

# San Diego Integrated Regional Water Management

## 2014 IRWM Drought Solicitation Implementation Grant Proposal

### Disadvantaged Community Assistance

Attachment 8 consists of the following items:

- ✓ **Documentation of Presence and Needs of DACs.** Local DACs are defined and mapped using American Community Survey data from the U.S. Census, and 2013 projections from Nielsen-Claritas. Critical water supply and water quality needs identified by local DAC representatives are summarized.
- ✓ **Description of Proposed Projects and Targeted Benefits to DACs.** The targeted benefits to local DACs from the proposed projects are described.

### Table of Contents

Table of Contents .....	1
Funding Match Waiver .....	1
Presence and Needs of a DAC .....	1
Urban DAC Needs .....	3
Rural DAC Needs .....	3
Projects that Meet a Critical Water Supply or Water Quality Need of DACs .....	4
Project Benefits to DACs .....	4
Reynolds Groundwater Desalination Facility Expansion .....	5
Fallbrook Plant Nurseries Recycled Water Distribution System Expansion .....	5
Carlsbad Recycled Water Plant and Distribution System Expansion .....	6
Rincon Customer-Driven Demand Management Program .....	6
Regional Demand Management Program Expansion .....	7
San Diego Water Use Reduction Program .....	7
Regional Emergency Storage and Conveyance System Intertie Optimization .....	8



## Funding Match Waiver

The cumulative funding match for the proposal is approximately 44%. As such, none of the seven projects included in this *San Diego IRWM Drought Solicitation Implementation Grant Proposal* is applying for a funding match waiver.

