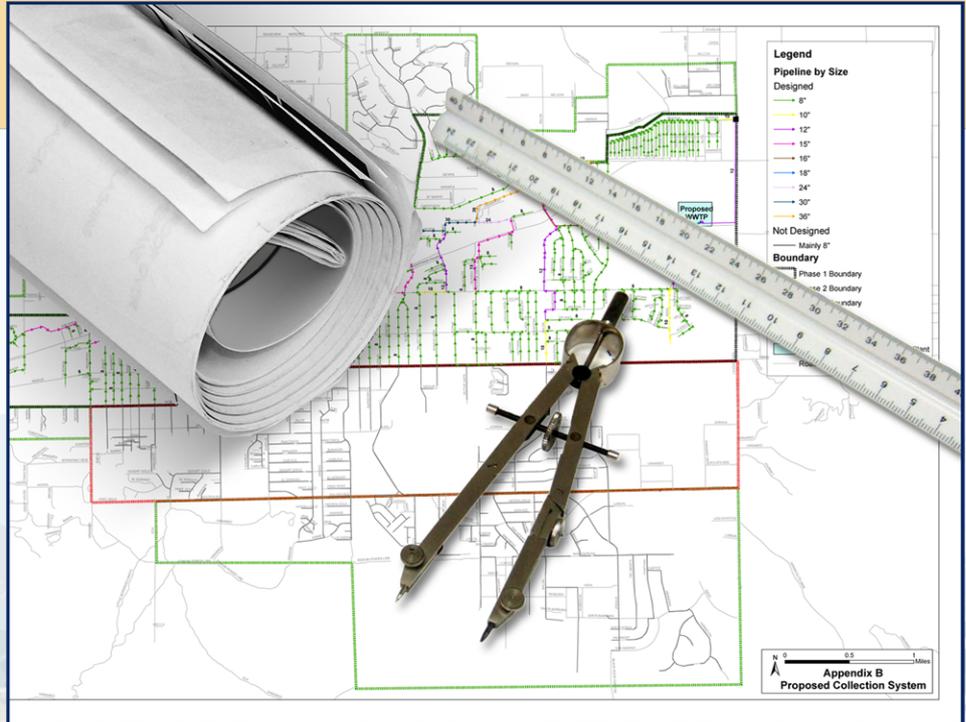


**HDWD Wastewater Treatment and Reclamation Project Facility and  
Collection System Planning and Design, December 2012**

**Att3\_IG2\_WorkPlan\_2of3**



## Wastewater Treatment and Reclamation Project

# Facility and Collection System Planning and Design

DECEMBER 2012

Title XVI Financial Assistance  
Agreement Number 8FC350245

**Project Applicant**  
Hi-Desert Water District  
55439 29 Palms Highway  
Yucca Valley, CA 92284

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The logo for Carollo Engineers, featuring the name "carollo" in a blue, italicized font with a swoosh above it. Below the name is the tagline "Engineers...Working Wonders With Water®".  
**carollo**  
Engineers...Working Wonders With Water®

<b>Application for Federal Assistance SF-424</b>		Version 02
*1. Type of Submission  <input type="checkbox"/> Preapplication  <input type="checkbox"/> Application  <input type="checkbox"/> Changed/Corrected Application	*2. Type of Application  <input type="checkbox"/> New  <input type="checkbox"/> Continuation  <input type="checkbox"/> Revision	*If Revision, select appropriate letter(s):  * Other (Specify)
*3. Date Received:		4. Application Identifier:
5a. Federal Entity Identifier:		*5b. Federal Award Identifier:
<b>State Use Only:</b>		
6. Date Received by State:		7. State Application Identifier:
<b>8. APPLICANT INFORMATION:</b>		
* a. Legal Name:		
* b. Employer/Taxpayer Identification Number (EIN/TIN):		*c. Organizational DUNS:
<b>d. Address:</b>		
*Street 1: Street 2: *City: County: *State: Province: Country: <span style="float: right;">*Zip/ Postal Code:</span>		
<b>e. Organizational Unit:</b>		
Department Name:		Division Name:
<b>f. Name and contact information of person to be contacted on matters involving this application:</b>		
Prefix: <span style="float: right;">First Name:</span> Middle Name:		
*Last Name: Suffix:		
Title:		
Organizational Affiliation:		
*Telephone Number:		Fax Number:
*Email:		

**Application for Federal Assistance SF-424**

Version 02

9. Type of Applicant 1: Select Applicant Type:

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

\*Other (specify):

\*10. Name of Federal Agency:

11. Catalog of Federal Domestic Assistance Number:

CFDA Title:

\*12. Funding Opportunity Number:

\*Title:

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

\*15. Descriptive Title of Applicant's Project:

**Attach supporting documents as specified in agency instructions.**

**Application for Federal Assistance SF-424**

Version 02

16. Congressional Districts Of:

\*a. Applicant

\*b. Program/Project:

Attach an additional list of Program/Project Congressional Districts if needed.

17. Proposed Project:

\*a. Start Date:

\*b. End Date:

**18. Estimated Funding (\$):**

- \*a. Federal
- \*b. Applicant
- \*c. State
- \*d. Local
- \*e. Other
- \*f. Program Income
- \*g. TOTAL

**\*19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

- a. This application was made available to the State under the Executive Order 12372 Process for review on
- b. Program is subject to E.O. 12372 but has not been selected by the State for review.
- c. Program is not covered by E.O. 12372

\*20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes", provide explanation.)

- Yes
- No

21. \*By signing this application, I certify (1) to the statements contained in the list of certifications\*\* and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances\*\* and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)

\*\*I AGREE

\*\* The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

**Authorized Representative:**

Prefix: \*First Name:

Middle Name:

\*Last Name:

Suffix:

\*Title:

\*Telephone Number:

Fax Number:

\*Email:

\*Signature of Authorized Representative:

Date Signed:

**Application for Federal Assistance SF-424**

Version 02

**\*Applicant Federal Debt Delinquency Explanation**

The following field should contain an explanation if the Applicant organization is delinquent on any Federal Debt. Maximum number of characters that can be entered is 4,000. Try and avoid extra spaces and carriage returns to maximize the availability of space.

