estimated square footage to be converted • $1.3 million in incentives, up to $1.00 per square foot	b	1,300,000
Estimated annual water savings • **(a * b) / 325,851 gal per AF**	**c**	**186 AF/year**
Estimated life of landscape conversion	d	10 years
Estimated Total Savings – Life of Project • **c * d**		**1863 AF**

All prospective project requests are reviewed prior to applicants being accepted into the program. Participating agencies ensure eligibility and compliance with program terms and conditions by reviewing program applications and site photos, and/or conducting pre-inspections. Applicants receive notice to proceed once the application review is complete and the site is deemed eligible.

Data will be collected for a sample of sites to determine general characteristics of participants in the program. Pre and post conversion water use history and site data for the sample sites will be used to estimate program water savings.

Landscape irrigation occurs year-round within Metropolitan's service area. Pre-project baseline data will be estimated using dedicated meter data and theoretical irrigation requirements:

- **Dedicated meter data:** Historical water use data (up to 10 years) for a representative sample of project sites served by dedicated irrigation meters will be used to determine baseline water use for turf irrigation. Typically these are large landscape sites, such as homeowner associations, parks, golf courses, schools, and other institutional facilities. The metered water use will be divided by the square footage of irrigated area and the number of years in the data set, providing average annual water demand per square foot of turf.

- **Theoretical irrigation requirement:** For smaller projects that do not have dedicated irrigation meters, pre-project water use will be determined by using reference evapotranspiration (ETo) values from the California Irrigation Management Information System (CIMIS) weather stations within Metropolitan's service area. The following formula will be used:

$$ETWU = \frac{ETo \times 0.62 \times PF \times PA}{IE}$$

ETWU = Estimated Total Water Use per year (gallons)

ETo = Reference Evapotranspiration (inches)

- Reference ETo for Metropolitan's service area = 50.2 inches/yr:
  - Metropolitan has eight reference evapotranspiration zones within its service area ranging from 32.9 to 62.5 inches/yr

- The area of each zone within Metropolitan's service area was calculated using GIS
- The reference evapotranspiration for Metropolitan's service area was calculated based on the weighted average of the zone areas

PF = Plant factor

- Pre-conversion - Irrigation requirements for cool season turf = 80% ETo[12]
- Post-conversion - Plant factor for moderate water use plants = 0.4 – 0.6[13]; assume lower end due to focus on California Friendly plants, local program requirements, and participants' interest in saving water

PA = Project Area, square feet of irrigated turf to be removed

0.62 = Conversion Factor

IE = defined as "the measurement of the amount of water beneficially used divided by the amount of water applied"[14]

- Pre-conversion = 0.4; assume 0.5 for inefficient system design and condition plus further inefficiency of 0.1 due to improper controller settings that result in overwatering (typical observation within Metropolitan's service area)
- Post-conversion = 0.8; average based on range of requirements for local programs (including capping existing systems, elimination of overhead spray, and installation of drip systems); and participants' interest in saving water

Post-project methods for quantifying benefits of turf removal projects will include verifying the amount of turf removed at project sites. This will be accomplished through a combination of project inspections, site photos, and geographic information systems technology with aerial photos. The preliminary estimated water savings will be calculated based on area of turf removed and any known irrigation changes compared to the estimated pre-project turf irrigation application rate from dedicated meter data or the theoretical irrigation requirement. The total savings for Phase 2 will be calculated as the summation of water savings for all participating sites, determined through dedicated meter data and the theoretical irrigation requirement for the sample sites.

Data will be normalized for weather if conditions are significantly different for pre- and post-data evaluation periods. Because of the short project duration, post-conversion water savings data may not reflect accurate savings. The Southern Nevada Water Authority 2005 Xeriscape Conversion Study found significant annual savings in Year 1 following conversion. The Inland Empire Utilities Agency WaterWise Residential Landscape Rebate Program Evaluation noted that it would be best to allow at least one year following installation before analyzing water use data. With project completion by September 2016, some conversions will not have 12 months of post installation data. The analysis will consider this and other data limitations.

[12] University of California Cooperative Extension and California Department of Water Resources. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California. 2000
[13] California Model Water Efficient Landscape Ordinance. September 2009
[14] Ibid.

Metropolitan's average annual water supply is 1,982,000 AF of water imported from the Colorado River and the Bay-Delta. The majority of imported supply is used to meet Municipal and Industrial (M&I) demand (96%), with a small portion (4%) used to meet retail agricultural demand and provide groundwater replenishment. Per the state's analysis in 2001, approximately 27 percent of this region's M&I use is for landscape irrigation.

Metropolitan's 2010 Integrated Resources Plan identifies the need for new annual water savings of 580,000 AF by 2020 to meet dry year demands. The conserved water will reduce consumptive demand, particularly during warmer months when resources are constrained and reservoir levels are lower. This will improve management of local water supplies and help reduce reliance on imported water supplies to meet expected future demands.

AND/OR

Subcriterion No. A.1(b)—Improved Water Management:

*Up to **5 points** may be awarded if the proposal will improve water management through measurement, automation, advanced water measurement systems, or through implementation of a renewable energy project, or through other approaches where water savings are not quantifiable.*

Describe the amount of water better managed. For projects that improve water management but which may not result in measurable water savings, **state the amount of water expected to be better managed, in acre-feet per year and as a percentage of the average annual water supply.** (The average annual water supply is the amount actually diverted, pumped, or released from storage, on average, each year. This does not refer to the applicant's total water right or potential water supply.) Please use the following formula:

$$\frac{\text{Estimated Amount of Water Better Managed}}{\text{Average Annual Water Supply}}$$

Not applicable

Subcriterion No. A.2—Percentage of Total Supply:

*Up to **4 additional points** may be allocated based on the percentage of the applicant's total average water supply (i.e., including all facilities managed by the applicant) that will be conserved directly as a result of the project.*

Provide the percentage of total water supply conserved: State the applicant's total average annual water supply in acre-feet. Please use the following formula:

$$\frac{\text{Estimated Amount of Water Conserved}}{\text{Average Annual Water Supply}}$$

Metropolitan has two sources of water supply: Colorado River, delivered through the Colorado River Aqueduct, and the Bay-Delta, delivered through the State Water Project. Deliveries from each source for the past 5 years are shown below:

Year	Colorado River Aqueduct (AF)	State Water Project (AF)	Total (AF)
2013	809,397	908,004	1,783,333
2012	455,446	1,129,062	1,707,769
2011	444,773	1,379,353	1,824,126
2010	837,017	1,129,062	1,996,079
2009	1,043,381	908,004	1, 951,845
Total	3,590,474	5,642,678	9,233,152
Average Annual Supply (Total / 5 yrs)			1,846,630
Estimated Quantifiable Annual Water Savings			186
Percentage of Average Annual Supply Conserved and Better Managed			0.01%

*Best estimate as of December 2013.

Although the water savings reflects a small percentage of Metropolitan's average annual supply, the program is an important catalyst in reducing outdoor water use across the region. This incremental change, coupled with program momentum through Phase 1, offers significant long-term benefits by transforming landscape norms.

Subcriterion No. A.3—Reasonableness of Costs:

*Up to **4 additional points** may be awarded based on the reasonableness of the cost for the benefits gained.*

Please include information related to the total project cost, annual acre-feet conserved (or better managed), and the expected life of the improvement. Use the following calculation:

$$\frac{\text{Total Project Cost}}{\text{(Acre-Feet Conserved, or Better Managed x Improvement Life)}}$$

Failure to include this required calculation will result in no score for this section.

For all projects involving physical improvements, specify the expected life of the improvement in number of years and provide support for the expectation (e.g., manufacturer's guarantee, industry accepted life-expectancy, description of corrosion mitigation for ferrous pipe and fittings, etc.). Failure to provide this information may result in a reduced score for this section.

Grant funding for the California Friendly Turf Replacement Incentive Program – Phase 2 will be used entirely for incentives for regional and locally-implemented turf replacement programs. Metropolitan is assuming a minimum 10 year life for landscape conversion based on the expected life of typical shrubs and irrigation equipment.

$$\frac{\$1{,}300{,}000 \text{ Total Project Cost}}{[186 \text{ AF/year (quantifiable)} \times 10 \text{ year improvement life}]} = \$699/\text{AF}$$

Evaluation Criterion B: Energy-Water Nexus (16 points)

*Up to **16 points** may be awarded based on the extent to which the project increases the use of renewable energy or otherwise results in increased energy efficiency.*

For projects that include construction or installation of renewable energy components, please respond to Subcriterion No. B.1— Implementing Renewable Energy Projects Related to Water Management and Delivery. If the project does not implement a renewable energy project but will increase energy efficiency, please respond to Subcriterion No. B.2— Increasing Energy Efficiency in Water Management. If the project has separate components that will result in both implementing a renewable energy project and increasing energy efficiency, an applicant may respond to both. However, an applicant may receive no more than 16 points total under both Subcriteria No. B.1 and B.2.