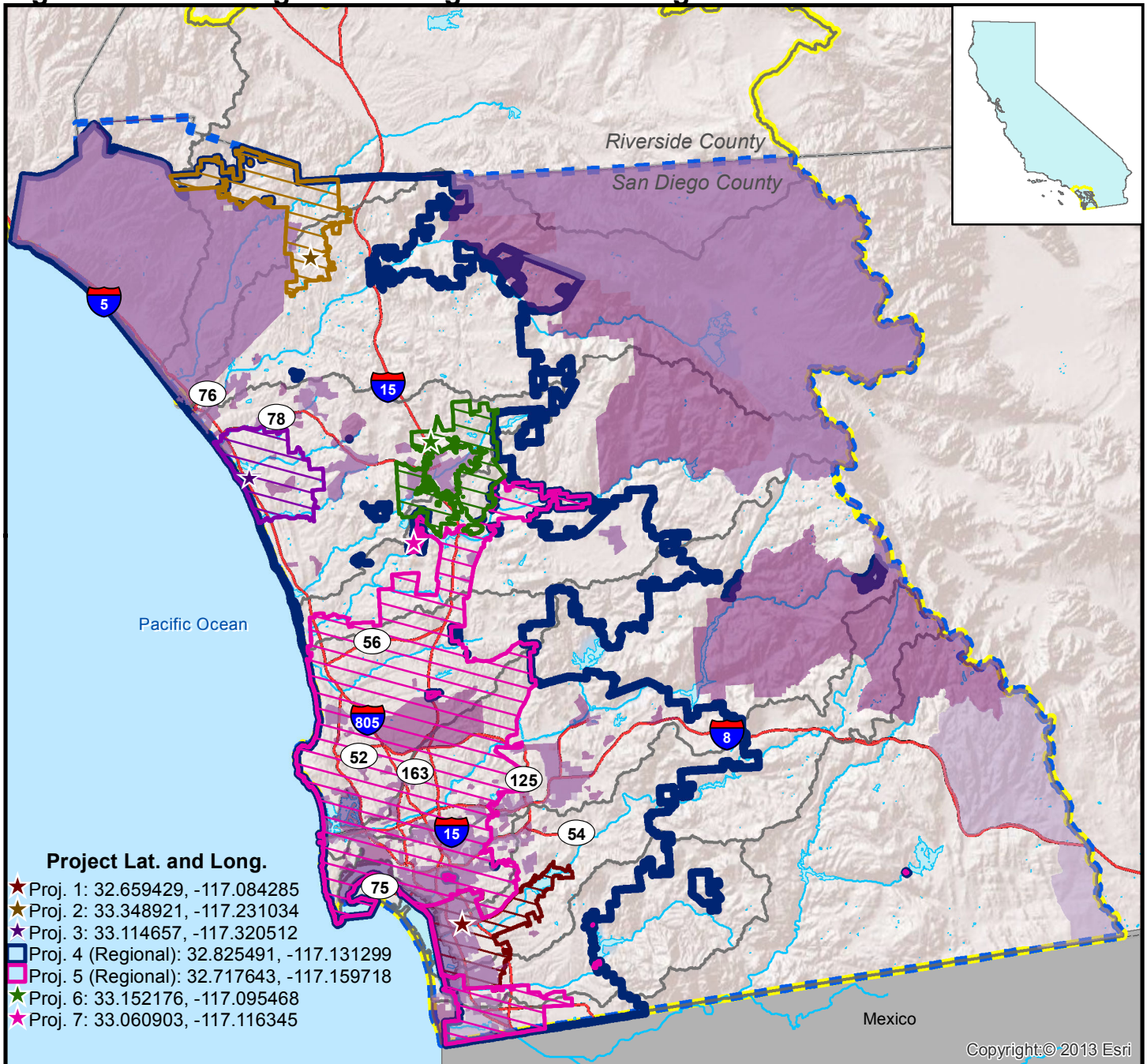
## Presence and Needs of a DAC

A DAC is defined by DWR in the 2014 IRWM Guidelines as a community earning less than 80% of the statewide median household income (MHI). The American Community Survey (ACS) of the U.S. Census comprises social and demographic data, including information regarding MHI estimates for the State of California and individual communities within the state. According to the *2014 IRWM Drought Solicitation Guidelines*, ACS data shows that 80% of statewide MHI is \$48,706, meaning that any community with an MHI of \$48,706 or less would qualify as a DAC. The MHI reported in the *2014 IRWM Drought Solicitation Guidelines* uses ACS data from 2006-2010. During development of the 2013 San Diego IRWM Plan, the San Diego IRWM Region used refined data with projections of 2013 MHI by census blocks, produced by Nielsen-Claritas based on U.S. Census data. Per the Nielsen-Claritas projections, 80% of the statewide MHI is \$46,979. These projections were used to help define DACs within the San Diego IRWM Region, and have been accepted by DWR through approval of the 2013 IRWM Plan (refer to **Appendix 1-5**).

During development of the 2013 IRWM Plan, DAC advocates indicated that additional efforts to validate DACs in the Region are necessary, because U.S. Census data is often unable to capture the true economic conditions of various communities in San Diego County. This is particularly true of those communities with a high number of undocumented residents, tribal communities, or other residents who may choose to not provide information to the U.S. Census. In addition, DAC advocates noted that the scale of U.S. Census data may be too large to capture smaller areas of DACs throughout the Region. To respond to DAC advocate comments and include a regional outlook of DACs that is as inclusive as possible, the 2013 San Diego IRWM Plan defines DACs as those represented by the ACS data (those with an income of \$48,706 or less on a tract-level) and those represented by the Nielsen-Claritas data (those with an income of \$46,979 or less on a block-level). Based on these data sources, there are many communities and rural areas within the Region that have an average MHI less than 80% of the statewide MHI. **Figure 8-1** shows the location of DACs within the San Diego Region, as well as their relation to each of the seven projects included in this proposal.

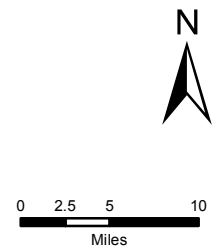
The San Diego IRWM Region distinguishes between urban DACs and rural DACs, because the nature of water-related issues for these populations of DACs is markedly different. Urban DACs are those DACs that are located within municipal service areas and therefore receive public water and wastewater services; urban DACs represent the majority of DACs in the Region as shown in **Figure 8-1**. Rural DACs are those DACs that are located outside of the service area of the San Diego County Water Authority (SDCWA) and are therefore not served by a local water or wastewater agency. The 2013 IRWM Plan discussed the issues, needs, and challenges facing both urban and rural DACs in the Region. This information has been summarized below.