**BUDGET INFORMATION - Construction Programs**

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

COST CLASSIFICATION	a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Columns a-b)
1. Administrative and legal expenses	\$ 319,323 .00	.00	\$ 319,323 .00
2. Land, structures, rights-of-way, appraisals, etc.	\$ 45,134 .00	.00	\$ 45,134 .00
3. Relocation expenses and payments	\$ .00	.00	\$ 0 .00
4. Architectural and engineering fees	\$ 7,896,708 .00	.00	\$ 7,896,708 .00
5. Other architectural and engineering fees	\$ 153,559 .00	.00	\$ 153,559 .00
6. Project inspection fees	\$ .00	.00	\$ 0 .00
7. Site work	\$ .00	.00	\$ 0 .00
8. Demolition and removal	\$ .00	.00	\$ 0 .00
9. Construction	\$ .00	.00	\$ 0 .00
10. Equipment	\$ .00	.00	\$ 0 .00
11. Miscellaneous	\$ 27,000 .00	1,483,932.00	\$ 1,510,932 .00
12. SUBTOTAL (sum of lines 1-11)	\$ 8,441,724 .00	1,483,932.00	\$ 8,441,724 .00
13. Contingencies	\$ .00	.00	\$ 0 .00
14. SUBTOTAL	\$ 8,441,724 .00	0.00	\$ 8,513,859 .00
15. Project (program) income	\$ .00	.00	\$ 0 .00
16. TOTAL PROJECT COSTS (subtract #15 from #14)	\$ 8,441,724 .00	0.00	\$ 8,513,859 .00
FEDERAL FUNDING			
17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share.) Enter the resulting Federal share.	Enter eligible costs from line 16c Multiply X _____%		\$ 2,128,465 .00

**ASSURANCES - CONSTRUCTION PROGRAMS**

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0042), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.**

**NOTE:** Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the Awarding Agency. Further, certain Federal assistance awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the assistance; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will not dispose of, modify the use of, or change the terms of the real property title, or other interest in the site and facilities without permission and instructions from the awarding agency. Will record the Federal interest in the title of real property in accordance with awarding agency directives and will include a covenant in the title of real property acquired in whole or in part with Federal assistance funds to assure non-discrimination during the useful life of the project.
4. Will comply with the requirements of the assistance awarding agency with regard to the drafting, review and approval of construction plans and specifications.
5. Will provide and maintain competent and adequate engineering supervision at the construction site to ensure that the complete work conforms with the approved plans and specifications and will furnish progress reports and such other information as may be required by the assistance awarding agency or State.
6. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
7. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
8. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
9. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
10. Will comply with all Federal statutes relating to non-discrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

11. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal and federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
12. Will comply with the provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
13. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333) regarding labor standards for federally-assisted construction subagreements.
14. Will comply with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
15. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
16. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
17. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
18. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
19. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL	TITLE	
APPLICANT ORGANIZATION		DATE SUBMITTED



# Table of Contents

<b>1.0</b>	<b>Executive Summary .....</b>	<b>1</b>
<b>2.0</b>	<b>Technical Project Description .....</b>	<b>2</b>
<b>3.0</b>	<b>Evaluation Criteria .....</b>	<b>5</b>
	<b>Criterion 1: Water Supply .....</b>	<b>5</b>
	<b>Criterion 2: Status of Project.....</b>	<b>8</b>
	<b>Criterion 3: Environment and Water Quality .....</b>	<b>11</b>
	<b>Criterion 4: Renewable Energy and Energy Efficiency .....</b>	<b>14</b>
	<b>Criterion 5: Cost of Water and Other Project Benefits .....</b>	<b>16</b>
	<b>Criterion 6: Reclamation' Obligations and Benefits to Rural or Economically Disadvantaged Communities.....</b>	<b>20</b>
	<b>Criterion 7: Watershed Perspective .....</b>	<b>20</b>
<b>4.0</b>	<b>Environmental Compliance .....</b>	<b>22</b>
<b>5.0</b>	<b>Required Permits and Approvals.....</b>	<b>31</b>
<b>6.0</b>	<b>Description of Expenditures .....</b>	<b>32</b>
<b>7.0</b>	<b>Funding Plan .....</b>	<b>35</b>



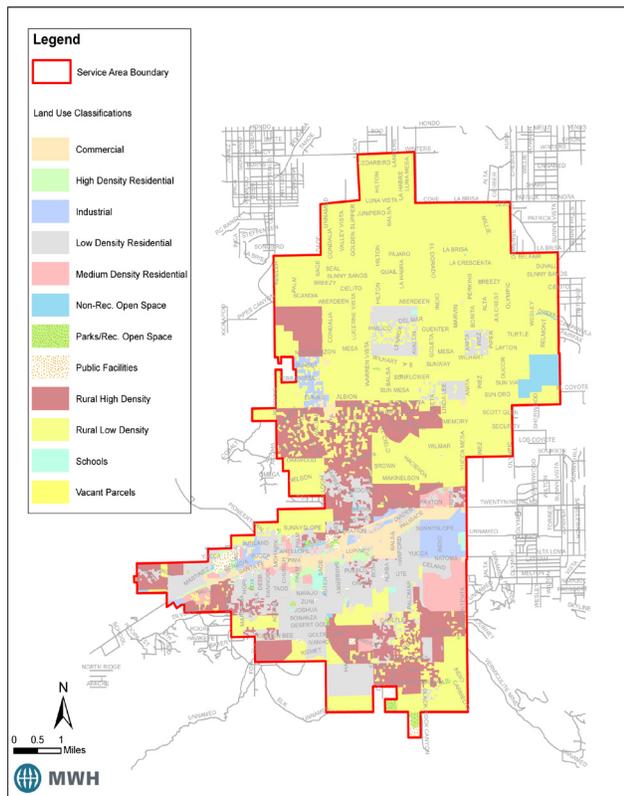
# Executive Summary

The Hi-Desert Water District is pleased to submit its proposal for the Wastewater Treatment and Reclamation Project – Wastewater Treatment Facility and Collection System Planning and Design component of its Title XVI approved project to the Bureau of Reclamation dated December 12, 2012.

The District is located in the Town of Yucca Valley, San Bernardino County, California and serves the water needs of the Town of Yucca Valley, a disadvantaged community, and unincorporated portions of San Bernardino County. Once constructed, the Project will reclaim up to 2,200 acre-feet of water annually for the purpose of recharging the Warren Valley Groundwater Basin and reducing dependency and demand on California State Water Project, Bay-Delta supply.