Subcriterion No. B.1— Implementing Renewable Energy Projects Related to Water Management and Delivery:

*Up to **16 points** may be awarded for projects that include construction or installation of renewable energy components (i.e., hydroelectric units, solar-electric facilities, wind energy systems, or facilities that otherwise enable the use of renewable energy). Projects such as small-scale solar resulting in minimal energy savings or production will be considered under Subcriterion No. B.2 below.*

Describe the amount of energy capacity. For projects that implement renewable energy systems, state the estimated amount of capacity (in kilowatts) of the system. Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

Not applicable

Describe the amount of energy generated. For projects that implement renewable energy systems, state the estimated amount of energy that the system will generate (in kilowatt hours per year). Please provide sufficient detail supporting the stated estimate, including all calculations in support of the estimate.

Not applicable

Describe any other benefits of the renewable energy project. Please describe and provide sufficient detail on any additional benefits expected to result from the renewable energy project, including:

- Expected environmental benefits of the renewable energy system
- Any expected reduction in the use of energy currently supplied through a Reclamation project
- Anticipated beneficiaries, other than the applicant, of the renewable energy system
- Expected water needs of the renewable energy system

Not applicable

AND/OR

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

*If the project is not implementing a renewable energy component, as described in Subcriterion No.B. 1 above, up to **4 points** may be awarded for projects that address energy demands 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 management project (e.g., reduced pumping).

- Please provide sufficient detail supporting the calculation of any energy savings expected to result from water conservation improvements. If quantifiable energy savings are expected to result from water conservation improvements, please provide sufficient details and supporting calculations. If quantifying energy savings, please state the estimated amount in kilowatt hours per year.
- 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?
- 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.
- Does the calculation include the energy required to treat the water?
- Will the project result in reduced vehicle miles driven, in turn reducing carbon emissions? Please provide supporting details and calculations.

The California Friendly Turf Replacement Incentive Program – Phase 2 is estimated to reduce demand up to 186 AF per year of local supplies and imported water, which is pumped from the

Colorado River through the Colorado River Aqueduct and from the Bay-Delta through the State Water Project. According to recent statewide studies prepared for the California Public Utilities Commission, the average energy intensity of water delivered by Metropolitan to its member agencies is 2,473 kWh/AF.[15] In addition, the range of energy intensity to distribute treated water to end use customers is 45-1,574 kWh per million gallons, or up to 4,830 KWh per acre foot.[16] Based on the energy intensity data in the Commission's studies, the program will result in the following minimum energy savings due to reduced reliance on water imported from the Colorado River and State Water Project:

Estimated Water Savings	**Energy Intensity kWh/AF** (from point of origin to end use customer)	**Estimated Energy Savings**
186 AF/year	Minimum 2,611	At least 485,646 kWh/year

The benefit of this energy savings is further enhanced by timing. Irrigation demands within Metropolitan's service area are highest during the warmer months. Historic reference evapotranspiration during July is nearly three times higher than the low in January. The project's estimated water and energy savings will primarily occur during the warmer months when demands are high, resources are constrained, and reservoirs are lower.

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

Not applicable

Evaluation Criterion C: Benefits to Endangered Species (12 points)

*Up to **12 points** may be awarded for projects that will benefit federally-recognized candidate species or up to **12 points** may be awarded for projects expected to accelerate the recovery of threatened or endangered species, or addressing designated critical habitat.*

For projects that will directly benefit *federally-recognized candidate species*, please include the following elements:

(1) What is the relationship of the species to water supply?

Not applicable

(2) What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?

Not applicable

For projects that will directly accelerate the recovery of *threatened or endangered species or address designated critical habitats*, please include the following elements:

[15] California Public Utilities Commission. Embedded Energy in Water Studies Study 1: Statewide and Regional Water-Energy Relationship. Prepared by GEI Consultants/Navigant Consulting, Inc. August 31, 2010.

[16] California Public Utilities Commission. Embedded Energy in Water Studies Study 2: Water Agency and Function Component Study and Embedded Energy- Water Load Profiles. Prepared by GEI Consultants/Navigant Consulting, Inc. August 31, 2010.

(1) How is the species adversely affected by a Reclamation project?

Metropolitan imports water from the Colorado River and Bay-Delta. Both water sources provide critical habitat for federally listed endangered species, which are affected by water diversions. Endangered fish species within the Lower Colorado River include: Moapa dace (*Moapa coriacea),* Woundfin (*Plagopterus argentissimus),* Virgin River Chub (*Gila robusta seminude*), Bonytail (*Gila elegans),* Humpback Chub *(Gila cypha),* Razorback sucker *(Xyrauchen texanus),* and Colorado pikeminnow *(Ptychocheilus lucius).*[17] Within the Bay-Delta, threatened species include: Central Valley Steelhead (*Oncorhynchus mykiss*), Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*), Delta smelt (*Hypomesus transpacificus*), and North American green sturgeon (*Acipenser medirostris*). The Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*) is an endangered species.[18] There are also listed mammal, bird, plant and amphibian species that are dependent on the water quality and water quantity of these riparian water systems.

(2) Is the species subject to a recovery plan or conservation plan under the Endangered Species Act?

The Lower Colorado River Multi-Species Conservation Program (MSCP) is a long-term multi-agency effort to conserve and work towards the recovery of endangered species on the lower Colorado River. The Bay-Delta Conservation Plan (BDCP) that is under development will address federally listed species within that area. The BDCP seeks to improve the health of the Delta as a whole, rather than on species by species basis. It identifies a suite of activities designed to improve the health of natural communities, such as habitat restoration, water conservation, and modifying the placement and operation of major water pumping and diversion facilities.

(3) What is the extent to which the proposed project would reduce the likelihood of listing or would otherwise improve the status of the species?

The Phase 2 Program will reduce demand over 1,800 AF with quantifiable savings. It will improve management of local water supplies and thereby reduce reliance on imported water from the Bay-Delta and the Colorado River to meet future demand. The Phase 2 program is consistent with the efforts of the Lower Colorado River MSCP and the BDCP and would likely improve the status of threatened and endangered species covered under the plans. In addition, it would reduce the likelihood of additional listings within Metropolitan's service area by reducing polluted runoff from landscapes.

Projects that benefit both federally-recognized candidate species and federally-listed threatened or endangered species or designated critical habitat will receive additional consideration under this criterion. Please see <http://www.fws.gov/endangered/index.html> for a complete listing of federally-recognized candidate species and federally-listed threatened or endangered species in your area.

Evaluation Criterion D: Water Marketing (12 points)

*Up to **12 points** may be awarded for projects that propose water marketing elements, with maximum points for projects that establish a new water market. Note: Water marketing does not include an entity selling conserved water to an existing customer. This criterion is intended for the situation where an entity that is conserving water uses water marketing to make the conserved water available to meet other existing water supply needs or uses.*

[17] Bureau of Reclamation. Final EIS – Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. October 2007.
[18] BDCP Steering Committee. Bay Delta Conservation Plan Working Draft. August 26, 2010.

Briefly describe any water marketing elements included in the proposed project. Include the following elements:

(1) Estimated amount of water to be marketed

(2) A detailed description of the mechanism through which water will be marketed (e.g., individual sale, contribution to an existing market, the creation of a new water market, or construction of a recharge facility)

(3) Number of users, types of water use, etc. in the water market

(4) A description of any legal issues pertaining to water marketing (e.g., restrictions under Reclamation law or contracts, individual project authorities, or State water laws)

(5) Estimated duration of the water market

Metropolitan is one of a number of agencies in Southern California that either contract with the California Department of Water Resources for water supplies or obtain supplies from the Colorado River. Metropolitan's IRP has identified a diverse portfolio of water supplies that helps to maintain supply reliability. Water conservation and purchases from water markets and transfers are linked as components of the IRP; in any given year, one or both components can be used to help meet regional retail water demands in Metropolitan's service area. The estimated 1,800 acre feet that will be conserved from the California Friendly Turf Replacement Incentive Program will help meet Metropolitan's IRP water use efficiency goal of 580,000 AF of annual water savings by 2020.