**Figure 8-1: San Diego IRWM Region Disadvantaged Communities**



## Legend

- |  |                              |  |  |
|--|------------------------------|--|--|
|  | San Diego IRWM Region        |  | San Diego County Water Authority           |
|  | Funding Area Boundary        |  | Carlsbad Municipal Water District          |
|  | Watershed                    |  | Fallbrook Public Utility District          |
|  | Freeway                      |  | Rincon del Diablo Municipal Water District |
|  | Waterbody                    |  | City of San Diego                          |
|  | County                       |  | Sweetwater Authority                       |
|  | 2013 Disadvantaged Community |  |  |
|  | 2010 Disadvantaged Community |  |  |





### Urban DAC Needs

Because urban DACs are located within water agency service areas, they receive safe drinking water and wastewater services through local agencies and municipalities. As such, their water resources needs are generally related to community development and surface water quality issues, rather than drinking water quality, drinking water supply, or wastewater disposal and treatment issues. These needs are not considered critical water supply or water quality needs by DWR, as defined in the *2014 IRWM Drought Solicitation Guidelines*. Even so, urban DACs in the San Diego IRWM Region face a number of water resources issues.

Urban DACs have reported experiencing flooding due to creek constrictions, which can result from inadequately-sized drains and culverts, vegetation overgrowth (particularly *Arundo donax*), creek realignment, pollution, or illegal dumping. Urban DAC areas are also prone to flooding due to high runoff from impervious surfaces associated with urbanization and a lack of open space or other non-paved recreation areas. The high volume of stormwater runoff also contributes to the poor surface water quality in urban DACs, as it is often polluted and drains directly into creeks. Homelessness also contributes to water quality issues, especially in homeless encampments located alongside the Region's water bodies that are prone to becoming a place where trash and other illegally-dumped items accumulates.

Many urban DACs in the Region are located adjacent to San Diego Bay and near industrial areas associated with the Region's shipping industry. These urban DACs are substantially impacted by pollution of San Diego Bay waters. Bay pollution from industry, runoff, and other activities has negatively impacted subsistence anglers, many of whom are residents of urban DACs. Low-lying urban DACs near the Bay may also experience the effects of sea level rise as a result of climate change.

### Rural DAC Needs

Unlike urban DACs, rural DACs generally do not receive municipal water and wastewater services, and therefore may not be consistently supplied with a safe source of drinking water or wastewater disposal. Due to infrastructure, source water quality, and other issues, the primary water-related concern of rural DACs is lack of a safe, reliable source of drinking water. Rural DACs often lack access to adequate infrastructure and financing, as well as the resources to adequately maintain existing system facilities. As a result, drinking water systems in rural DACs may face significant challenges in complying with longstanding and new drinking water rules. Three major problems impede the sustainability of small community water systems:

- 1) Contamination of drinking water sources from wastewater intrusion, agricultural influences, and contaminant spills from industrial activities.
- 2) Seasonal weather changes resulting in floods or droughts that may require design options to bypass treatment during rain and storm events and identification of alternative water supplies (including water reuse) to increase capacity during droughts.
- 3) Deteriorating collection and distribution systems that may compromise source water quality and increase the cost of water treatment.

Water supply and water quality issues in rural DACs may be exacerbated by climate change, poor economies, and lack of community expertise. Inadequate water supply to support existing communities is a public health risk, especially considering that the rural portions of the Region are also those that are particularly susceptible to wildfires. The majority of drinking water maximum containment level (MCL) violations in the Region occur with small public water systems, and inadequate wastewater treatment can result in unplanned discharge events.

Rural DACs also face cost-related water quality issues because providing supplemental treatment processes to improve the water quality of contaminated drinking water source waters is costly, and small DAC systems have fewer ratepayers to share the costs. Further, rural DACs may lack the technical expertise and financial stability to access funding programs that could be implemented to address cost-related issues. The lack of technical capacity also contributes to the high cost of DAC projects through an

inability to adequately perform operation and maintenance activities during the life of a system, further exacerbating issues and potentially resulting in system failures.

