WaterSMART: Drought Resiliency Project Grants for Fiscal Year 2016
(R16-FOA-DO-006)

Coachella Valley Water District
Bermuda Dunes In-Lieu Groundwater Recharge Project

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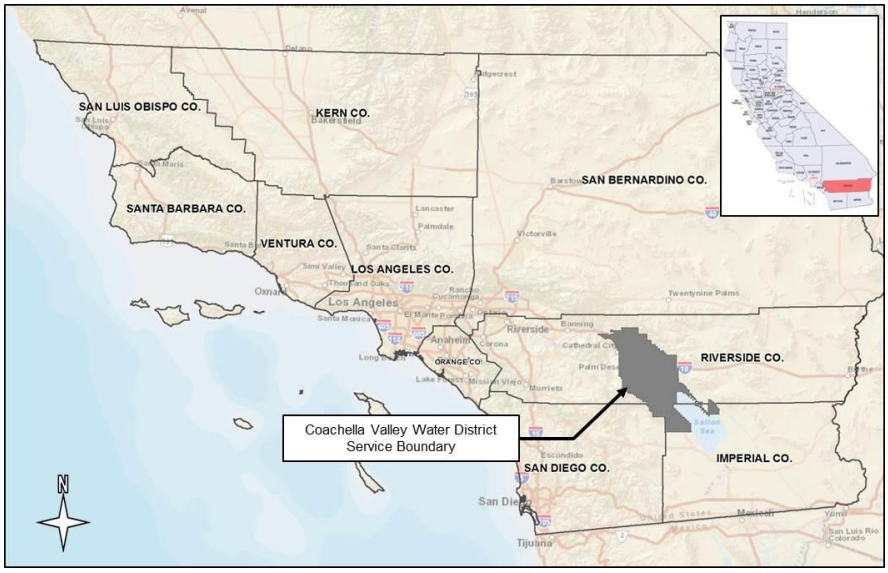
1.1 Executive Summary

Date: **April 11, 2016**
Applicant: **Coachella Valley Water District**
City: **Palm Desert**
County: **Riverside**
State: **California**

Coachella Valley Water District (CVWD) is applying to the *WaterSMART Drought Resiliency Program* for $300,000 to help fund construction activities for the *Bermuda Dunes In-Lieu Groundwater Recharge Project* that would implement infrastructure to deliver non-potable Colorado River water to the Bermuda Dunes Country Club. The purpose of the project is to improve regional drought resiliency by reducing groundwater overdraft. The project falls under project category Task A – Increasing the Reliability of Water Supplies through Infrastructure Improvements, as described in the FOA. The project consists of constructing new conveyance system components, a pipeline and pump station, to increase flexibility to deliver water from different sources, allowing CVWD to deliver non-potable water in place of potable groundwater for irrigation. The project will decrease groundwater overdraft by substituting non-potable water for groundwater that would otherwise be pumped and used for irrigation. Groundwater overdraft is considered the greatest drought-related concern in the Coachella Valley, and is most severe in the Mid-Valley area where the project is located. This project is a component of CVWD's larger Mid-Valley Pipeline (MVP) project, which will reduce groundwater pumping by 52,000 acre-feet per year (AFY) on a long-term basis by connecting golf courses to surface water infrastructure. The project will increase CVWD's capacity to respond to drought on a long-term basis, and will improve water management by providing infrastructure necessary to deliver an alternative source of water for a large irrigation use sector.

Implementation of the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is underway as of January 1, 2016, and can be completed by September 28, 2018. Several federal facilities associated with conveying Colorado River water to the Coachella Valley are located within the Project Area. The *Bermuda Dunes In-Lieu Groundwater Recharge Project* would include the construction of a connection to the Coachella Canal, which is one of the aforementioned federal facilities.



1.2 Background Data

Project Location

CVWD lies within the Whitewater River watershed in the Coachella Valley, which is located within Riverside County, California (see map on the right and more detailed figure on the following page).

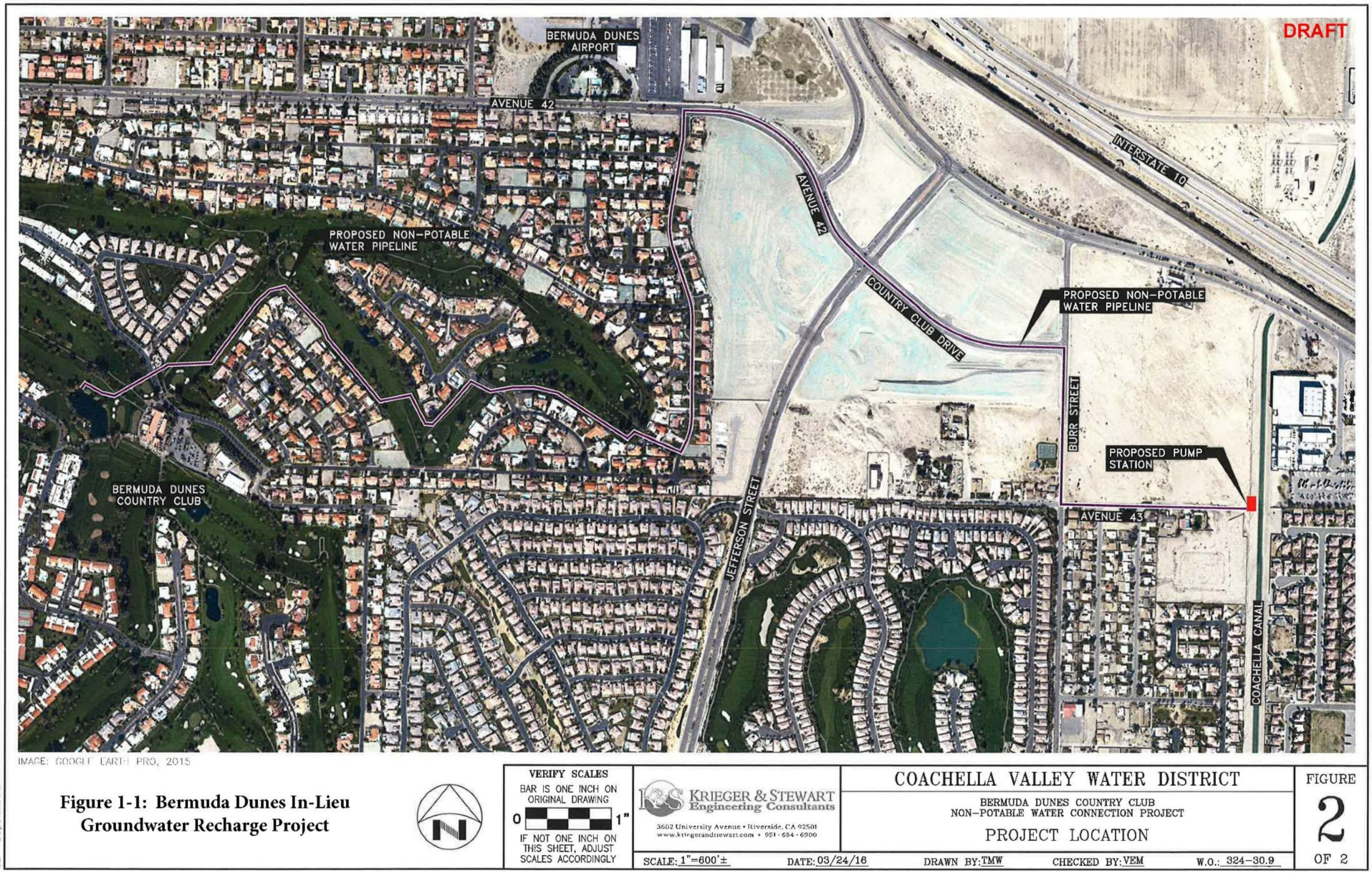


Figure 1-1: Bermuda Dunes In-Lieu Groundwater Recharge Project

CVWD's service area covers several incorporated cities, including the Palm Springs, Cathedral City, Palm Desert, Rancho Mirage, Indian Wells, and La Quinta. The *Bermuda Dunes In-Lieu Groundwater Recharge Project* is a pipeline and pump station construction project located in Bermuda Dunes and a small portion of the City of Indio within Riverside County, which is located within the middle portion of CVWD's service area. The pipeline will be located both in public and private right-of-way (ROW), and this grant request is only to cover costs in the public ROW. The pipeline and pump station would be constructed to move water from the Coachella Canal and terminate at a holding pond on the Bermuda Dunes Country Club. The location of the proposed pipeline alignment and pump station that would be used to deliver non-potable Colorado River supplies to the Bermuda Dunes Country Club is shown in **Figure 1-1**.

Applicant Water Supplies, Demands, and Rights

CVWD is a county water district organized under the California County Water District law. CVWD has a contract with the State of California for an entitlement of State Water Project (SWP) water. However, because there are no facilities in place to directly deliver SWP water to the Coachella Valley, CVWD exchanges its SWP water through the Metropolitan Water District of Southern California (MWD) for untreated Colorado River water that is delivered through the Coachella Canal. CVWD is also a contractor with the United States for delivery of Colorado River water as authorized by the Boulder Canyon Project Act (Act of December 21, 1928). Under the Quantification Settlement Agreement (QSA), dated October 10, 2003, CVWD has a Priority 3a entitlement of 330,000 acre-feet per year (AFY) of Colorado River water. This amount increases by 4,000-5,000 AFY based on the Compromise QSA Delivery Schedule (Schedule C) contained in the QSA. Making the best use of every drop of CVWD's QSA allotment is critical to reducing overdraft in the Coachella Valley.