The Town of Yucca Valley does not currently have wastewater collection and treatment service and relies exclusively on septic tanks for its wastewater treatment and disposal. These septic tanks are degrading the groundwater quality of the Warren Valley Groundwater Basin. The District is working with the state’s Regional Water Quality Control Board (RWQCB) to resolve the degradation of the region’s drinking water supply. The District’s Title XVI Feasibility Study, Mitigated Negative Declaration determined the best option for successful degradation mitigation is to construct a centralized wastewater treatment facility and collection system to eliminate the septic tanks in Yucca Valley. As there are no local streams or appropriate outlets to discharge secondary treated effluent, the project will also provide tertiary treatment to meet California Title 22 requirements for reclaimed water. Reclaimed water will be percolated into the Warren Valley Groundwater Basin where water levels have been depleted, causing a dependency on imported State Water Project (SWP) supplies.

Figure 1. Service Area and Land Use Classifications



The District, as a member of an integrated regional water management group, has committed to the full utilization and development of drinking water supplies within the Region’s source area. The proposed project is part of a plan to decrease the region’s reliability on water exported from the San Joaquin-Sacramento River (Bay-Delta) system. Construction of the project will contribute to the economic health of the region by mitigating degradation of the local groundwater basin, providing affordable high-quality water, and ensuring it will be available as the region develops. The subject proposal intends to fund the planning and design work for the Project.



# Technical Project Description

The Hi Desert Water District (HDWD) currently serves more than 9,800 potable water connections within a 57 square mile service area that includes the Town of Yucca Valley and parts of unincorporated San Bernardino County, as shown in the adjacent figure.

The District depends entirely on wells for its water supply and the town depends exclusively on septic tanks and leach fields for the disposal of wastewater. The District purchases SWP water from the Mojave Water Agency (MWA) to supplement groundwater through recharge basins. The yield of the groundwater basin is not sustainable because the natural recharge rate is inadequate. The two primary water sources to replenish the groundwater basin in the area are the imported deliveries from the SWP and the septic and irrigation return flows.

The District is in the planning and design stage of their Wastewater Treatment and Water Reclamation Project (Project). HDWD has assumed the role of planning and building a Wastewater Treatment & Water Reclamation System to protect the groundwater and satisfy the State requirements for groundwater protection.

The purpose of this project is to eliminate septic systems within the District's service area to stop degradation of the groundwater supply. In addition to improving the quality of the groundwater basin, this project will provide for a more drought resistant groundwater supply through groundwater recharge. The Project includes the facilities required to collect, treat, and reclaim wastewater within the identified Phase 1 area of the District's service area. As shown in the following page, three phases of collection system implementation have been identified within the District's service area. Although Phases 2 and 3 of the Project will be needed at some time in the future, this project focuses on construction of the facilities required to collect and treat flow from the Phase 1 area only. The initial project focus on Phase 1 due to higher population density and potentially

greater impact on the potable water supply wells. The District and the RWQCB will determine when Phase 2 and 3 need to be implemented. The Phase 1 collection system consists of approximately 405,800 linear feet of pipe from 8 to 36 inches in diameter and 3 pump stations. The District has already purchased the property required for the treatment and reclamation facilities. The treatment plant will be initially sized to treat 2 million gallons of wastewater a day (mgd). The District projects that approximately 1.60 mgd of wastewater flow will be treated at the facility by 2018. The treated wastewater will be discharged to onsite ponds where the water will percolate into the ground to recharge the groundwater basin.

Figure 2. HDWD Service Area

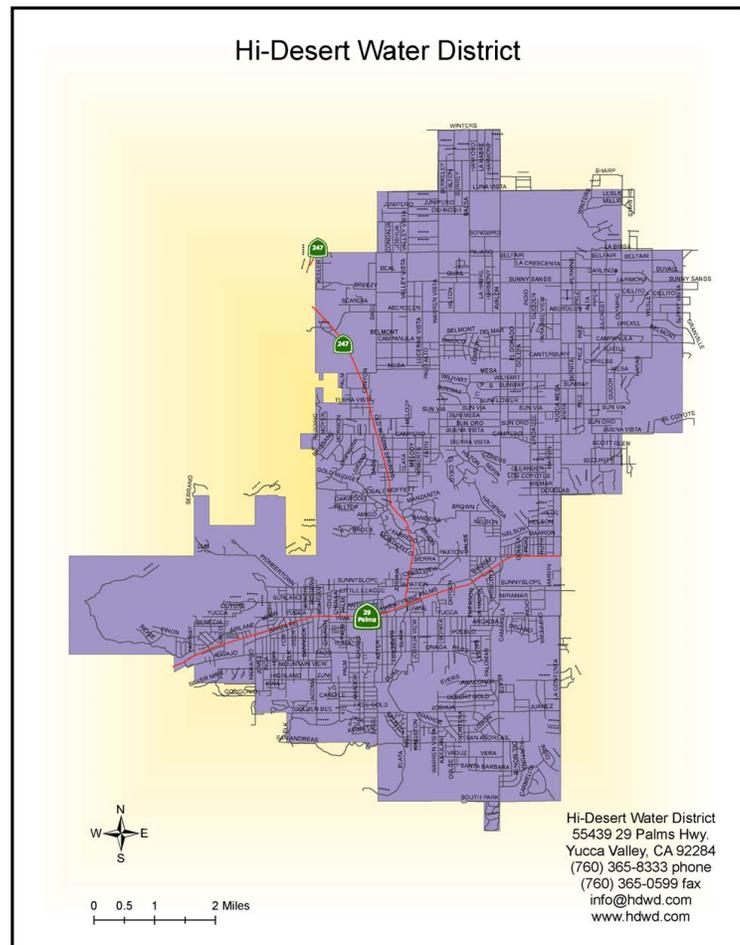
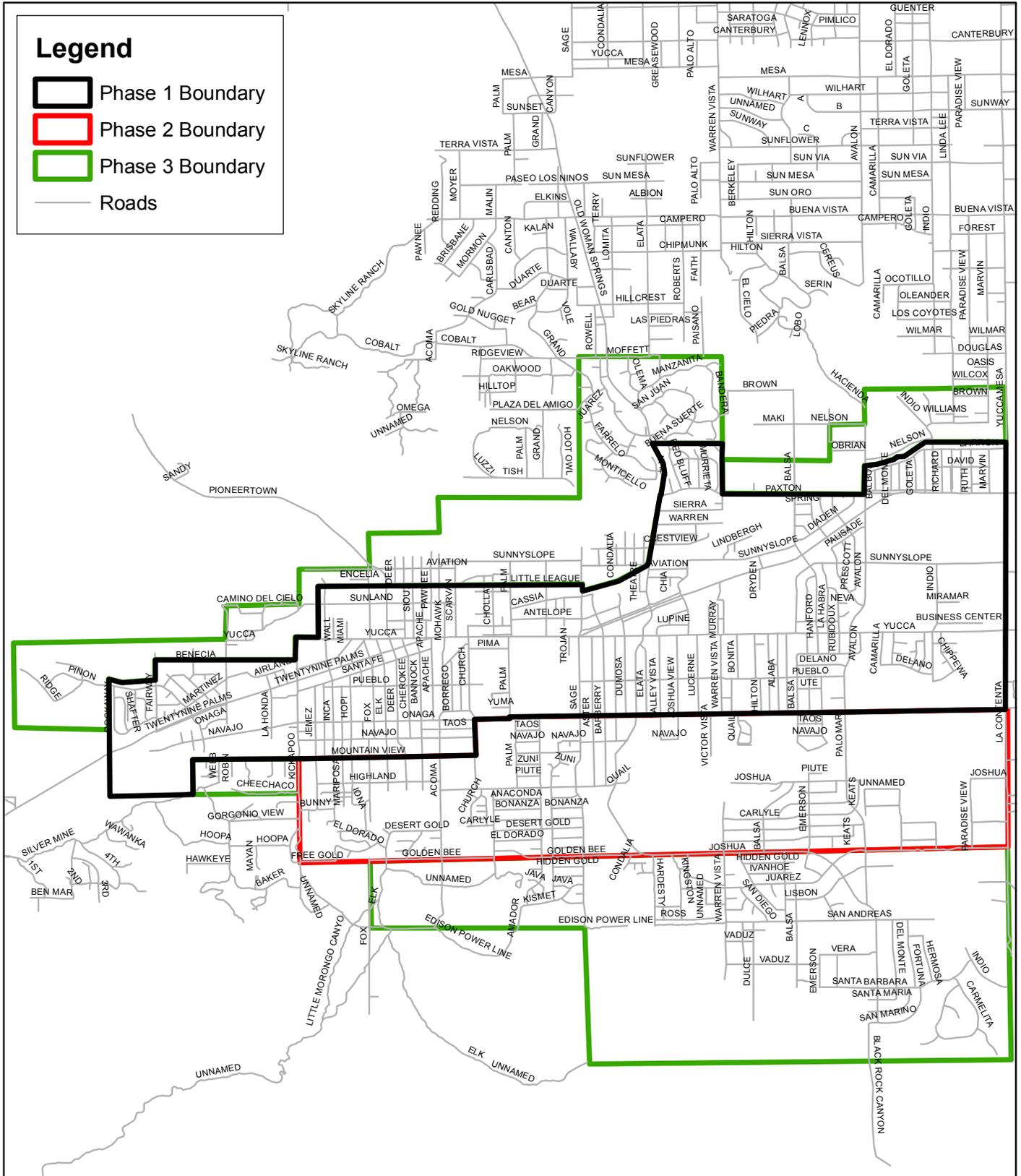