Another issue facing rural DACs includes groundwater contamination, potentially from leaking septic tanks, illegal dumping, or wildfires. Leaking or improperly sited septic tanks pose a public health hazard, but rural DACs often struggle to find financial assistance to fund the conversion from septic to sewer, which is expensive given the distance between some rural systems and existing sewer infrastructure. Illegal dumping, especially of chemicals or hazardous wastes in creeks and watersheds, is a common problem reported in rural DACs. Drinking water supplies for some rural DACs have also been contaminated with ash from recent wildfires. The Region anticipates that the projected increase in wildfire frequency and intensity resulting from climate change will disproportionately affect rural DACs, which are more likely to be located near fire-prone areas and less likely to have the ability to defend against fires. Some rural DACs lack sufficient water supplies for fire protection, further increasing the danger.

### Projects that Meet a Critical Water Supply or Water Quality Need of DACs

The *2014 IRWM Drought Solicitation Guidelines* define a critical water supply need or critical water quality need as meaning there is a severe threat to the health and safety of the DAC. As described above, all urban DACs in the San Diego IRWM Region are served by a municipal water supplier, each of which provides water that meets all drinking water quality standards. For urban DACs, critical water supply and water quality needs are linked to water supply reliability and affordability.

Although addressing critical water supply or water quality need of DACs is a priority for the San Diego IRWM Region, “critical needs” as defined by DWR only apply to the Region’s rural DACs. By their nature, rural DACs do not have a local agency that can apply for funding to implement projects on their behalf. Therefore, in the San Diego IRWM Region, all projects that have been funded by the IRWM Program and meet DWR’s critical DAC definition have been sponsored by a non-governmental organization (NGO). The short timeframe of the *2014 IRWM Drought Grant Solicitation* application period, particularly the need to begin implementation by April 1, 2015, presented substantial challenges to local NGOs. The tight timeframe and a lack of adequate resources for the NGOs to develop a project that would meet the requirements of the solicitation led to a lack of projects that would directly address DAC needs. The Region anticipates a greater emphasis on DAC projects in future rounds of funding, and has added new members to the San Diego IRWM Program’s Regional Advisory Committee that are expected to help the Region address the needs of its rural DACs.

### Project Benefits to DACs

As described above, critical water supply and water quality needs of urban DACs in the Region are limited to water supply reliability and affordability. Imported water is the most expensive source of water for agencies in the Region, and offsetting imported water purchases with a less expensive supply or through demand reduction contributes to maintaining the affordability of water in the Region. Water supply reliability, particularly during drought conditions, can also be improved through offsetting imported water demand. As described in Attachment 2, imported water supplies may be reduced or even cut off entirely in times of drought. In the 2014 water year, imported water supplies from the State Water Project (SWP) were limited to 5% of allocations across California. If the drought continues, it is possible SWP supplies will be reduced to 0%, meaning that the San Diego Region would not receive any SWP supplies in 2015. All seven projects included in this proposal will indirectly benefit DACs in the Region, because all of the projects will offset imported water demands. Offsetting imported water also provides non-critical water supply and water quality benefits that would be experienced by DACs in the Region and especially DACs within the project sponsors’ service areas. The following projects directly serve DACs:

- *Reynolds Groundwater Desalination Facility Expansion*
- *Fallbrook Plant Nurseries Recycled Water Distribution System Extension*
- *Carlsbad Recycled Water Plant and Distribution System Expansion*
- *Rincon Customer-Driven Demand Management Program*

The following projects do not directly serve DACs, but have DACs within the project sponsor's service area, which would experience indirect benefits from the proposed projects:

- *Regional Demand Management Program Expansion*
- *San Diego Water Use Reduction Program*
- *Regional Emergency Storage and Conveyance System Intertie Optimization*

#### **Reynolds Groundwater Desalination Facility Expansion**

The *Reynolds Groundwater Desalination Facility Expansion* will expand the Sweetwater Authority's capacity for production of desalinated groundwater for potable use. As described in Attachment 3, the project will produce potable water from brackish groundwater at an average cost of \$303/AF (in 2014 dollars). This is less costly than the projected average cost for imported water. The project will offset 5,200 AFY imported water, for a cumulative savings of \$243,622,167 over the project life. By producing a less costly source of water, the project will protect water prices paid by consumers. Further, the project will create additional, drought-proof local supply. This will help with water supply reliability by both reducing imported water demand and providing a supply that is available during times of drought when other local supplies, such as surface water, may not be available.