From a greater Southern California regional perspective, the water savings allows supplies made available by Metropolitan to be used elsewhere in the region, increasing overall regional reliability and helping to manage water costs. This is explicitly recognized in Metropolitan's dry-year Water Supply Allocation Plan (WSAP). The WSAP is used to allocate dry-year supplies among Metropolitan's member agencies. This plan encourages regional support for conservation by allowing supplies to be distributed among agencies based on their needs for water, with adjustments that reflect their respective conservation efforts. Metropolitan's imported deliveries allow the benefits of conservation to be applied on a regional scale, not just within the specific agency that pursues a given conservation project.

Evaluation Criterion E: Other Contributions to Water Supply Sustainability (14 points)

*Up to **14 points** may be awarded for projects expected to contribute to a more sustainable water supply. This criterion is intended to provide an opportunity for the applicant to explain how the project relates to a **WaterSMART Basin Study**, how the project could expedite future **on-farm improvements**, or how the project will provide **other benefits to water supply sustainability** within the basin. An applicant may receive the maximum 14 points under this criterion based on discussion of one or more of the numbered sections below.*

*(1) Points may be awarded for projects that address an adaptation strategy identified in a **WaterSMART Basin Study**.*

Proposals that thoroughly discuss how a project is addressing an adaptation strategy identified in a Basin Study (i.e., a strategy to mitigate the impacts of water shortages resulting from climate change, drought, increased demands, or other causes) may receive maximum points under this criterion. Applicants should provide as much detail as possible about the relationship of the proposed project to the adaptation strategy identified in the Basin Study, including, but not limited to, the following:

- Describe in detail the adaptation strategy that will be implemented through this WaterSMART Grant project. Identify the specific WaterSMART Basin Study where this adaptation strategy was developed. Describe the water supply or water management issue that this adaptation strategy will address.

Metropolitan's service area is included in the "Colorado River Basin Water Supply and Demand Study" (December 2012) (Basin Study). Prepared under Reclamation's Basin Study Program as part of the Department of the Interior WaterSMART program, the Basin Study projects a long-term imbalance in future supply and demand of about 3.2 million acre-feet by 2060 due to

projected growth and impacts of climate change. The Basin Study analyzes various representative options that were combined into four portfolios. Each of the portfolios represents a different potential adaptation strategy. Increased Municipal and Industrial (M&I) Water Conservation is included in each of the strategies, with potential yield of 600,000 acre-feet per year by 2035 and 1 million acre-feet by 2060.

The California Friendly Turf Replacement Program – Phase 2 will implement M&I water conservation to address water demand issues. The Basin Study notes that residential indoor and outdoor landscaping water conservation measures offer the greatest potential for savings. Conservation measures within these two categories represent almost 80 percent of the total estimated M&I water conservation potential. It also identifies landscape water efficiency as one of the most cost-intensive measures. The reduction in demand due to outdoor conservation was based on the implementation of BMPS including conversion of turf to landscaping with lower water needs.

- Provide a detailed explanation of how the proposed WaterSMART Grant project would help implement the adaptation strategy identified in the Basin Study.

The California Friendly Turf Replacement Incentive Program – Phase 2 implements M&I water conservation identified in the study's four adaptation strategies. Specifically, the program implements an outdoor water conservation measure. The program will reduce outdoor water use by replacing irrigated turfgrass with more climate-appropriate landscapes that use drought tolerant plants and minimize run-off through permeable surfaces. The program will help reduce demand and lessen the projected long-term imbalance with supply.

- Fully describe any other benefits to water supply sustainability that are not described elsewhere in your proposal that will result from this WaterSMART Grant project, for example, if the project will result in further collaboration among Basin Study partners, or demonstrate a new or innovative approach, among other benefits.

The California Friendly Turf Replacement Incentive Program – Phase 2 provides opportunities to collaborate with municipal water service providers in other Colorado River Basin states on landscape program evaluations and planning. The Study recommends that a workgroup be established on municipal conservation to identify existing programs, projects, and policies applied to municipal sector conservation and the distribution of those programs across water users throughout the Study Area. Per the Study, the workgroup's "objectives will include focusing on water use efficiency at a local level, the application of approaches appropriate for different locations and regions, and exploring innovative and cost-effective ways to encourage increased water use efficiency and reuse opportunities with the goal of recommending the implementation of solutions resulting in cost-effective water savings and reuse." Metropolitan will be able to bring more valuable input to this effort with the experience and program performance data gained during Phase 2 of the turf replacement program. This will improve the outcome of collaborative efforts with the other Basin Study partners.

(2) Points may be awarded for projects that will help to expedite future on-farm irrigation improvements, including future on farm improvements that may be eligible for NRCS funding. Please address the following:

- Include a detailed listing of the fields and acreage that may be improved in the future.
- Describe in detail the on-farm improvements that can be made as a result of this project. Include discussion of any planned or ongoing efforts by farmers/ranchers that receive water from the applicant.
- Provide a detailed explanation of how the proposed WaterSMART Grant project would help to expedite such on-farm efficiency improvements.

- Fully describe the on-farm water conservation or water use efficiency benefits that would result from the enabled on-farm component of this project. Estimate the potential on-farm water savings that could result in acre-feet per year. Include support or backup documentation for any calculations or assumptions.
- Projects that include significant on-farm irrigation improvements should demonstrate the eligibility, commitment, and number or percentage of shareholders who plan to participate in any available NRCS funding programs. Applicants should provide letters of intent from farmers/ranchers in the affected project areas.
- Describe the extent to which this project complements an existing or newly awarded AWEP project.

Note: On-farm water conservation improvements that complement the water delivery improvement projects selected through this FOA may be considered for NRCS funding and technical assistance in FY 2013 to the extent such assistance is available. Complementing NRCS Farm Bill programs include the Environmental Quality Incentive Program (EQIP) and Agricultural Water Enhancement Program (AWEP), which are the primary programs that address water quantity and water quality conservation practices. For more information, including application deadlines and a description of available funding, please contact your local NRCS office or visit <www.nrcs.usda.gov>for further contact information in your area.

Not applicable.

*(3) Points may be awarded for projects that include **other benefits** to water supply sustainability.*

Projects that do not address a need/adaptation strategy identified in a Basin Study or do not help expedite future on-farm irrigation improvements, may receive maximum points under this criterion by thoroughly explaining additional project benefits. Please provide sufficient explanation of the additional expected project benefits and their significance. Additional project benefits may include, but are not limited to, the following:

- Will the project make water available to address a specific concern? For example:
  i. Will the project address water supply shortages due to climate variability and/or heightened competition for finite water supplies (e.g., population growth or drought)? Is the river, aquifer or other source of supply over-allocated?

The California Friendly Turf Replacement Incentive Program – Phase 2 will help the region achieve the water savings necessary to avoid future water supply shortages. Metropolitan's 2010 Integrated Water Resources Plan identifies the need for new annual water savings of 580,000 AF by 2020 to meet dry year demands. This region faces ongoing challenges that significantly impact water supply:

- Population and economic growth are key demand uncertainties. A robust economy could cause increased demands in the future.
- Climate change and changes in weather patterns could significantly affect water supply reliability.
- The recent drought on the Colorado River was more severe than any drought measured in the 20th century, and the time needed for recovery is unknown.
- The "Colorado River Basin Water Supply and Demand Study" (December 2012) projects a long-term imbalance in future supply and demand of about 3.2 million acre-feet by 2060 due to projected growth and impacts of climate change.
- The presence of Quagga mussels in the Colorado River Aqueduct reduces operational flexibility.
- Salt and concentrate balance from a variety of sources may impact the long-term operation of local groundwater basins.
- A number of stressors ranging from invasive species to water diversions to wastewater discharges have contributed to the decline of the Bay-Delta ecosystem, triggering a wave of litigation and pumping restrictions that have dramatically altered Metropolitan's water supplies. Pumping restrictions exist for 9 out of every 12 months in the year. The result is a loss of approximately 30 percent in an average year, compared to 2005.

ii. Will the project market water to other users? If so, what is the significance of this (e.g., does this help stretch water supplies in a water-short basin)?

Water conserved as a result of the Phase 2 Program could support existing water markets for Colorado River, State Water Project, and Central Valley Project contractors. This region is dependent on imported water to meet M&I demand; reduced demand will provide flexibility for participating in water markets when transfer and storage opportunities are advantageous to the region and improve the management of water across the state.

iii. Will the project make additional water available for Indian tribes?

The Phase 2 Program will reduce demand for imported supplies and thereby support the amount of water available through water markets and transfers in the Colorado River, State Water Project, and Central Valley Project systems. These supplies will be available to Indian tribes through water markets.

iv. Will the project help to address an issue that could potentially result in an interruption to the water supply if unresolved? (e.g., will the project benefit an endangered species by maintaining an adequate water supply)? Are there endangered species within the basin or other factors that may lead to heightened competition for available water supplies among multiple water uses?