The source of surface water for the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is imported water secured by CVWD via the QSA, which would be delivered via the Coachella Canal. The Coachella Canal, which is a 123-mile-long branch of the All-American Canal, was completed in 1949 by the United States Bureau of Reclamation (Reclamation) to deliver water to the Coachella Valley for irrigation purposes. CVWD provides water to customers for agricultural and domestic water use. CVWD currently delivers approximately 275,000 AFY of Colorado River water via the Coachella Canal, to approximately 1,060 agricultural accounts representing about 67,300 acres of farmland in Riverside County. An additional 41,500 AFY of Colorado River water is diverted for other non-agricultural uses, such as golf course, landscape irrigation, and groundwater replenishment.

CVWD's service area comprises nearly 1,000 square miles, with a population of approximately 300,000 people, served through approximately 108,000 service connections. CVWD's source of domestic water is the underlying groundwater aquifer, which is defined by the California Department of Water Resources (DWR) as Basin 7-21.01, the Coachella Valley Groundwater Basin, Indio Sub-basin. Imported Colorado River water is used for groundwater replenishment and irrigation. There are currently two primary recharge facilities in the Coachella Valley that are recharged with both SWP and Colorado River water allotments: the Whitewater Recharge Area and the Thomas E. Levy Groundwater Replenishment Facility. These facilities are located within the upper and lower reaches of the Indio Sub-basin, and there are no direct recharge facilities within the middle portion of the Coachella Valley where overdraft is the most persistent (this area is referred to as the Mid-Valley).

To address groundwater overdraft and related issues in the Mid-Valley, CVWD explored options to increase groundwater replenishment in the area. As a result of these explorations, the Mid-Valley Pipeline project (MVP) was initially proposed in 2000, and later incorporated as a priority project into the *Coachella Valley Water Management Plan.*[1] The MVP project, the first phase of which was completed in 2009, allows for the delivery and direct use of non-potable Colorado River water allotments from the Coachella Canal and expansion of recycled water facilities to reduce groundwater pumping among approximately 50 golf courses in the Mid-Valley area. The *Bermuda Dunes In-Lieu Groundwater Recharge Project* is a component of the larger MVP project, and therefore would provide in-lieu recharge in the Mid-Valley area. **Figure 1-2** shows the overall Indio Sub-basin, including recharge facilities and the Coachella Canal. Please note that **Figure 1-2** shows additional groundwater basins in the Coachella Valley beyond the Indio Sub-basin; these basins are not specifically related to the project, and are therefore not described further in this application.

Groundwater Overdraft and Drought

The Coachella Valley Groundwater Basin is the most significant water-related resource in the Coachella Valley. Due to the importance of the basin, CVWD has completed a long-term regional groundwater management and drought planning document that covers the entire Indio Sub-basin. This document, the *Coachella Valley Water Management Plan* (WMP), was initially completed in 2002 and comprehensively updated in 2012, and is included as **Appendix A** along with a 2014 status report. Data from the WMP shows that the region's groundwater balance is a factor of inflows and outflows; average inflows and outflows in the basin are shown in **Figure 1-3**.

Figure 1-3: Average Inflows and Outflows from 2003 through 2012

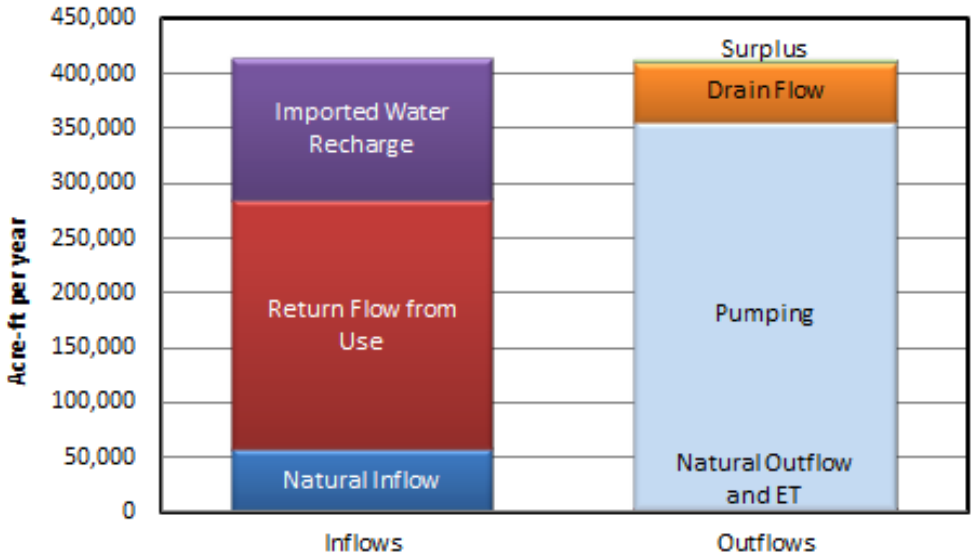


Figure 1-3 shows that on average, imported water recharge from 2003 to 2012 was greater than 100,000 AF. The amount of water that is imported into the region is highly dependent upon rainfall, and has been substantially reduced in recent years as a result of the drought. When the amount of imported water is reduced, the result can be an imbalance between inflows and outflows that result in a negative water balance in the groundwater basin (overdraft).

[1] Coachella Valley Water District. 2005. Final Concept Paper: Mid-Valley Pipeline. October.