Figure 3. Project Phasing



The District submitted a Title XVI Feasibility Study to the USBR regional office in Temecula, California in July 2011; considerations for the overall project can be reviewed in that document. The District is requesting USBR funds for the planning and design phases of the project developed as a result of its feasibility study. The project intends to be ready to begin construction in 2014 or 2015.

## Planning and Design Implementation

The planning and design for the project consists of the following primary tasks:

1. Design of the collection system;
2. Design of the water reclamation facility;
3. Right-of-way acquisition;
4. Geotechnical engineering;
5. Program management;
6. Completion of the environmental review; and
7. Permitting.

At this time, the District has engaged Carollo as the Owner's Advisor (OA) and has selected Atkins North America (Atkins) as the design consultant for the collection system. Atkins was selected through a process that included a request for qualifications (RFQ), a request for proposals (RFP), and an interview. A preliminary alignment study was submitted in November 2012. A preliminary design report will be submitted March 1, 2013. The design is expected to be complete in March 2014.

Geotechnical investigations, right-of-way acquisition, permitting, and remaining work to complete the required environmental documentation will be completed during the collection system design. Construction of the collection system facilities is anticipated to begin by spring of 2014.

A similar selection process will be used to select a design consultant for the water reclamation facility. The selection process for the wastewater treatment and reclamation facility is anticipated to begin in February 2013. It is anticipated that the facility design consultant will be selected and design of the water reclamation facility will begin in May 2013. It is expected to take 12 to 18 months to complete the water reclamation facility design. Construction of the facility is anticipated to begin by summer 2014.

## Performance Measures

Design consultant teams will be required to submit monthly progress reports to the District to identify completed tasks, potential schedule delays, potential cost impacts, and anticipated activities for the following month. Regular reporting will allow the District to gauge the development of the project and ensure the project remains on schedule and on budget.