The Phase 2 Program improves management of local supplies and reduces reliance on imported supplies provided through the Colorado River and Bay-Delta. Both sources support critical habitat for federally listed endangered and threatened species.

v. Will the project generally make more water available in the water basin where the proposed work is located?

By reducing consumptive demand, particularly during warmer months, the Phase 2 Program would make more water available within Metropolitan's service area to ensure water supply reliability to meet future demand.

- Does the project promote and encourage collaboration among parties?

The Phase 2 Program will provide funding to expand turf replacement programs within Metropolitan's service area. This will encourage continued collaboration between Metropolitan, member and retail agencies, and Reclamation. Through monthly meetings convened by Metropolitan, these agencies regularly share information to increase technical capacity and program implementation strategies within the region. The program will also promote and encourage further collaboration between agencies, including the Basin Study partners, for education and design resources, and best practices for implementation. It will encourage collaboration to evaluate program benefits that move beyond water saving devices to holistic approaches that seek to change norms. Lastly, it will encourage collaboration with watershed, water quality, and stormwater organizations as turf replacement provides additional benefits that support their interests.

i. Is there widespread support for the project?

Metropolitan's member agencies support the continuation of the California Friendly Turf Replacement Program. Currently, over 100 agencies are participating in Phase 1 and have requested that Metropolitan pursue additional grant funding to sustain program momentum. In

addition, the program is supported by watershed groups, including the Council for Watershed Health. Several letters of support are included with this application.

ii. What is the significance of the collaboration/support?

The collaboration among agencies on landscape conservation programs is essential to long-term, sustained reductions in outdoor water use. Transforming landscape norms requires a region-wide sustained effort with common messaging and broad availability of programs. Regional collaboration between Metropolitan, member and retail agencies, and Reclamation provides the foundation for this effort.

iii. Will the project help to prevent a water-related crisis or conflict?

Per Metropolitan's 2010 Integrated Water Resources Plan, the region will need 580,000 AF of new annual water savings by 2020 to meet dry year demands. The program will reduce per capita demand and therefore help avoid water-related conflicts within the region. In 2010, Metropolitan implemented measures in its Water Supply Allocation Plan due to constrained water supply conditions and increasing reliance on stored supplies. As a result, member agencies updated and enforced conservation ordinances with some implementing conservation-based retail rate structures. The project provides an opportunity for agencies to continue to work together on regional water management issues.

iv. Is there frequently tension or litigation over water in the basin?

The California Friendly Turf Replacement Program – Phase 2 will reduce consumptive demand, particularly during warmer months. This would make more water available within Metropolitan's service area to ensure water supply reliability to meet future demand. It would support the orderly implementation of Metropolitan's Water Supply Allocation Plan during periods of supply shortage. This would avoid tension or litigation over water supplies within the basin.

v. Is the possibility of future water conservation improvements by other water users enhanced by completion of this project?

The California Friendly Turf Replacement Program – Phase 2 increases the opportunity for other landscape water use efficiency projects implemented by member agencies and retail agencies. Phase 2 will help continue the transformation of landscape norms within Southern California and encourage participation in other programs.

- Will the project increase awareness of water and/or energy conservation and efficiency efforts?

The California Friendly Turf Replacement Incentive Program – Phase 2 will increase the number of examples of water efficient landscapes within communities throughout Metropolitan's service area. Outreach conducted for local programs will increase awareness of the region's water supply challenges and the need for increased water use efficiency. Metropolitan will continue to partner with energy utilities to help increase awareness of the energy efficiency that results from water conservation.

i. Will the project serve as an example of water and/or energy conservation and efficiency within a community?

Replacing irrigated turfgrass with California Friendly landscapes will publically demonstrate outdoor water use efficiency and encourage similar change in other landscapes.

ii. Will the project increase the capability of future water conservation or energy efficiency efforts for use by others?

Turf replacement is an increasingly important conservation strategy within Metropolitan's service area. The California Friendly Turf Replacement Incentive Program – Phase 2 will broaden the availability of these programs. The project evaluation documenting implementation methods, issues, and results will increase the technical capability of other agencies considering turf removal programs.

iii. Does the project integrate water and energy components?

The California Friendly Turf Replacement Incentive Program – Phase 2 integrates water and energy components. By conserving water with California Friendly landscapes, it improves management of local water supplies and reduces reliance on imported supplies. Energy efficiency is gained by reduced energy demands for pumping, treatment, and delivery of water for landscape irrigation.

Evaluation Criterion F: Implementation and Results (10 points)

*Up to **10 points** may be awarded for the following:*

Subcriterion No. F.1—Project Planning

Points may be awarded for proposals with planning efforts that provide support for the proposed project.

Does the project have a Water Conservation Plan, System Optimization Review (SOR), and/or district or geographic area drought contingency plans in place? Does the project relate/have a nexus to an adaptation strategy developed as part of a WaterSMART Basin Study)? Please self-certify, or provide copies of these plans where appropriate, to verify that such a plan is in place.

Provide the following information regarding project planning:

(1) Identify any district-wide, or system-wide, planning that provides support for the proposed project. This could include a Water Conservation Plan, SOR, Basin Study, or other planning efforts done to determine the priority of this project in relation to other potential projects.

Metropolitan has prepared and adopted several regional resource management plans that address drought contingencies and the need for conservation to ensure water supply reliability:

- Bureau of Reclamation Municipal and Industrial Water Conservation Plan, submitted November 2010 and updated November 2012
- Regional Urban Water Management Plan, adopted November 2010
- Integrated Water Resources Plan, adopted October 2010
- Water Supply Allocation Plan, adopted February 2008
- Long-Term Conservation Plan, adopted August 2011

Metropolitan's 2010 Integrated Water Resources Plan identifies the need for an additional 580,000 AF of new annual water savings by 2020 to ensure reliable water supplies for the region. Achieving this level of savings will require transforming markets as well as social and landscape norms. Metropolitan's Long-Term Conservation Plan provides a framework and strategies to

help achieve this goal. Landscape water use is identified as a primary opportunity for savings with turf replacement a key strategy for the region.

Metropolitan's service area is included in the "Colorado River Basin Water Supply and Demand Study" (December 2012) (Basin Study), prepared under Reclamation's Basin Study Program as part of the Department of the Interior WaterSMART program. The Basin Study projects a long-term imbalance in future supply and demand of about 3.2 million acre-feet by 2060 due to projected growth and impacts of climate change. The study identifies four portfolios of various representative options to address water supply and demand. Each of the portfolios represents a different potential adaptation strategy. Increased M&I water conservation is included in each of the strategies, with potential yield of 600,000 acre-feet per year by 2035 and 1 million acre-feet by 2060.

The California Friendly Turf Replacement Incentive Program – Phase 2 implements M&I water conservation as described in the Basin Study's four adaptation strategies. The Basin Study notes that residential indoor and outdoor landscaping water conservation measures areas offer the greatest potential for savings. Conservation measures within these two categories represent almost 80 percent of the total estimated M&I water conservation potential. It also identifies landscape water efficiency as one of the most cost-intensive measures. The reduction in demand due to outdoor conservation was based on the implementation of BMPS including conversion of turf to landscaping with lower water needs.

(2) Identify and describe any engineering or design work performed specifically in support of the proposed project.

Metropolitan completed Phase 1 of the California Friendly Turf Replacement Incentive Program with the replacement of approximately 2,700,000 square feet of turf. In Phase 1 member agencies have been able to test implementation and share best practices with other agencies. In addition, websites, guidelines, and resources for design and education have been developed.

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

The California Friendly Turf Replacement Incentive Program – Phase 2 contributes to the goals of the following state and regional water plans that call for increased urban water conservation: 2009 California Water Plan Update; California Water Conservation Act of 2009 requiring a 20 percent reduction in per capita water use by 2020; Metropolitan's 2010 Integrated Water Resources Plan; Metropolitan's Regional Urban Water Management Plan; Metropolitan's Long-Term Conservation Plan; and the Colorado River Basin Water Supply and Demand Study. By reducing consumptive use for landscape irrigation and encouraging the transition to California Friendly landscapes, the project implements several features of these plans:

- Improve urban water use efficiency
- Reduce demand for landscape irrigation
- Reduce peak demand water use when reservoirs are low
- Reduce gallons per capita per day
- Encourage property owners and landscape managers to increase water use efficiency in large landscapes

- Create new annual water savings through conservation and water recycling to meet dry year demands within the Metropolitan service area

Subcriterion No. F.2—Readiness to Proceed

Points may be awarded based upon the extent to which the proposed project is capable of proceeding upon entering into a financial assistance agreement.

Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work, including major tasks, milestones, and dates. ***(Please note, under no circumstances may an applicant begin any ground-disturbing activities – including grading, clearing, and other preliminary activities – on a project before environmental compliance is complete and Reclamation explicitly authorizes work to proceed.)***

Please explain any permits that will be required, along with the process for obtaining such permits.

Rapid deployment of grant funds is possible because momentum is already established and contracts and program administrative elements are already in place. Agencies are implementing Phase 1 of the California Friendly Turf Replacement Incentive Program, and the transition to Phase 2 will be seamless. Several agencies have developed web pages for their turf replacement programs, including tools and resources to assist participants (i.e., Long Beach Water Department's Lawn to Garden program: www.lblawntogarden.com). Other agencies are using Metropolitan's regional SoCalWaterSmart website that includes turf replacement program pages for residential and commercial customers. No delays are expected to result from environmental compliance.

Metropolitan's scope of work for the California Friendly Turf Replacement Incentive Program – Phase 2 will include the following tasks and deliverables:

	Task	**Month Due** (from authorization to proceed)	**Deliverables**
1	Issue addendum to member agency agreements to incorporate grant requirements	1	Executed addendum
2	Provide outreach to member agencies to encourage participation, explain program requirements and administration	1	Summary of outreach efforts
3	Execute funding requests for participating member agencies	2	List of participating agencies, funding levels, incentive amounts
4	Provide agencies with information to acknowledge Reclamation funding on program materials	2	Information to participating agencies
5	Collect participating agency program materials, such as outreach and education collateral materials, applications and guidelines	4	Summary of retail programs, copies of program materials

Task		**Month Due** (from authorization to proceed)	**Deliverables**
6	Administer program, monitor performance, collect sample data	Ongoing	Program tracking database
7	Prepare semiannual financial and program performance reports	6, 12, 18, 24	SF 425 and interim performance report
8	Work with participating agencies on program assessment and evaluation	12, 24	Data collection and analysis
9	Prepare final financial and program evaluation report	24	SF 425 and final program performance report

Please explain any permits that will be required, along with the process for obtaining such permits.

No permits are required for program implementation. Some local jurisdictions may require permits for individual projects depending on local codes and the extent of landscape renovation. Participants will be responsible for obtaining necessary permits prior to initiating landscape projects.

Subcriterion No. F.3:

PERFORMANCE MEASURES

Points may be awarded based on the description and development of performance measures to quantify actual project benefits upon completion of the project.

Provide a brief summary describing the performance measure that will be used to quantify actual benefits upon completion of the project (e.g., water saved, marketed, or better managed, or energy saved). For more information calculating performance measure, see Section VIII.A.1. "FY2013 WaterSMART Water and Energy Efficiency Grants: Performance Measures".

Note: All WaterSMART Grant applicants are required to propose a "performance measure" (a method of quantifying the actual benefits of their project once it is completed). A provision will be included in all assistance agreements with WaterSMART Grant recipients describing the performance measure, and requiring the recipient to quantify the actual project benefits in their final report to Reclamation upon completion of the project. If information regarding project benefits is not available immediately upon completion of the project, the financial assistance agreement may be modified to remain open until such information is available and until a Final Report is submitted. Quantification of project benefits is an important means to determine the relative effectiveness of various water management efforts, as well as the overall effectiveness of WaterSMART Grants.

All prospective project requests are reviewed prior to applicants being accepted into the program. Participating agencies ensure eligibility and compliance with program terms and conditions by reviewing program applications and site photos, and/or conducting pre-inspections. Applicants receive notice to proceed once the application review is complete and the site is deemed eligible.

Data will be collected for a sample of sites to determine general characteristics of participants in the program. Pre and post conversion water use history and site data for the sample sites will be used to estimate program water savings.

Landscape irrigation occurs year-round within Metropolitan's service area. Pre-project baseline data will be estimated using dedicated meter data and theoretical irrigation requirements:

- **Dedicated meter data:** Historical water use data (up to 10 years) for a representative sample of project sites served by dedicated irrigation meters will be used to determine baseline water use for turf irrigation. Typically these are large landscape sites, such as homeowner associations, parks, golf courses, schools, and other institutional facilities. The metered water use will be divided by the square footage of irrigated area and the number of years in the data set, providing average annual water demand per square foot of turf.

- **Theoretical irrigation requirement:** For smaller projects that do not have dedicated irrigation meters, pre-project water use will be determined by using reference evapotranspiration (ETo) values from the California Irrigation Management Information System (CIMIS) weather stations within Metropolitan's service area. The following formula will be used:

$$ETWU = \frac{ETo \times 0.62 \times PF \times PA}{IE}$$

ETWU = Estimated Total Water Use per year (gallons)

ETo = Reference Evapotranspiration (inches)

- Reference ETo for Metropolitan's service area = 50.2 inches/yr:
  - Metropolitan has eight reference evapotranspiration zones within its service area ranging from 32.9 to 62.5 inches/yr
  - The area of each zone within Metropolitan's service area was calculated using GIS
  - The reference evapotranspiration for Metropolitan's service area was calculated based on the weighted average of the zone areas

PF = Plant factor

- Pre-conversion - Irrigation requirements for cool season turf = 80% ETo[19]
- Post-conversion - Plant factor for moderate water use plants = 0.4 – 0.6[20]; assume lower end due to focus on California Friendly plants, local program requirements, and participants' interest in saving water

PA = Project Area, square feet of irrigated turf to be removed

0.62 = Conversion Factor

IE = defined as "the measurement of the amount of water beneficially used divided by the amount of water applied"[21]

- Pre-conversion = 0.4; assume 0.5 for inefficient system design and condition plus further inefficiency of 0.1 due to improper controller settings that result in overwatering (typical observation within Metropolitan's service area)

[19] University of California Cooperative Extension and California Department of Water Resources. A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California. 2000
[20] California Model Water Efficient Landscape Ordinance. September 2009
[21] Ibid.

- Post-conversion = 0.8; average based on range of requirements for local programs (including capping existing systems, elimination of overhead spray, and installation of drip systems); and participants' interest in saving water

Post-project methods for quantifying benefits of turf removal projects will include verifying the amount of turf removed at project sites. This will be accomplished through a combination of project inspections, site photos, and geographic information systems technology with aerial photos. The preliminary estimated water savings will be calculated based on area of turf removed and any known irrigation changes compared to the estimated pre-project turf irrigation from dedicated meter data or the theoretical irrigation requirement. The total savings for Phase 2 will be calculated as the summation of water savings for all participating sites, determined through dedicated meter data and the theoretical irrigation requirement for the sample sites.

Data will be normalized for weather if conditions are significantly different for pre- and post-data evaluation periods. The Southern Nevada Water Authority 2005 Xeriscape Conversion Study found significant annual savings in Year 1 following conversion. The Inland Empire Utilities Agency WaterWise Residential Landscape Rebate Program Evaluation noted that it would be best to allow at least one year following installation before analyzing water use data. With project completion by September 2016, some conversions will have less than 12 months of post installation data. The analysis will consider this and other data limitations.

Evaluation Criterion G: Additional Non-Federal Funding (4 points)

*Up to **4 points** may be awarded to proposals that provide non-Federal funding in excess of 50 percent of the project costs. State the percentage of non-Federal funding provided.*

$$\frac{\text{Non-Federal Funding}}{\text{Total Project Cost}}$$

Metropolitan is proposing a 77 percent non-federal cost share:

$$\frac{\$300{,}000 \text{ non-Federal funding}}{\$1{,}300{,}000 \text{ Total Project Cost}} = 77\%$$

Evaluation Criterion H: Connection to Reclamation Project Activities (4 points)

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

(1) How is the proposed project connected to Reclamation project activities?

Metropolitan imports water from the Colorado River through the Colorado River Aqueduct and from the Bay-Delta through the State Water Project. This project will improve management of local water supplies and reduce reliance on imported supplies to meet increased future demand. This will support Reclamation's projects and activities managing the water resources of the Colorado River Basin and Central Valley Project. The project will also support Reclamation's water use efficiency efforts within the Lower Colorado Region, including implementation of M&I conservation included in the adaptive strategies in the Colorado River Basin Water Supply and Demand Study.

(2) Does the applicant receive Reclamation project water?

Yes – Metropolitan holds entitlements of 1,400,000 AF per year from the Colorado River.

(3) Is the project on Reclamation project lands or involving Reclamation facilities?