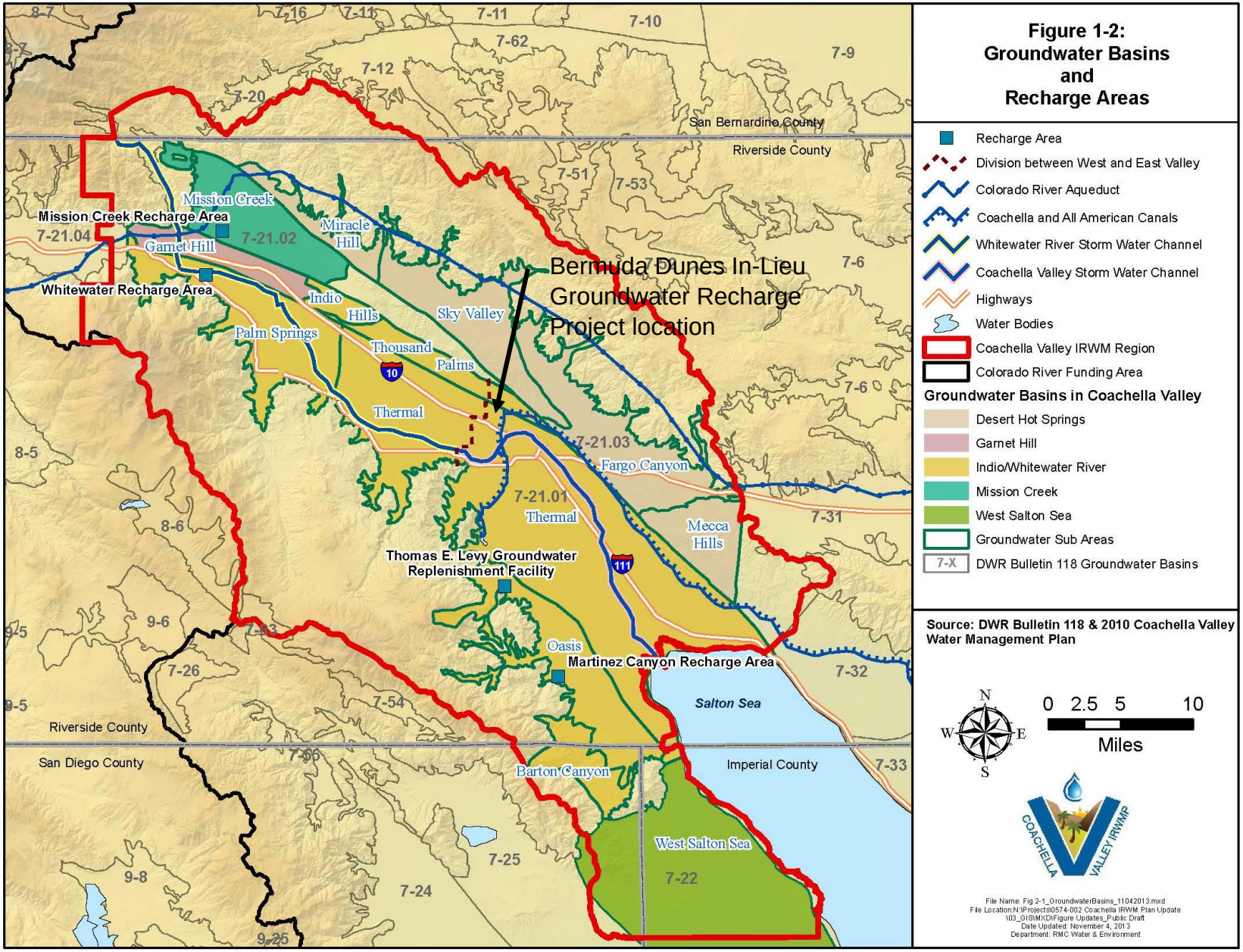


Figure 1-2:
Groundwater Basins
and
Recharge Areas
Recharge Area
Division between West and East Valley
Colorado River Aqueduct
Coachella and All American Canals
Whitewater River Storm Water Channel
Coachella Valley Storm Water Channel
Highways
Water Bodies
Coachella Valley IRWM Region
Colorado River Funding Area
Groundwater Basins in Coachella Valley
Desert Hot Springs
Garnet Hill
Indio/Whitewater River
Mission Creek
West Salton Sea
Groundwater Sub Areas
7-X
DWR Bulletin 118 Groundwater Basins
Source: DWR Bulletin 118 & 2010 Coachella Valley Water Management Plan
N
W
E
S
0 2.5 5 10
Miles
COACHELLA VALLEY IRWMP
Bermuda Dunes In-Lieu Groundwater Recharge Project location
Mission Creek Recharge Area
Whitewater Recharge Area
Thomas E. Levy Groundwater Replenishment Facility
Martinez Canyon Recharge Area
Mission Creek
Garnet Hill
Miracle Hill
Indio Hills
Palm Springs
Thousand Palms
Sky Valley
Thermal
Fargo Canyon
Mecca Hills
Oasis
Barton Canyon
West Salton Sea
Salton Sea
San Bernardino County
Riverside County
San Diego County
Imperial County
7-21.04
7-21.02
7-21.03
7-21.01
7-62
7-51
7-53
7-6
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9-25

As a result of the recent drought, the volume of water imported for groundwater recharge in 2014 totaled 19,468 AF, which represents less than 20% of average deliveries. Engineer Reports for the Indio Sub-basin reported a negative annual groundwater balance, or overdraft conditions, for 2014. Overall, in 2014 the annual balance in the upper reach Indio Sub-basin was -86,931 AF, indicating that there was an overall loss in storage (overdraft) in the basin.[2]

In contrast, in normal year conditions, the Region has not experienced groundwater overdraft conditions as supported by a positive groundwater balance in such years. Engineer Reports show that during 2012 (a non-drought year), annual groundwater balances were positive for the Indio Sub-basin. The volume of water for groundwater basin replenishment in 2012 totaled 313,839 AF. The replenishment amount accounts for a majority of the difference between the water balances in 2012 vs. 2014, with the other components of the groundwater balance remaining relatively stable.

The water balance chart shown in **Figure 1-3** demonstrates that one of the ways to restore balance in the basin and combat issues associated with overdraft is to reduce outflows. The ultimate purpose of the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is to implement infrastructure that will allow CVWD to utilize existing Colorado River supplies, which will directly reduce groundwater outflows (groundwater pumping).

Applicant Customers and Water Delivery System

CVWD's municipal water system includes 96 active wells, 61 distribution reservoirs, and 1,996 miles of distribution piping. CVWD has 108,599 active accounts that serve approximately 318,217 users in the CVWD service area.[3] All of the drinking water supplied to CVWD municipal users comes from the groundwater basin, which remains in a state of overdraft as of Fiscal Year 2015. [4]

The Coachella Canal is a component of CVWD's water delivery system, which is directly related to the *Bermuda Dunes In-Lieu Groundwater Recharge Project.* The Coachella Canal is a branch of the All-American Canal that brings Colorado River water into the Imperial and Coachella Valleys. Historically, CVWD received approximately 330,000 AFY of Priority 3A Colorado River water delivered via the Coachella Canal. The Coachella Canal originates at Drop 1 on the All-American Canal and extends approximately 123 miles, terminating in CVWD's Lake Cahuilla. There is an estimated 485-miles of disturbing pipe to deliver water from the Coachella Canal, with an estimated 1,300 AF of storage capacity. The service area for Colorado River water delivery under CVWD's contract with Reclamation is defined as Improvement District No. 1, which encompasses most of the lower portion of the Coachella Valley and a portion of the upper Coachella Valley north of Interstate 10 (see **Figure 1-2**).

The Coachella Valley has more than 120 golf courses, which are served either non-potable water (a mix of recycled water and Colorado River water) or potable groundwater. By the end of 2015, it is estimated that more than half of the golf courses in CVWD's service area were connected to non-potable water for irrigation. CVWD's overall goal is to connect approximately 50 additional golf courses in the Mid-Valley area to non-potable water sources, which would reduce groundwater pumping by approximately 52,000 AFY, resulting in in-lieu groundwater recharge.

[2] CVWD. 2015. Engineer's Report on Water Supply and Replenishment Assessment for the West Whitewater River Sub-Basin Area of Benefit 2015/2016. April. Available: http://www.cvwd.org/ArchiveCenter/ViewFile/Item/255
[3] CVWD. 2015. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2015. Available: http://www.cvwd.org/ArchiveCenter/ViewFile/Item/482
[4] CVWD. 2015. Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2015. Available: http://www.cvwd.org/ArchiveCenter/ViewFile/Item/482

Non-potable connections in the Mid-Valley area would take place via the MVP project, which is also referred to as the Mid-Valley In-Lieu Recharge Project. The MVP project is a key element of a regional in-lieu recharge project that is designed to help eliminate overdraft in the Indio Sub-basin, and is currently being implemented to reduce groundwater pumping by supplying Colorado River water via the Coachella Canal and CVWD recycled water, to golf courses and other irrigation uses. Groundwater levels in the Mid-Valley area have historically experienced significant declines in comparison to the upper and lower portions of the basin where replenishment facilities are located (see **Figure 1-2**). Currently, CVWD has allotments secured to non-potable Colorado River water and recycled water that would be delivered via the MVP project. While this water is available and is crucial to fighting overdraft in the Region, infrastructure is not currently in place to maximize use of these non-potable resources. The purpose of the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is to construct the infrastructure needed to maximize use of available non-potable resources.

Past Working Relationships with Reclamation

CVWD has had a long-term relationship with Reclamation for over 85 years since the beginning of the Boulder Canyon Act in 1928, and the subsequent 1934 contract for construction of the All American Canal project. CVWD has also partnered with Reclamation on the following projects:

- CVWD executed Cooperative Agreement No. 05FC340010: Agricultural Conservation of Colorado River Water in the Coachella Valley, California with Reclamation in 2005. This project involved redirecting conserved agricultural water to recharge the groundwater basin, thereby banking water for future use by agricultural and urban users.
- CVWD worked closely with Reclamation on the Coachella Canal Lining project. This project lined 36 miles of the Coachella Canal at a total cost of $120 million.
- CVWD worked closely with Reclamation on the recently completed relocation of 4,700 feet of the Coachella Canal that had subsided through the SilverRock Golf Course in La Quinta. Work was substantially completed in December 2014.
- CVWD also completed the construction phase of the Lateral Automation Pilot Project in November 2014 as part of Reclamation Agreement No. R12AP34007. The intent of the project is to better manage and increase the efficiency of the delivery of irrigation water to farmers.
- CVWD also recently executed Agreement No. 14-XX-30-W0574, to implement a Pilot Program for funding the creation of Colorado River System water or storage in Lakes Powell and Mead through implementation of a Farm Flood to Drip Conversion Rebate Program.

1.3 Technical Project Description

1.3.1 Project Description

The project consists of administration, engineering, environmental documentation, and construction of the *Bermuda Dunes In-Lieu Groundwater Recharge Project.* Engineering and environmental documentation began for the *Bermuda Dunes In-Lieu Groundwater Recharge Project* in January 2016. The Project will consist of construction and operation of a non-potable water connection that will be used to provide non-potable water from the Coachella Canal to the Bermuda Dunes Country Club for irrigation and lake-filling purposes.

The non-potable water connection includes a connection to the Coachella Canal, a pump station at the Coachella Canal, and a pipeline from the pump station an existing holding pond at the Bermuda

Dunes Country Club. The total length of pipeline to be installed is approximately 13,550 linear feet (LF), consisting of approximately 7,900 LF within a CVWD easement located in the Bermuda Dunes Country Club and approximately 5,650 LF within the public ROW. The diameter of the pipeline will be approximately 12 to 18 inches.

The alignment is proposed to be constructed from the Coachella Canal west along Avenue 43, along Burr Street from Avenue 43 to Country Club Drive, along County Club Drive which then continues onto Avenue 42 from Burr Street to Glass Drive, then along Glass Drive from Avenue 42 to Santiago Place and along Santiago Place. The pipeline will then be routed through the Bermuda Dunes County Club and terminate at a holding pond on the Bermuda Dunes Country Club (see **Figure 1-1**). The pipeline will be located both in public and private right-of-way, and this grant request is only to cover costs in the public right-of-way.

The pump station is anticipated to consist of a vertical turbine pumping unit with a nominal pumping capacity of up to 3,200 gallons per minute (gpm), above-grade discharge piping, and an outdoor motor control center panel with a sunshade structure. The pump station site will be secured by a chain link fence and possibly some short retaining walls (if required for site grading).

1.3.2 Tasks Associated with the Project

Task 1: Project Administration and Reporting

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* will be administered by CVWD staff. CVWD staff will measure and report program progress, and have budgeted funds necessary to implement the project. CVWD staff will also coordinate with Reclamation as necessary for grant and project-related matters.