# Evaluation Criteria

## Criterion 1: Water Supply

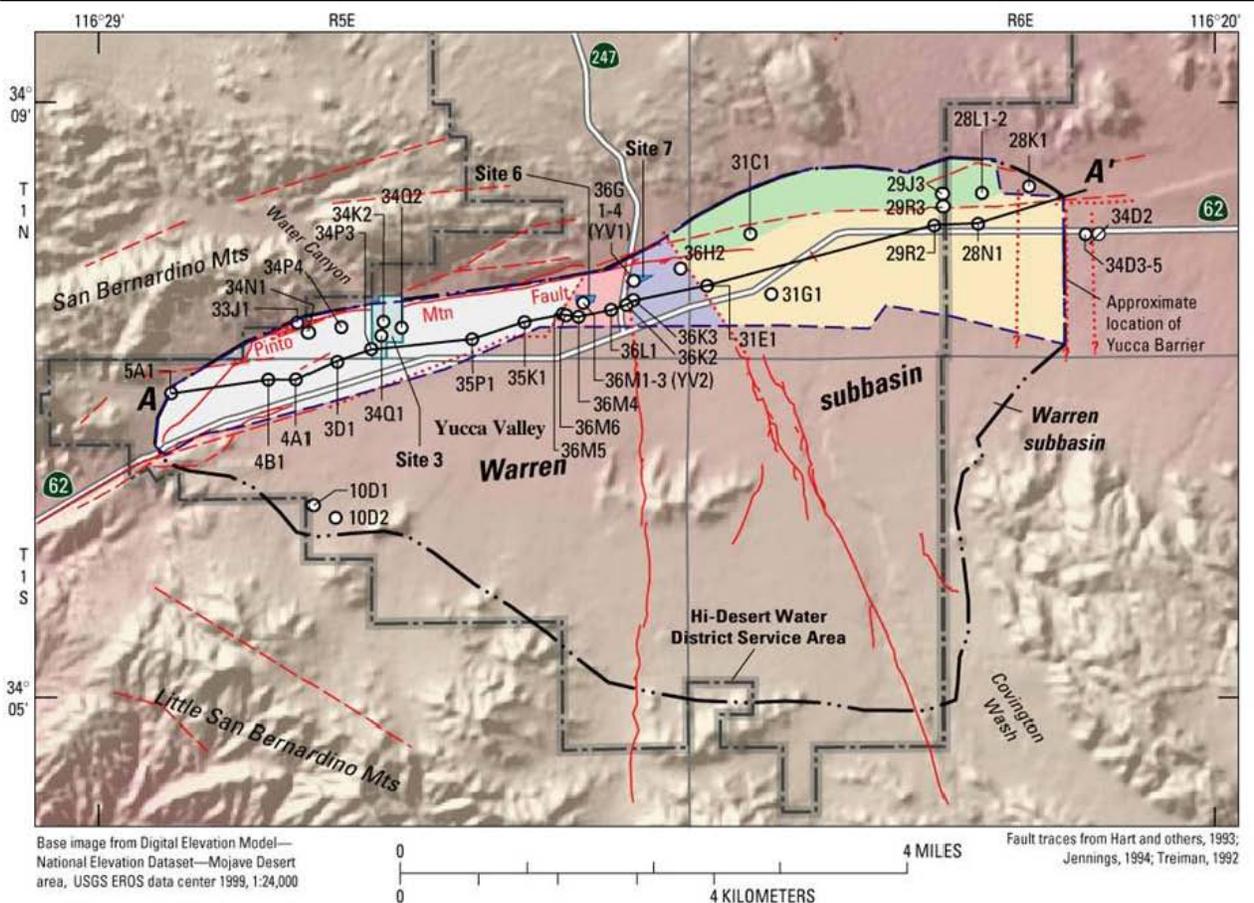
- Amount of water expected to be made available: Up to 2,200 AFY of water can be recovered through the reclamation process at the wastewater treatment facility.
- Demand reductions on existing facilities: Implementing the project eliminates the septic systems and contamination of the groundwater basin will be substantially slowed.
- Reduction of Water Diversions: This will eliminate the need to develop a new water supply for the region or expand the current deliveries of 678 AFY from the SWP to meet potable water demands.

The District delivers approximately 3,100 AFY of potable water through its water system. The existing water system consists of 16 storage reservoirs, 10 booster pump stations, 14 active groundwater wells, 21 pressure-reducing valves, and approximately 312 miles of pipeline. The District currently extracts approximately 3,100 acre-feet per year (AFY) from

their wells and has a maximum allocation of 4,282 AFY from the SWP, which is used to recharge the Warren Valley Groundwater Basin.

The District has pumping rights for a total of 2,422 AFY from their available groundwater sources. This requires 678 AFY of imported water from the SWP to meet current demands.

Figure 4. Warren Valley Groundwater Basin



Due to limited natural recharge, District officials have been seeking sources of supplemental water to replenish the groundwater basin. The District’s responsibility for the health of the groundwater basin does not stop at the boundary of the District’s service area. As part of the groundwater adjudication, the District was given the responsibility of keeping the entire Warren Valley groundwater basin in balance and ensuring that overdrafting of the groundwater basin does not occur. In collaboration with regional planning efforts, this project will assist in providing for the needs of the community and the region, now and in the future.

Both sources of water are being threatened due to recent events including court-ordered restrictions on the amount of water delivered from the SWP to Southern California, a long-term drought, population growth, climate change, and a below-average snowpack in the Sierra Nevada Mountains. Each of these supply conditions impacts the amount of water available to recharge the groundwater basin. The water reclamation component of the project will provide a supplemental, drought tolerant water source. This highly treated water will assist in replenishing Yucca Valley’s groundwater aquifer, which is essential to meeting future water demands in the region. Table 1 identifies the historic groundwater pumping and SWP deliveries required

to meet the area’s potable water demand and the historical groundwater extraction using data collected through 2005.

**Table 1. Historic Groundwater Extraction and SWP**

Fiscal Year	Warren Valley Basin AFY	Bighorn Desert View Water Agency Intertie	Ames/ Means Basin	Total	SWP Recharge
1993	2,316	593	0	2,910	0
1994	1,982	573	408	2,963	0
1995	1,713	497	585	2,795	1,340
1996	1,440	713	745	2,897	3,586
1997	1,955	124	703	2,782	4,776
1998	1,786	0	748	2,534	3,962
1999	1,840	0	840	2,680	2,211
2000	2,198	0	578	2,776	3,633
2001	2,168	0	656	2,823	3,891
2002	2,034	0	969	3,003	2,359
2003	2,721	0	454	3,175	2,987
2004	2,372	0	751	3,123	2,851
2005	2,341	0	781	3,121	3,996
Maximum	2,721	713	969	3,175	4,776
Minimum	1,440	0	0	2,534	0
Average	2,067	192	632	2,891	2,738

### Stretching Water Supplies Acre-Feet of Water Made Available Each Year

The subject project would protect the groundwater supply levels and sustain the integrity of the groundwater basin for the District by utilizing the reclaimed water as a source for recharging the groundwater basin. It is anticipated that up to 2,200 AFY of water can be recovered through the reclamation process at the wastewater treatment facility. The reclaimed water will offset a portion of current imported SWP deliveries equivalent to the amount of water reclaimed, making the offset SWP deliveries available for other uses such as Delta supply habitat restoration, recharge of other regional groundwater

Currently, the only groundwater replenishment sources for the District in the Warren Valley Groundwater Basin are the following:

- Recharge from natural rainfall. The natural yield of the groundwater basin does not meet current demands for water.
- Imported SWP water. The District currently purchases water through the MWA from the State Water Project to recharge the groundwater in order to meet current demand.

basins, etc. Because MWA is the water wholesaler for the region it may reduce the entire region’s need for SWP deliveries as the recharge will provide a drought tolerant self sustaining supply source for the region.