No – the project will fund landscape renovations on private and public property within Metropolitan's service area.

(4) Is the project in the same basin as a Reclamation project or activity?

Yes – the project will be implemented within the area covered by Reclamation's Southern California Area Planning Program. The project is also within the area covered by the "Colorado River Basin Water Supply and Demand Study" (December 2012), prepared under Reclamation's Basin Study Program as part of the Department of the Interior WaterSMART program.

(5) Will the proposed work contribute water to a basin where a Reclamation project is located?

Yes – the project will improve management of local water supplies and reduce reliance on imported supplies from the Colorado River and Central Valley Project systems to meet future water demands.

ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

To allow Reclamation to assess the probable environmental and cultural resources impacts and costs associated with each application, all applicants must respond to 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. Additional information about environmental compliance is provided in Section IV.D.4. "Project Budget," under the discussion of "Environmental and Regulatory Compliance Costs," and in Section VIII.B., "Overview of Environmental and Cultural Resources Compliance Requirements."

Note: applicants proposing a Funding Group II project must address the environmental and cultural resources compliance questions for their entire project, not just the first one-year phase.

If you have any questions, please contact your regional or area Reclamation office (see <www.usbr.gov/main/regions.html>) with questions regarding ESA compliance issues. You may also contact Mr. Dean Marrone, WaterSMART Program Coordinator, at 303-445-3577, for further information.

Note, if mitigation is required to lessen environmental impacts, the applicant may, at Reclamation's discretion, be required to report on progress and completion of these commitments. Reclamation will coordinate with the applicant to establish reporting requirements and intervals accordingly.

Under no circumstances may an applicant begin any ground-disturbing activities (including grading, clearing, and other preliminary activities) on a project before environmental compliance is complete and Reclamation explicitly authorizes work to proceed. This pertains to all components of the proposed project, including those that are part of the applicant's non-Federal cost chare. Reclamation will provide a successful applicant with information once environmental compliance is complete. An applicant that proceeds before environmental compliance is complete may risk forfeiting Reclamation funding under this FOA.

The California Friendly Turf Replacement Incentive Program – Phase 2 will provide funding to expand the availability of turf replacement programs for existing landscapes. As such, implementation will occur on developed land with only temporary localized impacts.

(1) Will the 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 project will be implemented through renovations of existing landscapes at individual sites. Impacts will be localized and no affects are anticipated on air, water, or animal habitat in the project area. Local agencies will identify sites that have potential impacts and will not implement turf replacement.

(2) 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?

The project will renovate existing landscapes within developed area. No threatened or endangered species, or designated critical habitat, are anticipated at participating sites. Sites with known impacts will not be considered for turf replacement.

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

The project will be implemented through renovations of existing landscapes within developed residential and commercial areas. No impacts to wetlands or surface waters are anticipated.

(4) When was the water delivery system constructed?

Construction of Metropolitan's water delivery system began in 1933 and was completed in 1939. The system became operational in 1941.

(5) Will the 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.

Not applicable to project.

(6) 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.

The program will provide incentives for landscape renovations within the service areas of participating member agencies, which may include structures and features that are listed or potentially eligible for listing on the National Register of Historic Places. However, due to the nature of the landscape renovations, adverse impacts to historic properties are not expected.

(7) Are there any known archeological sites in the proposed project area?

The program will provide incentives for landscape renovations within the service areas of participating member agencies, which may include known archeological sites. However, due to the nature of the renovations of existing landscapes, adverse impacts to archeological sites are not expected.

(8) Will the project have a disproportionately high and adverse effect on low income or minority populations?

No – the program will provide benefits to low income and minority populations through broader program availability and improved water supply reliability. Low income and minority populations served by participating agencies will be eligible to participate.

(9) Will the project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?

No – the program will provide incentives for landscape renovations within the service areas of participating member agencies. It is not expected to impact Indian sacred sites or tribal lands.

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

No –Participants will be encouraged to avoid the use of invasive species. The California Invasive Plant Council is identified as a resource in the program materials. (http://www.cal-ipc.org/landscaping/dpp/pdf/SoCalPrintable.pdf)

REQUIRED PERMITS OR APPROVALS

Applicants must state in the application whether any permits or approvals are required and explain the plan for obtaining such permits or approvals.

Applicants proposing renewable energy components to Federal facilities should note that some power projects may require FERC permitting or a Reclamation Lease of Power Privilege. To complete a renewable energy project within the time frame required of this FOA, it is recommended that an applicant has commenced the necessary permitting process prior to applying. To discuss questions related to projects that propose renewable energy development, please contact Mr. Dean Marrone at 303-445-3577.

Note that improvements to Federal facilities that are implemented through any project awarded funding through this FOA must comply with additional requirements. The Federal government will continue to hold title to the Federal facility and any improvement that is integral to the existing operations of that facility. Please see Section III.H.1. Reclamation may also require additional 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 Code of Federal Regulations (CFR) §429, and that the development will not impact or impair project operations or efficiency.

No permits are required for program implementation. Some local jurisdictions may require permits for individual projects depending on local codes and the extent of landscape renovation. Participants will be responsible for obtaining necessary permits prior to initiating landscape projects.

LETTERS OF PROJECT SUPPORT

Please see attached letters of support (not in page count).

OFFICIAL RESOLUTION

Include an official resolution adopted by the applicant's board of directors or governing body, or for state government entities, an official authorized to commit the applicant to the financial and legal obligations associated with receipt of WaterSMART Grant financial assistance, verifying:

- The identity of the official with legal authority to enter into agreement
- The board of directors, governing body, or appropriate official who has reviewed and supports the application submitted
- The capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan
- That the applicant will work with Reclamation to meet established deadlines for entering into a cooperative agreement

An official resolution meeting the requirements set forth above is mandatory. If the applicant is unable to submit the official resolution by the application deadline because of the timing of board meetings or other justifiable reasons, the official resolution may be submitted up to 30 days after the application deadline.

Metropolitan's Board approval of the resolution is expected on February 11, 2014.

PROJECT BUDGET

The project budget includes: (1) Funding Plan and Letters of Commitment, (2) Budget Proposal, (3) Budget Narrative and (4) Budget Form.

FUNDING PLAN AND LETTERS OF COMMITMENT

Describe how the non-Reclamation share of project costs will be obtained. Reclamation will use this information in making a determination of financial capability.

Project funding provided by a source other than the applicant shall be supported with letters of commitment from these additional sources. This is a **mandatory requirement**. Letters of commitment shall identify the following elements:

(1) The amount of funding commitment
(2) The date the funds will be available to the applicant
(3) Any time constraints on the availability of funds
(4) Any other contingencies associated with the funding commitment

Commitment letters from third party funding sources should be submitted with your project application. If commitment letters are not available at the time of the application submission, please provide a timeline for submission of all commitment letters. Cost share funding from sources outside the applicant's organization (e.g., loans or state grants), should be secured and available to the applicant prior to award.

Reclamation will not make funds available for a WaterSMART Grants project until the recipient has secured non-Federal cost-share. Reclamation will execute a financial assistance agreement once non-Federal funding has been secured or Reclamation determines that there is sufficient evidence and likelihood that non-Federal funds will be available to the applicant subsequent to executing the agreement.

Note: Applicants proposing a Funding Group II project are not required to have non-Federal cost share funding secured for the entire project at the time of award. Funding Group II applicants must demonstrate sufficient evidence that non-Federal cost-share for the first year of the project will be available by the start of that phase and must describe a plan and schedule for securing non-Federal funding for subsequent years of the project.

The funding plan must include all project costs, as follows:

(1) How you will make your contribution to the cost share requirement, such as monetary and/or in-kind contributions and source funds contributed by the applicant (e.g., reserve account, tax revenue, and/or assessments).

Metropolitan's cost share contribution will be monetary with funds provided through the rates charged on each acre foot of water delivered.

(2) Describe any in-kind costs incurred before the anticipated project start date that you seek to include as project costs. Include:
(a) What project expenses have been incurred?
(b) How they benefitted the project
(c) The amount of the expense
(d) The date of cost incurrence

No in-kind costs incurred before the anticipated project start date are included.

(3) Provide the identity and amount of funding to be provided by funding partners, as well as the required letters of commitment.

The California Friendly Turf Replacement Incentive Program – Phase 2 will be funded by Metropolitan, Reclamation, and participating member agencies. Local agencies will have the option to provide additional funding to increase the incentive or expand the program, but it is not required.

(4) Describe any funding requested or received from other Federal partners. Note: Other sources of Federal funding may not be counted towards the applicant's 50 percent cost share unless otherwise allowed by statute.