Task 2: Engineering

Preliminary engineering for the *Bermuda Dunes In-Lieu Groundwater Recharge Project* has begun. Final engineering will include final design to solidify the design of the pipeline and pump station, and will result in final bid documents. This work will include geotechnical investigations and engineering work that is anticipated to be completed by a contractor. Contractor specifications will be reviewed by CVWD staff prior to finalization to ensure that they meet CVWD standards.

Task 3: Environmental

Environmental documentation has begun, including completion of biological and cultural resource surveys and a draft Mitigated Negative Declaration (MND) and Initial Study. Additional environmental work will be completed by CVWD staff in conjunction with a contractor to ensure that final environmental documentation includes Federal cross-cutting provisions necessary for Reclamation to complete environmental review and concurrence findings.

Task 4: Construction

Based on preliminary engineering design, construction of the project is anticipated to be completed by a contractor, and involve the following:

- Removal of existing landscaping, asphalt, concrete, or soil, as necessary
- Trenching along the pipeline alignment
- Placement of pipe bedding and pipeline ranging from 12 to 18 inches in diameter
- Backfilling trenches and compacting soil
- Returning the land surface to pre-construction conditions to the extent practicable
- Construction of pump station facilities, chain link fence, and potentially retaining walls
- Installation of a motor-actuated valve in a below-grade vault at the golf course lake

CVWD staff will complete inspection and review of construction activities to ensure that construction has been completed in line with final specifications.

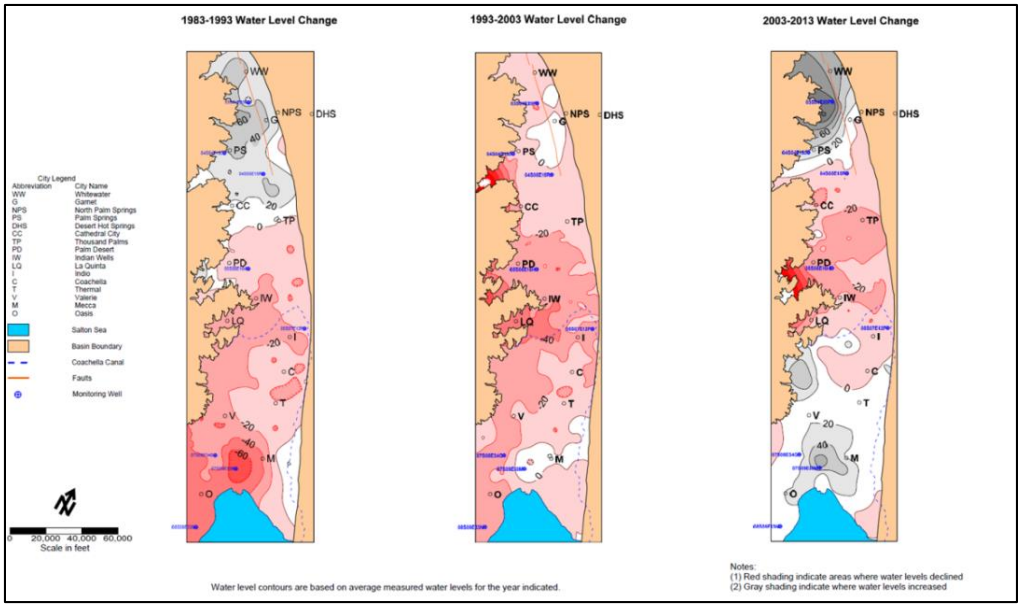
1.4 Evaluation Criteria

This section addresses the criteria and subcriteria included in the FOA. The criteria, subcriteria, and questions from the FOA are pasted in the following sections to ensure each of these items is adequately addressed.

1.4.1 Evaluation Criterion A: Project Benefits

The WMP is a long-term water management plan that was developed with the goal of reliably meeting current and future water demands in a cost-effective and sustainable manner. The WMP noted that groundwater levels in the Mid-Valley portion of the Region have declined when compared to groundwater levels in the upper and lower valley areas where groundwater replenishment facilities are located. **Figure 1-4** shows that increased groundwater levels, shown in gray, have occurred in the upper and lower portions of the Indio Sub-basin from 2003 to 2013. However, decreased groundwater levels, shown in pink, in the Mid-Valley Area will continue until programs are implemented in this area to reduce pumping.

Figure 1-4: Water Level Changes over the Last 30 Years in 10-Year Increments



To address groundwater level declines in the Mid-Valley Area, the WMP evaluated different programs to replenish groundwater. The MVP project represents the most cost-effective program to replenish groundwater within the Mid-Valley area. The MVP project is an in-lieu recharge project that would reduce groundwater pumping by supplying available Colorado River water via the Coachella Canal and recycled water to golf courses and other irrigation uses. The WMP identified approximately 50 potential connections for the MVP project, which cumulatively would reduce groundwater pumping by 52,000 AFY (1,040 AFY per connection): 37,000 AFY of groundwater pumping would be offset by Colorado River water and 15,000 AFY would be offset by recycled water. The proposed *Bermuda Dunes In-Lieu Groundwater Recharge Project* is a component of the larger MVP project, as it would deliver Colorado River water directly to the Bermuda Dunes Country Club, which is one of the 50 proposed connections evaluated for the MVP project.

Per information in CVWD's 2015/2016 Engineer's Report, all of CVWD's allotted Colorado River supplies are necessary to mitigate groundwater overdraft.[5] Currently, infrastructure is not in place to maximize use of Colorado River supplies that are available for non-potable purposes. Therefore, additional delivery infrastructure, such as the system proposed under the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is necessary to maximize use of Colorado River water and reduce groundwater overdraft.

1.4.1.1 Increasing Reliability of Water Supplies

Will the project make additional water supplies available?

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* would make additional water supplies available. Water that would be delivered as a result of implementation of the project is Colorado River water that is currently available, but cannot be utilized, because infrastructure is not in place to deliver the water to potential irrigation users.

The amount of water that would be delivered as a result of the project is estimated to be 1,040 AFY. This estimate is based on information from the WMP, which estimated there was a total of 52,000 AFY of irrigation demands for 50 potential sites associated with the MVP project.

$$\text{Water Delivered} = \frac{\text{52,000 AFY of total demands}}{\text{50 total sites}} = \text{1,040 AFY of demands per site}$$

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* would result in delivery of approximately 8% of the total amount of replenishment that is necessary for the Mid-Valley area per information from the WMP. The calculation for this estimate is shown below.

$$\frac{\text{1,040 AFY of replenishment provided by project}}{\text{52,000 AFY of total replenishment}} = \text{2\% of total replenishment}$$

CVWD's 2015 Engineer's Report states that, "given the uncertainty of future SWP deliveries, golf course substitution should be prioritized for implementation in the Mid-Valley area to reduce the use of groundwater in storage for irrigation, and put MVP investments to maximum use." [6] Therefore, the benefits associated with additional water supplies provided by the project are significant in that they will directly contribute to addressing high-priority demands in the Mid-Valley area.

How will the project build long-term resilience to drought? How many years will the project continue to provide benefits?

Due to low annual rainfall and high average temperatures, the arid Coachella Valley is essentially always in a state of drought. However, the Region has been able to grow in population and size, in large part due to its groundwater aquifers that have large storage potential. Groundwater overdraft threatens the region's resiliency to drought, as it directly reduces the amount of groundwater that is available for use, and also reduces the overall storage capacity of the basin.

The WMP identifies in-lieu recharge as one of the primary tools to address the Coachella Valley's overdraft issue, and specifically recommends maximizing use of local sources of non-potable water for agricultural and golf course irrigation.[7] By increasing use of locally-available resources

[5] CVWD. 2015. Engineer's Report on Water Supply and Replenishment Assessment for the West Whitewater River Sub-Basin Area of Benefit 2015/2016. April. Available: http://www.cvwd.org/ArchiveCenter/ViewFile/Item/255

[6] CVWD. 2015. Engineer's Report on Water Supply and Replenishment Assessment for the West Whitewater River Sub-Basin Area of Benefit 2015/2016. April. Available: http://www.cvwd.org/ArchiveCenter/ViewFile/Item/255

[7] CVWD. 2010. *Coachella Valley Water Management Plan Update*. Section 6.5 Source Substitution, page 6-24.

rather than increasing pumping of groundwater that is in storage, the *Bermuda Dunes In-Lieu Groundwater Recharge Project* will help to build long-term resilience to drought.

The project will continue to provide these benefits throughout the useful life of the project, which is anticipated to be 40-years based on information in the latest Engineer's Report from CVWD. Beyond the 40-year average useful life for the pipelines and other infrastructure associated with the project, CVWD will continue to maintain its non-potable infrastructure on a long-term basis to ensure that groundwater pumping is sustainably managed. Additional costs associated with long-term operation and maintenance of the project are not included in the budget for this proposal.

1.4.1.2 Improving Water Management

How will the project improve the management of water supplies?

The project will improve water management by implementing infrastructure that is necessary to allow CVWD to deliver available Colorado River supplies during normal operations and during times of drought. The project will allow CVWD to deliver existing non-potable supplies, and therefore will increase operational flexibility by increasing local supply availability in the Region.