## Reduction, Postponement, or Elimination of New or Expanded Recycled Water Supplies

The primary benefit of this project is protecting the groundwater basin from further degradation. If this project is not constructed, the leachate from the septic systems will result in nitrate levels continuing to degrade the area drinking water supply. If this occurs, the Regional Water Quality Control Board will “shut off” the existing septic tanks without having an alternative wastewater collection and treatment alternative, seriously impacting the ability to live and conduct business within the Town of Yucca Valley. Additionally, the District, in conjunction with the MWA would be required to secure additional imported water deliveries in order to meet the region’s water demands. By implementing the subject project and eliminating the septic systems, the contamination of the groundwater basin will be substantially slowed. Percolating the reclaimed water back into the ground to recharge the groundwater basin will provide an additional “clean” water source that, over time, will help dilute the current levels of nitrate and allow the District to continue to use their current water source. This will eliminate the need to develop a new water supply for the region or expand the current deliveries of the SWP to meet potable water demands.

## Reduction in Federal Water Supplies

This project’s major beneficial impact is that it will alleviate a considerable level of demand for SWP purchases, which has been used to supplement the groundwater to meet potable water demands in the region. Additionally it will protect the groundwater quality by collecting and treating the sewage that would otherwise be sent to septic systems, and treating it to high quality tertiary standards for use in recharging the groundwater basin.

The reduction in demand for SWP supplies will assist the Bay-Delta by:

- Ensuring water supply reliability in the supplies within the Delta.
- Improving and safeguarding the Delta’s water quality.
- Restoring the Delta’s ecosystem by protecting the habitat of native species.

The District appreciates the need to contribute to demand reductions benefiting this sensitive water system, which is the subject of California and Federal rehabilitation.

## Reduction in Diversion from Natural Watercourses or Withdrawals from Aquifers

The District’s current model requires SWP deliveries equal to 125% of the aquifer production. Current aquifer production is approximately 3,100 AFY. This results in SWP deliveries of 3,875 AFY. Historic SWP deliveries from 1993 through 2005 have ranged from 1,340 AFY to 4,776 AFY with an average delivery of 2,738 AFY. If the treatment facility is able to produce the projected 2,200 AFY, SWP deliveries to the District could be reduced by up to 80% based on the historic average. The MWA has a SWP allotment of 82,800 AFY. If the maximum reclaimed water is produced, this could result in a 2.6% reduction in SWP water demand from MWA.

The State of California has established a State policy for reduced reliance on the California Bay-Delta for water supplies and mandated regional self-reliance. The new water code assists with the preservation of state and federal goals for the Bay-Delta; this project contributes to those goals and also addresses the need for regional self-reliance.

The role of this project is twofold:

- 1) stop groundwater degradation by eliminating the septic systems, and
- 2) reclaim the treated wastewater to use for groundwater recharge.

## Performance Measures and Quantifying Actual Benefits

This project is in the planning and design phase, so the exact performance measures of realized benefits are only projections at this time. However, it is anticipated that the groundwater basin levels and contaminant concentrations will continue to be monitored after the treatment facility is constructed and operational to determine the affect the recharge has on the basin. Ultimately the benefit will be quantified by the ability of the District to reduce its current SWP deliveries for recharge of the Warren Valley Basin. This will result in either reduced SWP deliveries needed, or redirected the SWP deliveries to assist in recharging the Ames Reche groundwater basin.

## Contribution to Water Supply Reliability

### Impact to Water Quality and Water Supply

This project will protect the groundwater basin from further degradation, improve water quality, and supply reliability. If this project is not constructed, the leachate from the septic systems will result in continued elevation of nitrate levels. It is anticipated that this project will produce up to 2,200 AFY of reclaimed water that will be used to recharge the groundwater basin. Percolating the reclaimed water back into the ground to recharge the groundwater basin will provide an additional “clean” water source that, over time, will help dilute the current levels of nitrate and help recharge the groundwater level to allow the District to continue to use the groundwater basin as its primary potable water supply.

### Continued Availability During Periods of Drought

The reclaimed water produced at the treatment facility will be a drought resistant supply. Wastewater is a direct by product of the amount of potable water used. In periods of drought when customers are typically asked to make significant conservation efforts, it is likely the amount of reclaimed water produced will be lower, but will still be available. Because the reclaimed water is a drought resistant supply, it will continue to be used to recharge the groundwater basin in years where SWP allotments may be reduced due to drought. The development of a reclaimed water source as part of this project will help protect the District during dry years by making the area less reliant on the SWP deliveries in order to meet their potable water demands.

## Criterion 2: Status of Project

- Status of authorized Title XVI project: The project has received \$2,417,500 from the Title XVI program, specifically for planning and design work.
- Readiness to proceed: The planning and design phase for the project is underway; the project has all necessary environmental documents and only requires the funding approvals to continue making progress.

## Federal Funding Provided to Date

Total estimated project costs are \$125 million. This includes approximately \$110 million for construction of Phase 1 facilities and \$15 million to develop a construction ready project. The subject project was initially approved for Title XVI funding in 1998. In 2006, 2007, and 2008, the U.S. Congress appropriated \$2.4 million for planning and design work on the District’s Title XVI approved project. Of this \$2.4 million, the District has received reimbursement to date of \$780,904.44 of Title XVI funds.

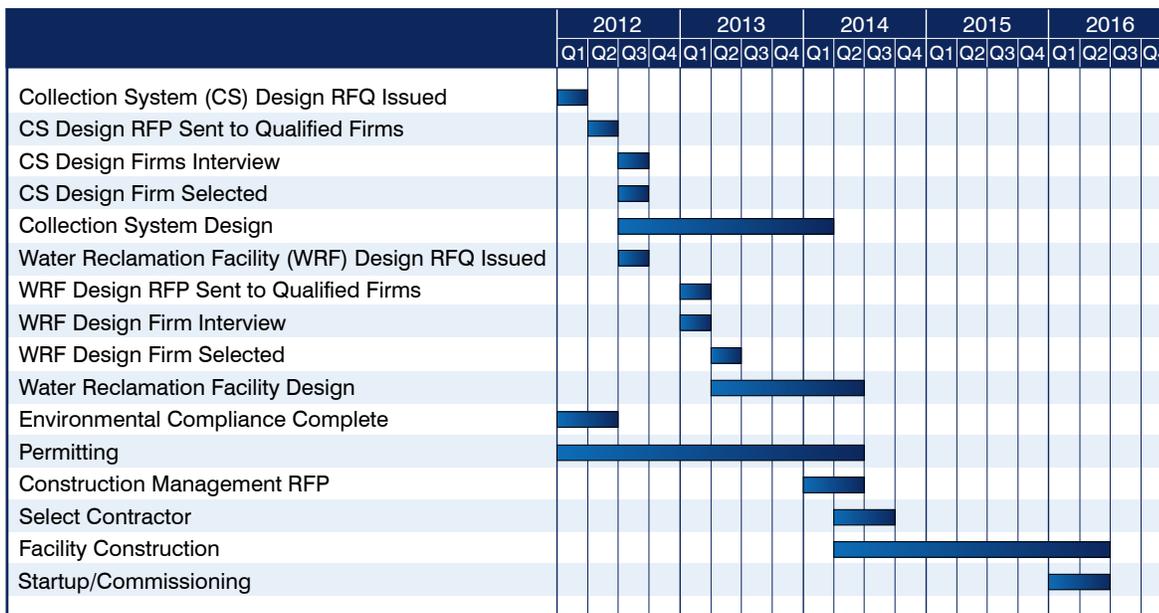
In addition to the Title XVI funds, the District has been awarded \$334,500 from the EPA State/Tribal Assistance Grant (STAG) program.