The Sweetwater Authority serves DACs in Chula Vista and National City (see **Figure 3-2**), while the City of San Diego serves DACs through much of its service area, including neighborhoods around San Diego Bay, and inland through City Heights (see **Figure 3-15**).

Other benefits associated with this project that would be experienced by DACs include:

- Reduced greenhouse gas (GHG) emissions
- Reduced social costs associated with avoiding GHG emissions
- Improved habitat in a protected wildlife area

#### **Fallbrook Plant Nurseries Recycled Water Distribution System Expansion**

The *Fallbrook Plant Nurseries Recycled Water Distribution System Expansion* project will expand Fallbrook's recycled water distribution system, allowing recycled water that is already produced to be distributed to agricultural water users. This project will directly offset potable water use by the agricultural water users by 642 AFY, making these potable supplies available to all users within Fallbrook's service area. Further, recycled water rates are less expensive than potable water rates, so the project will allow agricultural users to reduce irrigation costs, which can be cost-prohibitive to some agricultural water users. Therefore, the project will help to protect the local agricultural industry and the local economy by providing accessible and affordable water supplies.

There are small areas of DACs in the Fallbrook service area as shown on **Figure 3-5**. Benefits to these DACs are the same as benefits to the entire Fallbrook service area, such as increased water supply reliability and protection of water affordability from the offset of 642 AFY of imported water. While benefits are consistent throughout Fallbrook's service area, the economic benefits provided by the project are expected to provide a larger benefit to DACs compared to other water users given that economic impacts and water affordability issues tend to disproportionately affect DACs.

Other benefits associated with this project that would be experienced by DACs include:

- Reduced GHG emissions
- Reduced social costs associated with avoiding GHG emissions
- Contribution to 20x2020 goal
- Reduced water costs for agricultural users
- Reduced discharge to outfall and increased available capacity
- Reduced stormwater loading of pollutants
- Reduced need for fertilizer application

### Carlsbad Recycled Water Plant and Distribution System Expansion

The *Carlsbad Recycled Water Plant and Distribution System Expansion* will increase the production and distribution of recycled water and result in an offset of 353 AFY of potable water. Because this project will directly offset potable water use, the project will increase the reliability of existing potable supplies by making them available to all users within Carlsbad's service area. Further, the plant expansion components of the project will allow for future distribution of recycled water within and outside of Carlsbad's service area to offset a total of 2,240 AFY of potable water throughout northern San Diego County. This project, which is part of a regional plan to efficiently expand recycled water systems within northern San Diego County, will help to ensure water reliability and maintain water affordability.

There are small areas of DACs in the Carlsbad service area, as shown on **Figure 3-8**. Benefits to these DACs are the same as benefits to the entire Carlsbad service area, such as increased water supply reliability and protection of water affordability from the offset of 353 AFY of potable water in the short-term and 2,240 AFY in the long-term. While benefits are consistent throughout Carlsbad's service area, the economic benefits provided by the project are expected to provide greater assistance to DACs compared to other water users given that economic impacts and water affordability issues tend to disproportionately affect DACs.

Other benefits associated with this project that would be experienced by DACs include:

- Reduced GHG emissions
- Reduced social costs associated with avoiding GHG emissions
- Contribution to 20x2020 goal
- Reduced discharge to outfall
- Reduced stormwater loading of pollutants
- Reduced need for fertilizer application
- Increased local treatment capacity for future recycled water delivery

### Rincon Customer-Driven Demand Management Program

The *Rincon Customer-Driven Demand Management Program* will implement demand management measures, including advanced metering infrastructure (AMI) and customer interface software to incentivize conservation. The project will serve the entire Rincon MWD service area, including those portions of the service area that qualify as DACs. As shown in **Figure 3-17**, a portion of Rincon MWD's service area is a DAC. The program will offset 300 AFY of potable water, and provide direct water cost savings to individuals. The project will improve water supply reliability as well as help to maintain the affordability of water in the Rincon MWD service area. Reducing water usage will also help all water users in Rincon's service area, including DACs, avoid increased water costs due to tiered water rates that penalize higher water use. The economic benefits that would be provided by the project are quantified in Attachment 3, and would total \$10,755,165 over the project life. Because it will complete the installation of AMI throughout the Rincon MWD service area, the program will ensure that all Rincon MWD customers, including DACs, will directly benefit from the program.