None.

(5) Describe any pending funding requests that have not yet been approved, and explain how the project will be affected if such funding is denied.

There are no other pending funding requests for this project.

Please include the following chart (table 1) to summarize your non-Federal and other Federal funding sources. Denote in-kind contributions with an asterisk (*). Please ensure that the total Federal funding (Reclamation and all other Federal sources) does not exceed 50 percent of the total estimated project cost.

Table 1. Summary of non-Federal and Federal funding sources.

Funding Sources	Funding Amount
Non-Federal Entities	
1. Metropolitan Water District of Southern California, member agencies	$1,000,000
Non-Federal Subtotal:	$300,000
Other Federal Entities	
1. None	
Other Federal Subtotal:	$0
Requested Reclamation Funding:	$300,000
Total Project Funding:	$1,300,000

For applicants submitting a proposal under Funding Group II, please include the following chart (table 2) to summarize your Federal funding request by year.

Table 2. Funding Group I Funding Request

Funding Group I Request		
	Year 1 (FY 2014)	Year 2 (FY 2015)
Funding Requested	$150,000	$150,000

BUDGET PROPOSAL

The project budget shall include detailed information on the categories listed below and must clearly identify all project costs. Unit costs shall be provided for all budget items including the cost of work to be provided by contractors. Additionally, applicants shall include a narrative description of the items included in the project budget, including the value of in-kind contributions of goods and services provided to complete the project. It is strongly advised that applicants use the budget proposal format shown below on tables 3 and 4 or a similar format that provides this information.

Table 3. Funding Sources

Funding Sources	Percent of Total Project Cost	Total Cost by Source
Recipient Funding	77%	$1,000,000
Reclamation Funding	23%	$300,000
Other Federal Funding	0	0
Totals	100%	$1,300,000

Table 4. Budget Proposal

	Computation		Quantity Type	Total Cost
Budget Item Description	**$/unit**	**Quantity**		
Other				
Incentives	$1.00	1,299,000	Sq foot	$1,299,000
Environmental Compliance	$1,000	1	Review	$1,000
Total Project Costs				**$1,300,000**

BUDGET NARRATIVE

Submission of a budget narrative is mandatory. An award will not be made to any applicant who fails to fully disclose this information. The budget narrative provides a discussion of, or explanation for, items included in the budget proposal. Include the value of in-kind contributions of goods and services and sources of funds provided to complete the project. The types of information to describe in the narrative include, but are not limited, to those listed in the following subsections.

The California Friendly Turf Replacement Incentive Program – Phase 2 will provide funding to expand turf replacement programs within Metropolitan's service area. With a cost share of up to $0.23 per square foot from Reclamation and a match of up to $0.77 from Metropolitan, member agencies, and other non-federal sources, a total of $1,300,000 in incentives (up to $1.00 per square foot) will be offered through regional and locally implemented programs. Local agencies will have the option to increase this incentive, leveraging federal, regional, and local funds.

Salaries and Wages

Indicate program manager and other key personnel by name and title. Other personnel may be indicated by title alone. For all positions, indicate salaries and wages, estimated hours or percent of time, and rate of compensation proposed. The labor rates should identify the direct labor rate separate from the fringe rate or fringe cost for each category. All labor estimates, including any proposed subcontractors, shall be allocated to specific tasks as outlined in the recipient's technical project description. Labor rates and proposed hours shall be displayed for each task.

Clearly identify any proposed salary increases and the effective date.

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

The program will be managed by Kathy Ramos, Assoc. Resource Specialist. She will be assisted by Alice Webb-Cole, Senior Resource Specialist, and Andrew Hui, Regional Supply Unit Manager. Program administration will be provided through Metropolitan's regular assistance to member agencies. No salary and wage expenses are proposed.

Fringe Benefits

Indicate rates/amounts, what costs are included in this category, and the basis of the rate computations. Indicate whether these rates are used for application purposes only or whether they are fixed or provisional rates for billing purposes. Federally approved rate agreements are acceptable for compliance with this item.

Program administration will be provided through Metropolitan's regular assistance to member agencies. No fringe benefit expenses are proposed.

Travel

Include purpose of trip, destination, number of persons traveling, length of stay, and all travel costs including airfare (basis for rate used), per diem, lodging, and miscellaneous travel expenses. For local travel, include mileage and rate of compensation.

Program administration, including travel for program monitoring, will be provided through Metropolitan's regular assistance to member agencies. No travel expenses are proposed.

Equipment

Itemize costs of all equipment having a value of over $500 and include information as to the need for this equipment, as well as how the equipment was priced if being purchased for the agreement. If equipment is being rented, specify the number of hours and the hourly rate. Local rental rates are only accepted for equipment actually being rented or leased for the project. If equipment currently owned by the applicant is proposed for use under the proposed project, and the cost to use that equipment is being included in the budget as in-kind cost share, provide the rates and hours for each piece of equipment owned and budgeted. These should be ownership rates developed by the recipient for each piece of equipment. If these rates are not available, the U.S. Army Corp of Engineer's recommended equipment rates for the region are acceptable. Blue book, Federal Emergency Management Agency (FEMA), and other data bases should not be used.

Not applicable to this project.

Materials and Supplies

Itemize supplies by major category, unit price, quantity, and purpose, such as whether the items are needed for office use, research, or construction. Identify how these costs were estimated (i.e., quotes, past experience, engineering estimates or other methodology).

Not applicable to this project.

Contractual

Identify all work that will be accomplished by subrecipients, consultants, or contractors, including a breakdown of all tasks to be completed, and a detailed budget estimate of time, rates, supplies, and materials that will be required for each task. If a subrecipient, consultant, or contractor is proposed and approved at time of award, no other approvals will be required. Any changes or additions will require a request for approval. Identify how the budgeted costs for subrecipients, consultants, or contractors were determined to be fair and reasonable.

No subrecipients, consultants, or contractors are proposed for implementation of this program. Program funding will be used to provide turf replacement incentives for regional and locally-implemented turf replacement programs. The costs for local program implementation are not included.

Environmental and Regulatory Compliance Costs

Applicants must include a line item in their budget to cover environmental compliance costs. "Environmental compliance costs" refer to costs incurred by Reclamation or the recipient in complying with environmental regulations applicable to a WaterSMART Grant, including costs associated with any required documentation of environmental compliance, analyses, permits, or approvals.

Applicable Federal environmental laws could include NEPA, ESA, NHPA, and the CWA, and other regulations depending on the project. Such costs may include, but are not limited to:

• The cost incurred by Reclamation to determine the level of environmental compliance required for the project

• The cost incurred by Reclamation, the recipient, or a consultant to prepare any necessary environmental compliance documents or reports

• The cost incurred by Reclamation to review any environmental compliance documents prepared by a consultant

• The cost incurred by the recipient in acquiring any required approvals or permits, or in implementing any required mitigation measures

The amount of the line item should be based on the actual expected environmental compliance costs for the project. However, the minimum amount budgeted for environmental compliance should be equal to at least 1-2 percent of the total project costs. If the amount budgeted is less than 1-2 percent of the total project costs, you must include a compelling explanation of why less than 1-2 percent was budgeted.

How environmental compliance activities will be performed (e.g., by Reclamation, the applicant, or a consultant) and how the environmental compliance funds will be spent, will be determined pursuant to subsequent agreement between Reclamation and the applicant. If any portion of the funds budgeted for environmental compliance is not required for compliance activities, such funds may be reallocated to the project, if appropriate.

The California Friendly Turf Replacement Incentive Program – Phase 2 will provide funding to expand the availability of turf replacement incentives for existing landscapes. As such, implementation will occur on developed land with localized impacts. Per the Department of Interior Departmental Manual (as codified in the Code of Federal Regulations), the following is an exclusion category: Part 516 DM 14.5 D(11) – Implementation of improved appearance and soil and moisture conservation programs where the impacts are localized.

The budget includes $1,000 for Reclamation's review and preparation of a categorical exclusion. This amount is based on Reclamation's budget for environmental review for the Sprinkler Nozzle Incentive Program grant executed in September 2012 (Agreement R12AP35351).

Reporting

Recipients are required to report on the status of their project on a regular basis. Failure to comply with reporting requirements may result in the recipient being removed from consideration for funding under future funding opportunities. Include a line item for reporting costs (including final project and evaluation costs). Please see Section VI.C. for information on types and frequency of reports required.

In accordance with Reclamation's requirements, Metropolitan will provide a program performance report and financial report (SF-425) on a semi-annual basis and upon completion. Metropolitan will also provide a program evaluation. Reporting and the program evaluation will

be prepared by staff as part of their regular responsibilities to administer Metropolitan's conservation programs. The costs are not included in the proposal.