## Federal Funding Necessary to Satisfy the Authorized Federal Cost-Share

In order to fulfill the Congressional maximum cost share appropriation of \$20 million, an additional \$17,550,170 is required in Title XVI obligated funds to the region. The \$20 million authorization includes planning, design, and construction. Currently the District is in the planning and design phase. **In order to develop a construction ready project, the District is requesting an additional \$626,499 be obligated to the District in FFY 2013 for a total obligation of \$3,043,999.** This award, in combination with the obligation to date, represents 25 percent of the estimated planning and design costs from Federal funds (USBR).

The District continues to procure its 75 percent non-federal cost share to provide an acceptable Sponsor capability to pay for construction costs. The vote on the assessment district is anticipated to occur in September or October 2013. Additionally, there is a voter’s initiative for a 1/2 percent special tax for wastewater that is likely to be voted on in 2013. The District anticipates it will submit its capability to pay in Federal Fiscal Year 2013 to ensure eligibility for future construction cost funding opportunity announcements. The estimate of probable construction cost is approximately \$110 million in 2010 dollars. With appropriation of the current grant request, \$16,956,001 of the full authorization will remain. The authorization outstanding will represent less than 25 percent of the estimated construction cost of the project, thereby ensuring that the District will require no more than 25 percent of the project cost with Title XVI program (and other Federal) award obligations.

Figure 5. Project Schedule Through Construction



### Readiness to Proceed

#### Status of Necessary Environmental Compliance Measures

The District has prepared a joint California Environmental Quality Act (CEQA)/NEPA environmental document, termed an Initial Study/Environmental Assessment (IS/EA). This document, including responses to comments received, the Mitigation Monitoring & Reporting Program (MMRP), and other project related material prepared to address issues evaluated in the IS were compiled into a final Mitigated Negative Declaration (MND) dated June 2009.

- The District has adopted the final MND and MMRP.
- The State Clearing House number for the MND is SCH#2009061035.
- The CEQA documentation was completed October 7, 2009.
- The required NEPA documentation, including the FONSI, was completed in May 2012.

#### Status of Required State and Federal Permits

The permitting process has been started. The District received a draft copy of the Water Discharge Requirements from the Regional Water Quality Control Board in 2009; a final permit is expected prior to facilities startup. Obtaining environmental permits for the project will begin once the designs of the collection system and treatment facility have been adequately developed. For several of the permits, it is anticipated that meetings will take place early in design so that permitting agency

requirements can be incorporated for agency review prior to the 90 percent design phase. Most permitting agencies require 90 percent design documents in order to complete their review and issue a permit.

For this component of the Project, the District has budgeted the cost to begin communicating with the permitting agencies, meeting with the agencies, submission of permit applications, and preparation of supporting documents required for inclusion with the permit applications. The anticipated timeline for the permitting process is included in the schedule above.

All construction related permits will be obtained prior to bidding the project with the exception of local encroachment permits, which are typically the responsibility of the selected contractor. The District is currently working with the Regional Water Quality Control Board on the Waste Discharge Requirements for the water reclamation facility. Some regulatory permits and approvals will not be issued until construction of the facility is complete and start-up demonstrates compliance with requirements. Currently anticipated Federal, State, and local permits include:

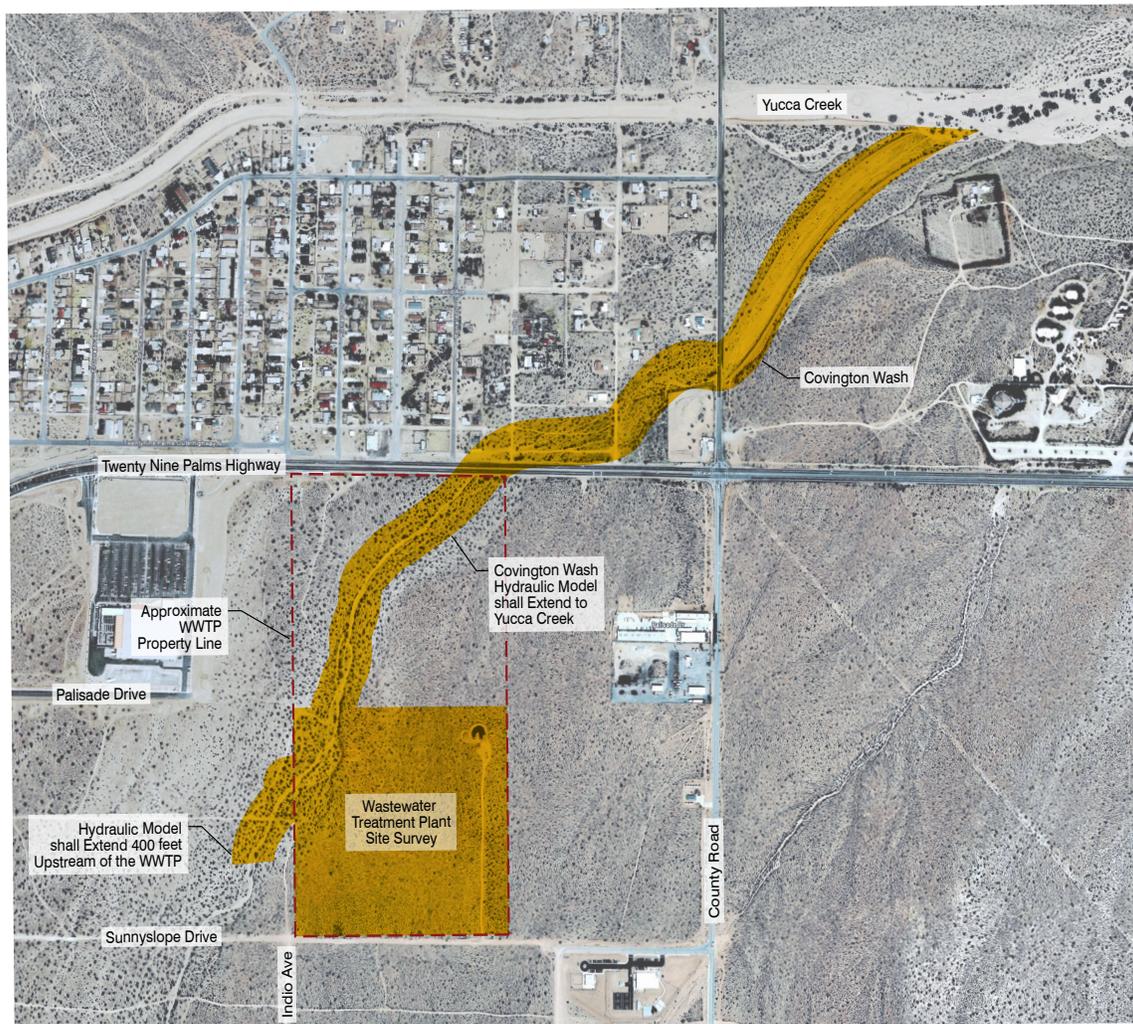
- California Department of Public Health.
- California Department of Fish and Game Streambed Alteration Permit.
- Town of Yucca Valley.
  - Encroachment, Grading, and Building Permits.
  - Conditional Use Permit.