The project will also improve water management by reducing groundwater overdraft, which has many external impacts to water management and supplies in the Region. Potentially adverse impacts associated with groundwater overdraft include:

- Land subsidence
- Increased costs to pump water and deepen wells
- Water quality degradation

Land subsidence in the Coachella Valley has been studied by the United States Geological Survey (USGS) in partnership with CVWD. A final report on subsidence was published by the USGS in 2014, which indicated that subsidence continues to occur within portions of the Indio Sub-basin, and can be attributed to declining water levels. Some of the most substantial subsidence was detected near the Bermuda Dunes airport, which is located approximately ½ of a mile north of the Bermuda Dunes Country Club (refer to **Figure 1-1**).[8] Land subsidence within the Mid-Valley has also had negative impacts on the Coachella Canal. Currently, CVWD is working with Reclamation on a project to realign a portion of the Coachella Canal that was impacted (had a loss of capacity) directly as a result of land subsidence.[9]

The aforementioned adverse impacts are costly to address both on a financial and on a direct resources (staff time) basis. By reducing groundwater overdraft, the *Bermuda Dunes In-Lieu Groundwater Recharge Project* would reduce the potential for secondary impacts associated with overdraft, which will allow CVWD to invest time and resources on proactive management efforts that will help to improve water management of water supplies in the Region.

Will the project make new information available to water managers? If so, what is that information and how will it improve water management?

CVWD has an interactive, GIS-based groundwater model that was used to model supplies and demands for the WMP, and is used for other regional planning efforts such as the Region's *Salt and Nutrient Management Plan.* CVWD calibrates its model with on-the-ground data that is gathered by implementing various provisions and recommendations of the WMP.

[8] United States Geological Survey. 2014. Land-Subsidence Trends in the Coachella Valley. Available: http://www.usgs.gov/newsroom/article.asp?ID=3910&from=rss#.VwgoSPkrJpg

[9] CVWD. 2014. Initial Study Checklist/Draft Mitigated Negative Declaration for the Coachella Canal Water Conveyance System Relocation Project – Silverrock. February.

Data that is derived from implementation of the *Bermuda Dunes In-Lieu Groundwater Recharge Project*, including the amount of groundwater pumping that is offset by project implementation, will be gathered by CVWD, and will be used to update the regional groundwater model to improve regional understanding about overall changes in groundwater elevations and quality as a result of implementation of in-lieu recharge projects. This information will improve water management, because it will allow CVWD to improve its understanding of project-related benefits and how those benefits affect overall groundwater levels and quality across the entire groundwater basin.

Will the project have benefits to fish, wildlife, or the environment?

Yes. Please refer to information in Section 1.4.1.3 for additional details.

What is the estimated quantity of water that will be better managed as a result of this project? How was this estimate calculated?

The amount of water that will be better managed as a result of the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is equivalent to the amount of water that will be made available by the project, which is 1,040 AFY (see calculation above in Section 1.4.1.1).

What percentage of the total water supply does the water better managed represent? How was this estimate calculated?

The percent of the total water supply that will be better managed as a result of the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is equivalent to the percent of overall supply that will be provided by the project, which is 2% (see calculation above in Section 1.4.1.1).

Provide a brief qualitative description of the degree/significance of anticipated water management benefits.

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* will provide benefits associated with offsetting groundwater overdraft, which is significant to the Coachella Valley. As indicated above, groundwater overdraft has resulted in subsidence in the Mid-Valley area, which has directly affected the Coachella Canal, resulting in the need for an extensive relocation project. Furthermore, overdraft reduces overall storage capacity in the basin, which has the potential to impact the region on a long-term basis. The project that will be implemented is a high-priority project identified in the WMP, and is part of a significant program to reduce groundwater pumping in the Mid-Valley area.

1.4.1.3 Providing Benefits for Fish and Wildlife and the Environment

Because the project will result in fish and wildlife benefits, the following questions from the FOA are answered.

What are the types and quantities of environmental benefits provided? How was this estimate calculated?

Given the need to increase replenishment in the Mid-Valley area, CVWD conducted an analysis of three potential projects that could result in replenishment of 52,000 AFY of water in the Mid-Valley area. Those potential replenishment options include:

- MVP Project: Non-Potable Water In-Lieu Replenishment Program (proposed project)
- Mid-Valley Direct Replenishment (percolation or injection into groundwater) Using Colorado River Supplied by Coachella Canal
- Additional SWP Purchases: Delivered to the Whitewater River Groundwater Replenishment Facility

The first alternative (MVP Project) is being implemented, in part, through the *Bermuda Dunes In-Lieu Groundwater Recharge Project.* The second alternative is not being implemented due to cost-related issues. The third alternative may be implemented as SWP supplies are available, but would be anticipated to result in environmental impacts to the Sacramento-San Joaquin Bay-Delta (Delta).

The Delta is considered to be in a state of crisis. Fish populations, including salmon and Delta-smelt, have declined dramatically in recent years. The levee system is aging, and vulnerability of the Delta to flooding, sea level rise, or a major earthquake has contributed to concerns about possible levee collapse. In addition, water quality problems continue, and there is little consensus on how to manage water resources through storage.[10]

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* provides a cost-effective alternative to additional SWP purchases, and therefore reduces future additional demands and subsequent diversions of water from the Delta, which may help to address some of the aforementioned issues by making the Delta water available for other interests and needs. In addition, due to the current vulnerability of the Delta, reducing future demands on this water resource would directly benefit the Region by reducing reliability issues that could occur if a catastrophic event such as a levee collapse or an earthquake were to substantially damage Delta-related infrastructure.

The types of environmental benefits provided by the *Bermuda Dunes In-Lieu Groundwater Recharge Project* are qualitative, and are based on offsetting demands for alternatives that may result in greater environmental impacts.

What is the status of the species of interest (i.e. endangered, threatened, etc.?) How has the drought impacted the species?

There are many species in the Delta that are listed as special status by both the State of California and the Federal Government. Impacts to these species has been exacerbated by the drought, which has caused the California Department of Fish and Wildlife to undertake stream and wildlife population monitoring, fish rescues, restoration projects, and many other actions to protect native fish and wildlife threatened or impacted by the statewide drought.[11]

If the proposed project will benefit threatened or endangered species, please consider additional elements.

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* will not result in direct benefits to threatened or endangered species; therefore, additional information regarding such benefits has not been provided.

1.4.2 Evaluation Criterion B: Drought Planning and Preparedness

The *Coachella Valley Water Management Plan* was first adopted by the CVWD Board of Directors in 2002, to assist CVWD in reliably meeting current and future water demands in a cost effective and sustainable manner, and to address the issue of groundwater overdraft. The *Coachella Valley Water Management Plan Update* was comprehensively updated in 2012, and is attached as **Appendix A**.

Explain how the applicable plan addresses drought.

The Region's primary potable water source is groundwater. Due to the characteristic year-round low precipitation levels of the Coachella Valley, natural inflow to the basin is nearly always less

[10] Delta Stewardship Council. 2010. The Delta. Available: http://deltacouncil.ca.gov/delta

[11] California Department of Fish and Wildlife. 2016. Drought Response Projects. Available: https://www.wildlife.ca.gov/Drought/Projects

than outflow due to groundwater pumping. This imbalance has caused overdraft conditions in the Coachella Valley Groundwater Basin and its sub-basins. Colorado River water is imported to the Coachella Valley to supplement water supplies and replenish groundwater basins. Imported Colorado River water is essential to sustain the Region's water demands and for replenishing groundwater supplies.

The Colorado River basin and the State of California have been in an extended drought for several years, which has impacted the amount of imported supplies to the Coachella Valley. The arid climate of the Coachella Valley, groundwater overdraft issues, and the increasingly frequent drought conditions due to climate change, have made drought planning and preparedness a priority for the Region. Thus, drought planning and preparedness are inherently addressed in the WMP.

The primary components of the WMP include water conservation and water supply development coupled with groundwater recharge and source substitution to reduce groundwater overdraft. Getting the Coachella Valley Groundwater Basin out of an overdraft condition is necessary for long-term supply reliability and preparedness under normal conditions, and is even more important under drought conditions when replenishment is low and there is a negative balance in the basin.

Explain whether the drought plan was developed with input from multiple stakeholders. Was the drought plan developed through a collaborative process?

The WMP was developed in collaboration with Coachella Valley water agencies and the public via the environmental review public outreach process.

Does the drought plan include consideration of climate change impacts to water resources or drought?

The impacts of climate change on CVWD's water supplies and supply reliability are addressed in the WMP. Climate change impacts have the potential to affect Colorado River and SWP water supplies, which are Coachella Valley's two major sources of imported water. The WMP notes that climate change impacts are anticipated to be most significant to SWP supplies, which are anticipated to fluctuate in availability due to decreased annual flows. With increased supply variability comes the potential for more frequent and more severe droughts, which can impact SWP imported water supplies and increase groundwater overdraft conditions. Furthermore, the WMP notes that climate change has the potential to increase water demands, which would further exacerbate groundwater overdraft.

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* would provide infrastructure necessary to make existing Colorado River allotments available. This project would help to mitigate groundwater overdraft, and therefore could help the region respond to climate change.

Describe how your proposed drought resiliency project is supported by an existing drought plan.