Other benefits associated with this project that would be experienced by DACs include:

- Reduced GHG emissions
- Reduced social costs associated with avoiding GHG emissions
- Contribution to 20x2020 goals
- Reduced stormwater loading of pollutants



### Regional Demand Management Program Expansion

The *Regional Demand Management Program Expansion* project will be implemented throughout SDCWA's service area, including all urban DACs in the Region (see **Figure 3-13**). As described in Attachment 3, the project will offset a total of 1,089 AF of potable water over the project's useful life. Direct benefits to DACs could be accrued to any DAC resident who participates in the program. Participants would experience immediate and long-term water demand reduction, lowering monthly water costs. Reducing water usage will also help all water users in SDCWA's service area, including DACs, to avoid increased water costs associated with imported water supplies. The economic benefits that would be provided by the project are quantified in Attachment 3, and would total \$2,535,294 over the project life.

Although the benefits of the program related to offsetting potable water, such as improved water supply reliability and protection of water affordability, will be felt throughout SDCWA's service area, the program does not specifically target DACs. Therefore the program is considered to indirectly benefit DACs.

Other benefits associated with this program that would be experienced by DACs include:

- Reduced GHG emissions
- Reduced social costs associated with avoiding GHG emissions
- Contribution to 20x2020 goal
- Reduced stormwater loading of pollutants
- Reduced production of green waste

### San Diego Water Use Reduction Program

The *San Diego Water Use Reduction Program* will be implemented throughout the City of San Diego's service area and would offset a total of 381 AFY of potable water when fully implemented. As discussed above, DACs comprise a large portion of the City of San Diego's service area. The program will reduce water demand through the installation of pressure reducing valves. Benefits to individuals who participate in the program include lower water bills, and decreased risk for damage to fixtures and pipes in their homes from excessive water pressure. The program will also reduce potable water demand due to installation of the recycled water filling station, as described in Attachment 3. Reducing water usage and replacing potable water use with recycled water will also help all water users in the City of San Diego's service area, including DACs, to avoid increased water costs associated with imported water supplies. The economic benefits that would be provided by the project are quantified in Attachment 3, and would total \$5,742,112 over the project life. Benefits to DACs are considered indirect because the program does not specifically target DACs, but rather benefits DACs in a similar manner to all customers throughout the City of San Diego's service area.

Other benefits associated with this project that would be experienced by DACs include:

- Reduced GHG emissions
- Reduced social costs associated with avoiding GHG emissions
- Contribution to 20x2020 goals
- Reduced discharges to ocean outfalls
- Reduced stormwater loading of pollutants
- Reduced damage to plumbing

### Regional Emergency Storage and Conveyance System Intertie Optimization

The *Regional Emergency Storage and Conveyance System Intertie Optimization* project will have the greatest water supply reliability benefits of all seven projects included in this proposal because it both offsets imported water and allows for implementation of the Region's Emergency Storage Project (ESP). The ESP is designed to ensure adequate water supplies are available throughout the Region in times of water supply shortages such as drought or service interruptions caused by system failures. This project will ensure that the redundancy necessary for a strong ESP is available, improve the Region's ability to move water from Hodges Reservoir to the regional aqueduct and into alternate storage if so needed, and to maximize the Region's ability to efficiently and effectively collect, store, and utilize its water supplies. Therefore, the project will provide economic benefits to the Region, including DACs, because it will help to offset imported water purchases. Over the long-term implementation of the project, it is expected that the project will reduce water costs to customers, including DACs, by \$187,972,288.

Though the project does not directly serve DACs, the benefits will be provided to the Region as a whole, and is not limited to the service area of the project sponsor, the City of San Diego, and its partners, Santa Fe Irrigation District and SDCWA.

Other benefits associated with this project that would be experienced by DACs include:

- Reduced GHG emissions
- Reduced social costs associated with avoiding GHG emissions
- Improved water quality of surface reservoir
- Reduced downstream flooding during wet weather events
- Increased ability to operate regional intertie
- Improved water quality for aquatic species