Other

Any other expenses not included in the above categories shall be listed in this category, along with a description of the item and what it will be used for. No profit or fee will be allowed.

No other costs are included in the proposal.

Indirect Costs

Show the proposed rate, cost base, and proposed amount for allowable indirect costs based on the applicable OMB circular cost principles (see Section III.E., "Cost Sharing Requirement") for the recipient's organization. It is not acceptable to simply incorporate indirect rates within other direct cost line items.

If the recipient has separate rates for recovery of labor overhead and general and administrative costs, each rate shall be shown. The applicant should propose rates for evaluation purposes, which will be used as fixed or ceiling rates in any resulting award. Include a copy of any federally approved indirect cost rate agreement. If a federally approved indirect rate agreement is not available, provide supporting documentation for the rate. This can include a recent recommendation by a qualified certified public accountant (CPA) along with support for the rate calculation.

If you do not have a federally approved indirect cost rate agreement, or if unapproved rates are used, explain why, and include the computational basis for the indirect expense pool and corresponding allocation base for each rate. Information on "Preparing and Submitting Indirect Cost Proposals" is available from Interior, the National Business Center, and Indirect Cost Services, at <http://www.aqd.nbc.gov/services/ICS.aspx>.

No indirect costs are included in the proposal.

Total Costs

Indicate total amount of project costs, including the Federal and non-Federal cost-share amounts.

The total project cost is $1,300,000 with approximately $1,299,000 for incentives and $1,000 for environmental review. Metropolitan is proposing a 77/23 cost share with $1,000,000 from non-federal sources, including Metropolitan and member agencies, matched by $300,000 from Reclamation.

BUDGET FORM

In addition to the above-described budget information, the applicant must complete an SF-424A, Budget Information—Nonconstruction Programs, or an SF-424C, Budget Information—Construction Programs. These forms are available at <http://apply07.grants.gov/apply/FormLinks?family=15>.

SF-424A is attached.

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

6075 Kimball Ave, • Chino, CA 91708
P.O. Box 9020 • Chino, Hills, CA 91709
TEL (909) 993-1600 • FAX (909) 993-9000
www.ieua.org

January 13, 2014

U.S. Department of the Interior
Bureau of Reclamation
Acquisition Operations Group
Attn: Michelle Maher
Mail Code 84-27810
P.O. Box 25007
Denver, CO 80225

Dear Ms. Maher:

Support of Metropolitan Water District's WaterSMART Grant Application

The Inland Empire Utilities Agency supports the Metropolitan Water District of Southern California (Metropolitan) $300,000 grant application for the California Friendly Turf Replacement Program - Phase 2. This program would help conserve water within Metropolitan's service area by reducing one of the largest water uses, landscape irrigation. Turf grass is one of the most water intensive plants in landscapes. Approval of the WaterSMART grant would help replace approximately 1.3 million square feet of irrigated turf saving approximately 1,800 acre-feet of water and 4.9 million kilowatt hours over 10 years.

The Inland Empire Utilities Agency believes in the importance of this program to our region as we were one of the first agencies in the southern California area to implement a pilot turf removal program with great success. This program remains one of the most requested programs within our service area and funding of this proposal would allow us to again offer this program to our residents.

The Inland Empire Utilities Agency encourages your support and consideration of this program. If you have any questions, please contact Lisa Morgan-Perales of my staff at 909-993-1520 or via email at lperales@ieua.org.

Sincerely,

INLAND EMPIRE UTILITIES AGENCY

P. Joseph Grindstaff
General Manager

Water Smart – Thinking in Terms of Tomorrow

cc: Mr. Raymond Jay
Senior Resource Specialist
Metropolitan Water District of Southern California
Box 54153
Los Angeles, CA 90054-0153
rjay@mwdh2o.com

MUNICIPAL WATER DISTRICT OF ORANGE COUNTY

Street Address:
18700 Ward Street
Fountain Valley, California 92708

Mailing Address:
P.O. Box 20895
Fountain Valley, CA 92728-0895

(714) 963-3058
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January 13, 2014

U.S. Department of the Interior
Bureau of Reclamation
Acquisition Operations Group
Attn: Michelle Maher
Mail Code 84-27810
P.O. Box 25007
Denver, CO 80225

Support for Metropolitan Water District's WaterSMART Grant Application

Dear Ms. Maher:

The Municipal Water District of Orange County (MWDOC) supports the Metropolitan Water District of Southern California's (Metropolitan) $300,000 grant application for the California Friendly Turf Replacement Program - Phase 2. This program would help conserve water within the Metropolitan service area by reducing one of the largest water uses, landscape irrigation. Turf grass is one of the most water intensive plants in landscapes. Approval of the WaterSMART grant would help replace approximately 1.3 million square feet of irrigated turf, saving approximately 1,800 acre-feet of water and 4.9 million kilowatt hours over 10 years. This program represents an important next step in our overall program evolution.

MWDOC has exhausted indoor residential water savings opportunities and is now focusing on landscape water use efficiency. A turf replacement program is one of the most requested programs within our service area. Funding of this proposal would allow us to offer this program to our users and save up to 100% of the water use at participating sites.

MWDOC encourages your support and consideration for this project. If you have any questions, please contact me at (714) 593-5008 or via email at jberg@mwdoc.com.

Very truly yours,

Joseph M. Berg

Joseph M. Berg
Water Use Efficiency Programs Manager
Municipal Water District of Orange County

cc: Mr. Raymond Jay
Senior Resource Specialist
Metropolitan Water District of Southern California
Box 54153
Los Angeles, CA 90054-0153
rjay@mwdh2o.com

Long Beach Water Department
The Standard in Water Conservation &
Environmental Stewardship

January 13, 2014

KEVIN L. WATTIER, General Manager

U.S. Department of the Interior
Bureau of Reclamation
Acquisition Operations Group
Attn: Michelle Maher
Mail Code 84-27810
P.O. Box 25007
Denver, CO 80225

Dear Ms. Maher:

Support of Metropolitan Water District's WaterSMART Grant Application

Long Beach Water Department (LBWD) enthusiastically supports the Metropolitan Water District of Southern California (Metropolitan) $300,000 grant application for the California Friendly Turf Replacement Program - Phase 2. Metropolitan's service area is a semi-arid and arid region, where turf grass needs approximately four to six times the water of beautiful drought-friendly landscapes that thrive naturally in our dry region. Our region must transition to more water-conserving landscapes, and the best way to facilitate that transition is by incentivizing customers to voluntarily remove their grass lawns.

LBWD has been a leader in creating a new landscape norm, having incentivizing the removal of over 1,000,000 square feet of grass lawns in our service area. LBWD now offers our customers $3.00 per square foot of grass removed through our award-winning Lawn-to-Garden program. And, these projects are very successful: the typical Lawn-to-Garden project saves an amount of water equal to 25% of the water used at the average single-family home.

From our almost four years of managing turf-removal programs, we know the size of the rebate has a significant impact on the effectiveness of turf-removal programs. Approval of the WaterSMART grant would help replace approximately 2 million square feet of irrigated turf and save approximately 2,800 acre-feet of water over 10 years.

LBWD encourages your support for this project. If you have any questions, please contact Matthew Lyons of my staff at (562) 570-2315 or via email at matthew.lyons@lbwater.org.

Very truly yours,

Kevin L. Wattier
General Manager

cc: Mr. Raymond Jay
Senior Resource Specialist
Metropolitan Water District of Southern California
Box 54153
Los Angeles, CA 90054-0153
rjay@mwdh2o.com

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January 13, 2014

U.S. Department of the Interior
Bureau of Reclamation
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Attn: Michelle Maher
Mail Code 84-27810
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Denver, CO 80225

Dear Ms. Maher:

Support of Metropolitan Water District's WaterSMART Grant Application

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The Inland Empire Utilities Agency believes in the importance of this program to our region as we were one of the first agencies in the southern California area to implement a pilot turf removal program with great success. This program remains one of the most requested programs within our service area and funding of this proposal would allow us to again offer this program to our residents.

The Inland Empire Utilities Agency encourages your support and consideration of this program. If you have any questions, please contact Lisa Morgan-Perales of my staff at 909-993-1520 or via email at lperales@ieua.org.

Sincerely,

INLAND EMPIRE UTILITIES AGENCY

P. Joseph Grindstaff
General Manager

Water Smart – Thinking in Terms of Tomorrow

cc: Mr. Raymond Jay
Senior Resource Specialist
Metropolitan Water District of Southern California
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