One of the major elements of the WMP that CVWD is implementing is source substitution to reduce groundwater overdraft. Source substitution is defined in the WMP as "the delivery of an alternate source of water to users that currently pump groundwater." The *Bermuda Dunes In-Lieu Groundwater Recharge Project* is part of the source substitution program of the WMP. Source substitution projects reduce groundwater extraction, allowing the groundwater to remain in storage, thus reducing overdraft. The WMP calls for several near-term projects, one of which is listed as "Increased use of the Mid-Valley Pipeline project to reduce overdraft in the upper portion of the Coachella Valley by connecting golf courses and reducing groundwater pumping by those course." The *Bermuda Dunes In-Lieu Groundwater Recharge Project* is a component of the larger

Mid-Valley Pipeline project, and will deliver Colorado River water to the Bermuda Dunes Country Club for golf course irrigation to offset groundwater pumping.

Recharge facilities in the upper and lower reaches of the Indio Sub-basin have alleviated some groundwater overdraft issues, specifically in the areas directly surrounding the recharge facilities. Despite efforts to improve overdraft conditions via groundwater replenishment, the Coachella Valley Groundwater Basin remains in overdraft. The central portions of the Valley (the Mid-Valley area) are most severely impacted by overdraft, and groundwater levels in this area have continued to decline. CVWD is implementing the *Bermuda Dunes In-Lieu Groundwater Recharge Project* as a cost-effective alternative to physically recharging the groundwater basin in the Mid-Valley via direct injection or percolation with imported water.

1.4.3 Evaluation Criterion C: Severity of Actual or Potential Drought Impacts to be Addressed by the Project

The following sections address potential drought impacts to specific sectors in the Coachella Valley if no action is taken associated with the project. Impacts could occur to agriculture and the environment, and could also have impacts associated with subsidence, and groundwater quality.

What are the ongoing or potential drought impacts to specific sectors in the project area if no action is taken, and how severe are those impacts?

Impacts to Agriculture

Private agricultural groundwater wells (especially in the lower portion of the Coachella Valley) are generally shallow and pump water from the semi-perched aquifer zone of the groundwater basin.[12] Wells located in the semi-perched aquifer zone are those that are at most risk of experiencing operational issues due to declining groundwater levels. Groundwater overdraft could cause shallow groundwater wells to run dry entirely, resulting in the loss of a water supply for some agricultural water users. Shallow groundwater wells that continue to operate with declining groundwater levels would require increased energy consumption to pump water from lower elevations. Both of these overdraft-related operational issues would have an impact on agricultural water users that rely solely on shallow groundwater wells and would likely put the Region at risk of not meeting existing agricultural water demands. Given the historic correlation between groundwater basin overdraft and reduced groundwater basin replenishment during drought years, and the fact that imported water deliveries have been impacted as a result of recent droughts, it is possible that the Region could encounter groundwater basin overdraft-related impacts to the agricultural industry without implementation of replenishment activities such as the *Bermuda Dunes In-Lieu Groundwater Recharge Project*.

Impacts to the Environment

The Coachella Valley is an arid region that contains a variety of plant and animal species and habitats, which are largely adapted to withstand the Region's high temperatures, low rainfall conditions, and intermittent flash floods.[13] Despite the adaptability of the Region's ecosystems, there may be species or habitats that are affected by the drought. The Coachella Valley Multiple Species Habitat Conservation Plan (MSHCP) addresses changing climate circumstances, including droughts, and acknowledges that drought conditions may adversely affect species and habitats if they cannot adapt to changing conditions. The Coachella Valley MSHCP identifies monitoring groundwater pumping as a priority to protecting various habitats and species in Coachella Valley.

[12] Coachella Valley Regional Water Management Group. 2014. 2014 Coachella Valley IRWM Plan.
[13] CVWD. 2011. Subsequent Program Environmental Impact Report (EIR): CVWMP 2010 Update.

The Coachella Valley MSHCP acknowledges that impacts to species and habitat are not likely to occur in a drought that is less than three years in length, because historic rainfall data indicates that it is not uncommon for the Region to experience a one to two-year dry period. [14] Due to the length of the current drought, which has been ongoing since 2013, it is possible that the drought could impact local habitats and species in the Coachella Valley.

Subsidence

As stated previously, land subsidence is an adverse impact related to groundwater overdraft, which is currently occurring in the Mid-Valley Area. As a result of differential land subsidence in the Mid-Valley area, there has been a recent loss to the original flow capacity of the Coachella Canal. CVWD is currently working with Reclamation on a project to relocate a portion of the Coachella Canal in the Mid-Valley Area that has been impacted by land subsidence.[15] Without implementation of replenishment projects to address overdraft, land subsidence could continue to occur, and could continue to have adverse impacts on infrastructure that potentially threatens water supply availability throughout the Coachella Valley.

Water Quality Impacts

Reduced imported water available for replenishment as a result of the drought intensifies issues relating to hexavalent chromium (Cr6). Chromium is a constituent of concern that is naturally occurring in the groundwater sub-basins of the Coachella Valley. In 2014, state regulators in California released a maximum contaminant level (MCL) for Cr6 of 10 parts per billion. This MCL is anticipated to substantially impact operations of water agencies within the Coachella Valley, and will require installation of costly water system improvements and water treatment facilities.

Approximately half of the Region's drinking water supply (groundwater) is now above MCL limits for Cr6, and prolonged drought conditions are anticipated to intensify the MCL concerns. Mapping of Cr6 occurrence in groundwater in the Coachella Valley demonstrates that Cr6 levels are highest along fault lines and in areas located away from the Region's recharge facilities. Specifically, mapping shows that areas surrounding recharge facilities, such as the Thomas E. Levy Groundwater Replenishment Facility located in the lower portion of the Coachella Valley, are the only areas within which Cr6 does not exceed the newly-established MCL. This information shows that imported water used for groundwater basin replenishment, which does not contain Cr6, effectively dilutes Cr6 concentrations within groundwater to levels below the regulatory limit. Although some portions of the Region already exceed the MCL limits for Cr6, it is anticipated that as the drought persists and groundwater basin replenishment activities continue to decline, Cr6 levels could increase in areas within the Region where the concentration is currently below the MCL. Replenishment activities associated with the *Bermuda Dunes In-Lieu Groundwater Recharge Project* help to introduce additional supplies to the region to effectively dilute Cr6 levels.

1.4.4 Evaluation Criterion D: Project Implementation

Describe the implementation plan of the proposed project. Please include an estimated project schedule that shows the stages and duration of the proposed work.

CVWD is currently completing design and engineering for the proposed project. It is anticipated that these activities will be completed in October 2016. Once design and engineering is complete, CVWD will begin construction activities, which are anticipated to require 15 months to complete.

[14] Coachella Valley Association of Governments (CVAG). 2007. Final Recirculated Coachella Valley Multiple Species Habitat Conservation Plan. September 2007. Available at: http://www.cvmshcp.org/Plan_Documents.htm

[15] CVWD. 2014. Initial Study Checklist/Draft Mitigated Negative Declaration for the Coachella Canal Water Conveyance System Relocation Project – Silverrock. February.

As shown in **Figure 1-5,** a 23-month construction timeframe has been allocated to allow for additional construction time if necessary, which will ensure that the project is complete by September 28, 2018.

Describe any permits that will be required and process for obtaining permits.

CVWD anticipates the need for several permits, including:

- Encroachment permits for construction within the ROW from the City of Indio and the County of Riverside
- Permit for construction within the ROW for the Coachella Canal from Reclamation
- Permit for use of non-potable water from the State Water Resources Control Board

All permitting activities will be completed by CVWD as part of the Engineering task. The permits required for the project are standard permits that will be secured by CVWD as part of normal construction activities. In addition, CVWD anticipates that Reclamation will need to review environmental documentation for the project and make an environmental concurrence finding. The project schedule has additional time (an 8-month buffer) to allow for any additional time that may be required to make a concurrence finding and incorporate comments or additional requirements from Reclamation.

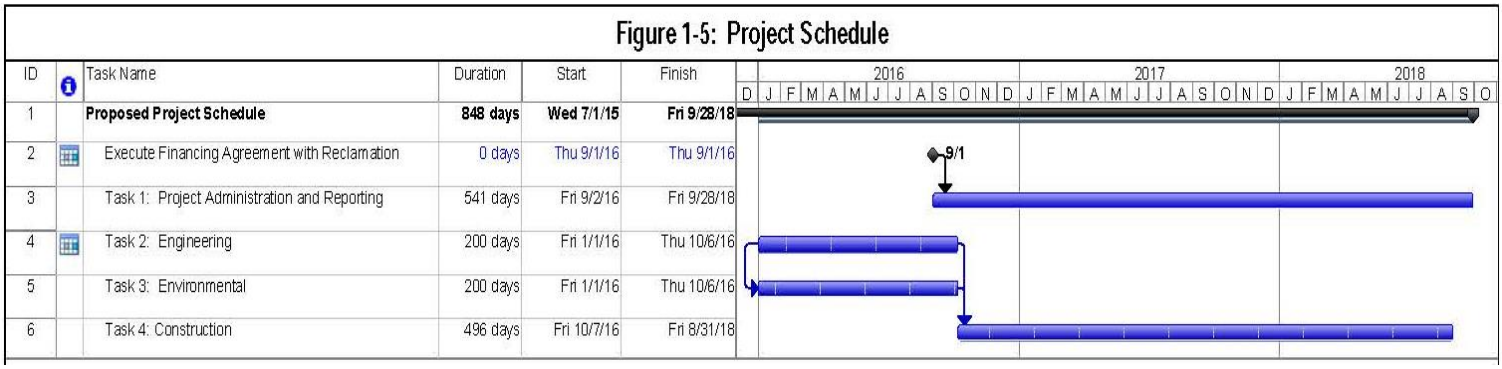
Identify and describe any engineering and design work performed specifically in support of the proposed project.

Design of the project includes completing preliminary, draft, and final design documents and specifications that meet requirements set forth by CVWD. For this process, CVWD has hired a contractor that will complete geotechnical investigations and design drawings. All design drawings will be reviewed by CVWD staff to ensure that they meet required specifications. Drawings will be revised, as necessary to meet CVWD requirements.

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

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* is part of CVWD's overall Mid-Valley Pipeline project, which has been approved by CVWD's Board of Directors. No additional policies or administrative actions are required to implement the project.

Figure 1-5: Project Schedule



1.4.5 Evaluation Criterion E: Nexus to Reclamation

How is the proposed project connected to a Reclamation project or activity? Does the applicant receive Reclamation project water?

The Coachella Canal and irrigation distribution system was constructed as part of the Boulder Canyon Project Act of 1928 to deliver Colorado River water into the Imperial Valley and the Coachella Valley. Colorado River water has been delivered to the Coachella Valley from the

Coachella Canal since 1949, and has been used to supplement groundwater pumping. CVWD continues to operate and maintain the Coachella Canal and distribution system.

Is the project on Reclamation project lands or involving Reclamation facilities?

As indicated in Section 1.4.4, the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is directly connected to the Coachella Canal, and a permit from Reclamation would be required as part of project implementation. Water that would be delivered as part of the project would be provided from Reclamation facilities and in accordance with agreements between CVWD and Reclamation. Water that is delivered to the Coachella Valley via the Coachella Canal is used for irrigation for the benefit of the groundwater basin underlying ID1, which was established to pay for the Coachella Canal system. Bermuda Dunes Country Club is within ID 1 and has paid ID 1 property taxes since that boundary was established.

Is the project in the same basin as a Reclamation project or activity? Will the proposed work contribute water to a basin where a Reclamation project is located?

The project is located within the Southeast California Regional Basin, and will, therefore, contribute water (via in lieu recharge) to a basin where a Reclamation project is located.

Will the project help Reclamation meet trust responsibilities to any tribe(s)?

The project will help increase sustainable management of groundwater resources in the Coachella Valley for all users, including several Native American Tribes that are located in the region and rely upon the groundwater basin as their primary source of water supply.

1.5 Performance Measures

The purpose of the *Bermuda Dunes In-Lieu Groundwater Recharge Project* is to reduce groundwater overdraft by providing non-potable water supply for golf course irrigation for the Bermuda Dunes Country Club in lieu of groundwater, which would reduce groundwater extraction and associated overdraft in the Mid-Valley area where overdraft has been most persistent.

There are two primary quantifiable benefits from the *Bermuda Dunes In-Lieu Groundwater Recharge Project:* to make additional water supplies available and to improve management of water supplies. These benefits are detailed in Evaluation Criterion A. CVWD's method of quantifying the benefits of the project are explained in the following sections.

Make Additional Water Supplies Available

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* will make approximately 1,040 AFY of additional supplies available by providing infrastructure to connect the Bermuda Dunes Country Club to the Coachella Canal, which will allow non-potable Colorado River water to be delivered to the site. The amount of water that is made available as a result of the project will be measured by CVWD at metering facilities that will be installed so that CVWD can properly track and bill the Bermuda Dunes Country Club for Colorado River water deliveries.

Improve Management of Water Supplies

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* will improve management of approximately 1,040 AFY of supplies. Currently, the project site is provided irrigation water from locally-pumped groundwater. As a result of implementation of the project, these groundwater supplies will be replaced with non-potable Colorado River water, which will improve basin management by decreasing groundwater pumping by 1,040 AFY. The amount of groundwater pumping that is offset as a result of the project will be measured by CVWD at metering facilities that will be installed so that CVWD can properly track and bill the Bermuda Dunes Country Club for Colorado River water deliveries.

2 Environmental and Cultural Resources Compliance

An Initial Study and MND is being prepared for the *Bermuda Dunes In-Lieu Groundwater Recharge Project*.[16] This document is a second-tier review specifically for the *Bermuda Dunes In-Lieu Groundwater Recharge Project*; tiered from the Coachella Valley Water Management Plan 2010 Update Final Subsequent Program Environmental Impact Report (collectively referred to as SPEIR). The MND clarifies the potential environmental impacts of the Project as related to the SPEIR. Potential impacts are discussed below.

2.1 Impacts to the Surrounding Environment

Earth-disturbing construction activities would be associated with construction of the non-potable water pipeline, and construction of the pump station. Digging and trenching would be required for pipeline construction; however, this construction will include returning the ground surface to preconstruction conditions. The pump station would be located above-ground and would include construction of approximately 125 square feet of impervious surfaces, and would include minimal site grading activities. As discussed in the MND, soil erosion may result from the earth-disturbing construction activities associated with the Project due to disturbed soils or stockpiles that may be present during construction. There is also a potential for soil erosion; however, soil erosion will be mitigated to the extent practicable via implementation of Best Management Practices (BMPs), in accordance with applicable permits.

Wind erosion of soils, resulting in fugitive dust were analyzed in the MND. Fugitive dust resulting from construction activities were determined to be below the South Coast Air Quality Management District's (SCAQMD) daily threshold for both $PM_{2.5}$ and PM_{10}. Additionally, ground surfaces primarily consist of golf course turf and paved roads. Any portions of the alignment where bare soil exists will be adequately compacted to minimize erosion and fugitive dust. Disturbed ground surfaces along the pipeline alignment would be returned to pre-construction conditions

The MND for this Project concluded that the *Bermuda Dunes In-Lieu Groundwater Recharge Project* will not result in substantial soil erosion or loss of top soil.

Potential Impacts to Air Quality

Minimal amounts of air pollutant emissions may be generated during construction of the *Bermuda Dunes In-Lieu Groundwater Recharge Project.* Air pollutant emissions would result from the operation of construction equipment and vehicles, as well as workers commuting to and from the construction site. Estimated quantities of construction air pollutant emissions are provided in the MND and are based upon emissions factors established in the California Air Resources Board (CARB) and provided by SCAQMD. Comparison of the estimated quantities of air pollutant emissions to the SCAQMD daily thresholds show that the estimated quantities of air pollutant emissions are well below the daily thresholds, nor would there be a cumulatively considerable net increase in air pollutant emissions. Therefore, air pollutant emissions estimated to be generated by the *Bermuda Dunes In-Lieu Groundwater Recharge Project* would be less than significant.

Potential Impacts to Water Quality and Quantity

Increased stormwater runoff can occur with an increase in impervious surfaces. Increased stormwater runoff has the potential to impact water quality. Above ground facilities consisting of a pump station and appurtenances would be constructed as a part of the *Bermuda Dunes In-Lieu Groundwater Recharge Project,* resulting in the creation of approximately 125 square feet of

[16] CVWD. 2016. Initial Study and Draft Mitigated Negative Declaration for the Bermuda Dunes Country Club Non-Potable Water Golf Course Connection Project. March.

impervious surfaces. Due to the small area of the new impervious surface associated with the Project, and the pervious surfaces that would remain surrounding this facility, any resulting increase in stormwater runoff is expected to negligible.

Potential Impacts to Habitat

The majority of the Project's pipeline alignments are located within existing paved streets and within the existing Bermuda Dunes Country Club and does not have the potential to adversely impact sensitive habitats.

The portion of the site where the pump station and proposed non-potable water pipeline that extends from the pump station to the easternmost paved edge of Avenue 43 contains an undeveloped area that may constitute habitat for sensitive species. A biological resources assessment of the pump station site and portion of the pipeline alignment located in the undeveloped area was conducted. Results of the biological resources assessment determined that the site contains high-quality habitat for the Coachella Valley milk vetch and low-quality habitat for the Coachella Valley fringe-toed lizard, both of which are covered species under the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP). However, the CVMSHCP does not require avoidance or minimization measures for these species outside of the CVMSHCP conservation area. The Project site is not located within the CVMSHCP conservation area, and therefore, no mitigation measures are require for these two species.

A marginally suitable habitat exists along the Coachella Canal for the burrowing owl (*Athene cunicularia*), a California Special Species of Concern as designated by the California Department of Fish and Wildlife (CDFW). To avoid or reduce the potential for impacts to this protected species, the MND includes a mitigation measure to conduct a preconstruction burrowing owl survey within fourteen days prior to commencement of ground-disturbing activities. If owls are present, burrows will be flagged and buffer areas will be created around the owl burrows. Impacts to the burrowing owl will be less than significant with the implementation of this mitigation measure.

2.2 Listed Species

There are no species listed or proposed to be listed as Federal threatened or endangered species in the Project area; however, the Coachella Valley giant sand treader cricket was identified on the Project site during the biological resources assessment, and habitat for the burrowing owl was identified in the Project area. Although the giant sand treader cricket has no state or federal protection status, it is a covered species under the CVMSHCP. The Project is not anticipated to have a substantial impact on the Coachella Valley giant sand treader cricket due to the relatively small permanent aboveground footprint. Potential impacts associated with the burrowing owl, which is protected by the CDFW, are discussed in the preceding section; however, impacts are anticipated to be less than significant with mitigation incorporated.

Furthermore, the Project would not adversely affect any riparian habitat or other areas identified as sensitive natural communities, as there are no such areas located on the Project site. The Project site is located within the plan area of the CVMSHCP; however, based on the biological resources assessment, the Project site is not located within a conservation area of the CVMSHCP.

2.3 Wetlands or Surface Water

The Project area does not contain any federally protected wetlands or other surface waters that potentially fall under CWA jurisdiction as "Waters of the U.S.", nor are any wetlands located

directly adjacent to the Project site. The nearest significant body of surface water in the Project area is the Salton Sea, which is located approximately 19 miles southeasterly of the site.

2.4 Water Delivery System

The non-potable water delivery system associated with the Project has not yet been constructed. The Coachella Canal, which the project would connect to, was constructed from 1938 to 1948, and is currently being re-aligned due to subsidence issues, as previously mentioned.

The Project would not impact CVWD's potable water delivery system, as the Project consists of facilities for the transmission of non-potable water. Additionally, the Project does not have a potable water demand.

2.5 Irrigation Systems

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* would not modify or affect individual features of CVWD's irrigation system.

2.6 Buildings and Structures

The Coachella Canal is designated as Site 33-005705 in the California Historical Resources Inventory. While the site is not currently listed on the National Register of Historic Places, it could potentially be eligible for listing. Besides the Coachella Canal, no other cultural resources were identified within or adjacent to the Project's Area of Potential Effects (APE). Site 33-005705 includes the entire length of the Coachella Canal, greater than 120 miles, which is also known as the Coachella branch of the All-American Canal, and was constructed between 1938 and 1948 to bring Colorado River water to agricultural development in the Coachella Valley.

Based on its consideration of the reasons for the Coachella Canal's historic significance (overall design and construction methods) and the Project's impacts upon the canal (removal and replacement of a small portion of the canal's concrete lining as required for construction of the inlet structure and pump suction piping), the Cultural Resources report that was completed for the MND concluded that the Project would not result in an adverse effect or a substantial adverse change in the overall historical characteristics and integrity of the canal. Therefore, no known historic properties or historical resources would be adversely impacted by the Project.

2.7 Archaeological Sites

There are multiple Native American tribes and associated Tribal Lands located within the Coachella Valley. These lands and sites throughout the Coachella Valley contain known archaeological sites. The majority of the Project site is located within existing paved streets and within the Bermuda Dunes Country Club, all of which have been previously graded and developed. However, due to proximity to a portion of the Holocene Lake Cahuilla, the APE is relatively high in sensitivity for prehistoric archaeological remains in subsurface deposits.

A cultural survey was conducted to determine the potential for adverse impacts associated with the portion of the site where the pump station will be constructed, as well as the portion of the pipeline alignment that extends from the pump station through undeveloped land. As a result of the survey, and coordination with local tribes, CVWD will incorporate two mitigation measures to avoid or reduce potential impacts upon cultural resources. Impacts are anticipated to be less than significant with mitigation incorporated.

2.8 Environmental Justice Considerations

As indicated previously, a MND is being completed for the Project, and it is not anticipated that any significant impacts that can be mitigated to less-than-significant levels would occur as a result of the Project. Therefore, the proposed Project would not have a significant adverse effect on any

population, including low-income or minority populations. The project area itself is located within Bermuda Dunes, which is an affluent area that does not contain any mapped economically disadvantaged communities.

2.9 Tribal Lands

As part of the MND process, CVWD contacted potential local tribal representatives in accordance with provisions of California Assembly Bill 52.[17] The two tribes that responded in writing stated that the APE is part of their tribal traditional use area, and recommended Native American and archaeological monitoring. The recommended monitoring activities have been included as mitigation measures in the MND; with incorporation of these mitigation measures, the Project would not limit access to and ceremonial use of Indian sacred sites or result in other significant impacts on tribal lands.

2.10 Noxious Weeds or Invasive Species

The *Bermuda Dunes In-Lieu Groundwater Recharge Project* would not contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area.

[17] California Legislature. 2014. AB-52 Native Americans: California Environmental Quality Act. Available: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140AB52

3 Existing Drought Contingency Plan

The 2010 *Coachella Valley Water Management Plan Update* serves as CVWD's existing drought contingency plan, and is discussed in *Section 1.4.2, Evaluation Criterion B: Drought Planning and Preparedness*. The full plan is attached as **Appendix A** to this application.

CVWD is also in the process of completing a Colorado River Water Shortage Contingency Plan in accordance with Reclamation's Drought Response Framework, 2015. And has held two public meetings with the Board of Directors to receive input. A draft of this plan is also attached as **Appendix A** to this application.

4 Required Permits or Approvals

CVWD anticipates the need for several permits, including:

- Encroachment permits for construction within the public right-of-way (ROW) from the City of Indio and the County of Riverside
- Permit for constructing within the ROW for the Coachella Canal from the United States Bureau of Reclamation
- Permit for use of non-potable water from the State Water Resources Control Board

All permitting activities will be completed by CVWD as part of the Engineering task. The permits required for the project are standard permits that will be secured by CVWD as part of normal construction activities.

In addition, CVWD anticipates that Reclamation will need to review environmental documentation for the project and make an environmental concurrence finding. The project schedule has additional time (an 8-month buffer) to allow for any additional time that may be required to make a concurrence finding and incorporate comments or additional requirements from Reclamation.

5 Letters of Support

Golf courses are an important part of the Coachella Valley economy. An August 2015 assessment of the Coachella Valley golf industry found that the estimated 123 golf courses in the Coachella Valley represent approximately 14% of California's golf industry. In 2014 the golf industry in the Coachella Valley generated $476 million in gross revenue, and directly employed more than 8,000 local workers.[18] The large presence of golf courses in the Coachella Valley attracts many tourists, who generated approximately $745.6 million in tourism-related spending in 2014.[19] Given the economic benefits the golf industry has on the Coachella Valley, the economic viability of this industry is important to the regional economy.

Recognizing the nexus between water availability and long-term sustainability of the golf industry, the Southern California Golf Association and representatives of local golf course associations met with CVWD to form the Coachella Valley Golf and Water Task Force in 2013. The primary purpose of the Golf and Water Task Force is to reduce the amount of water used by golf courses in the Coachella Valley. In addition, the Golf industry is committed to supporting CVWD in its efforts to implement provisions of the Water Management Plan. A support letter for the *Bermuda Dunes In-Lieu Groundwater Recharge Project* from the Southern California Golf Association is included in this application as **Appendix B.**

[18] Tourism Economics. 2015. Economic Impact of the Coachella Valley Golf Industry.
[19] Tourism Economics. 2015. Economic Impact of the Coachella Valley Golf Industry.

6 Official Resolution

On March 8, 2016, CVWD's Board of Directors passed Resolution No. 2016-11 (see **Figure 6-1**), which verifies the following:

- Identify of the official with legal authority to enter into agreement (General Manager)
- Board of Directors who supports the application
- Capability of the applicant to provide the funding match
- Willingness of applicant to work with Reclamation to meet established deadlines for entering into a cooperative agreement

Figure 6-1: CVWD Official Resolution

RESOLUTION OF THE BOARD OF DIRECTORS OF
COACHELLA VALLEY WATER DISTRICT

RESOLUTION NO. 2016-11

BE IT RESOLVED by the Board of Directors of the Coachella Valley Water District assembled in regular meeting this 8th day of March, 2016, that application be made to the United States Bureau of Reclamation (USBR) to obtain a WaterSMART Grant for the Drought Resiliency Program per Funding Opportunity Announcement No. R16-FOA-DO-006 and to enter into an agreement to receive a grant for the Coachella Valley Water District; and

BE IT FURTHER RESOLVED that the Board of Directors supports the application that will be submitted on the 11th day of April, 2016, and that the Coachella Valley Water District is able to provide the minimum 50% funding match specified in the funding plan for the application; and

BE IT FURTHER RESOLVED that it hereby authorizes the General Manager to amend the Consulting Contract with RMC Water and Environment for Preparation of the WaterSMART grant, and authorize the District's portion of the application preparing cost in the amount of $20,598; and

BE IT FURTHER RESOLVED that the General Manager of the Coachella Valley Water District is hereby authorized and directed to prepare the necessary data, conduct investigations, file such application, and execute a grant agreement with the USBR in association with this application process. The Coachella Valley Water District will work with the USBR to meet established deadlines required for entering into a cooperative agreement to obtain the aforementioned grant funding; and

BE IT FINALLY RESOLVED that this Board resolution authorizes a total of $20,598.

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STATE OF CALIFORNIA)
COACHELLA VALLEY WATER DISTRICT) ss.
OFFICE OF THE SECRETARY)

I, MARICELA CABRAL, Acting Assistant Secretary of the Board of Directors of the Coachella Valley Water District, DO HEREBY CERTIFY that the foregoing is a full, true and correct copy of Resolution No. 2016-11 adopted by the Board of Directors of said District at a regular meeting thereof duly held and convened on the 8th day of March, 2016, at which meeting a quorum of said Board was present and acting throughout. The Resolution was adopted by the following vote:

Ayes:	Five
Directors:	Powell, Nelson, O'Dowd, Pack, Estrada
Nos:	None

Dated this 8th day of March, 2016.

(SEAL)

Maricela Cabral
Acting Assistant Secretary