- Mojave Air Quality Management District Authority to Construct and Permit to Operate.
- State Water Resources Control Board.
  - Components include Storm Water Pollution Prevention Plan.
  - Water Quality Management Plans.
- County of San Bernardino Flood Control District Encroachment Permit.
- County of San Bernardino Department of Public Health, Environmental Health Services, Safe Drinking Water Permit Section Well Permit to Drill and Well Abandonment Permit -Monitoring wells for the percolation pond retention basin will be required per CDPH

regulations. CDPH may require closure of existing drinking water wells within a certain distance/time from retention basin.

- Army Corps of Engineers Section 404 Permit.
- Regional Water Quality Control Board.
  - Waste Discharge Requirements.
  - Section 401 Permit.
- CALTRANS Encroachment Permit.
- CalOSHA, Mining and Tunneling.

Figure 6. Treatment Facility Surface Water Features



## Criterion 3: Environment and Water Quality

- There are no perennial or permanent water bodies, lakes, or streams, within the project area for the improvement to surface water bodies.
- The project improves groundwater by prevent increase in nutrient loading and reduce the nitrate concentrations in the groundwater basin, a primary component of the areas drinking water supply would be adversely affected.
- Project implementation will not have a direct impact on federally listed, threatened, or endangered species, the offset of SWP use may have upstream benefits to a large variety of Bay-Delta species.

### Quality Improvement to Surface Water and Groundwater

#### Surface Water Impact

The project area encompasses the sewer collection system and the treatment facility site. There are no perennial or permanent water bodies, lakes or streams, within the project area. There are several ephemeral or intermittent stream channels within the project area. None of these eight-to-ten ephemeral channels in the project area are formally named on the United States Geological Survey (USGS) Topographic maps of the project area. The streams originate in the Little San Bernardino Mountains to the south and in the Sawtooth Mountain ridge that bounds the project area to the north. The largest stream is locally referred to as “Yucca Wash.” During major precipitation events it collects flows from the tributary “blue line” stream channels shown on these USGS Topographic Maps (Yucca Valley North and South, and Joshua Tree North and South, 7.5’ Topographic Maps). For most of the treatment facility site and most of the remaining project area, surface runoff occurs as sheet flow that ultimately enters the alignment of the ephemeral channels. Note the term “blue line” refers to a stream channel with a defined bed and bank.

The proposed treatment facility site contains one surface water feature, a blueline, ephemeral desert wash, which traverses the western portion of the site. This ephemeral stream originates in the Little San Bernardino Mountains to the south.

For the remainder of the project area, the future sewer lines will occasionally cross an ephemeral stream channel along its alignment. In most cases these crossing will occur within existing paved and graded road rights-of-way. Based on the field survey of the sewer line alignment, no wetlands or riparian habitats are located within the proposed project area or along the pipeline alignments. Because these stream channels are isolated and ephemeral, the

preliminary finding in the initial study is that they are not subject to U.S. Army Corps of Engineers (Corps) Clean Water Act Section 404 jurisdiction, i.e., they are not waters of the United States.

On the other hand, the channels appear to be waters of the State of California and are within the jurisdiction of the California Department of Fish and Game (CDFG). A CDFG 1602 Streambed Alteration Agreement will need to be obtained for any disturbances of the ephemeral stream channels within the project area. Finally, it is also probable that the California Regional Water Quality Control Board, Colorado River Basin will assert jurisdiction under its Porter-Cologne responsibilities and require waste discharge requirements for these disturbances.

The proposed project operations will discharge effluent from the wastewater treatment plant to the District’s existing and proposed recharge basins. Therefore, since the proposed project will not discharge wastewater to surface waters, it has no potential to violate surface water quality standards or waste discharge requirements.

Figure 7. Existing Groundwater Recharge Basin



## Groundwater Impact

The water supplied to Yucca Valley is extracted from the Warren Valley and Ames Groundwater Basins. The District is the only water purveyor servicing the Yucca Valley area. The District obtains all of its water supplies from 14 active wells that pump groundwater from the Warren Valley Groundwater Basin.

According to a U.S. Geological Survey study, published in 1972 (USGS 1972), the Warren Valley Groundwater Basin was reported to be small and not exceeding 200 AFY of natural recharge. The most current estimate is that as little as 83 AFY of natural recharge occurs and approximately the same amount of water flows out of the groundwater basin, resulting in a net natural recharge of zero. Since the late-1990s, the District has been importing and recharging groundwater in recharge basins constructed for this purpose. The imported water has been used to offset and eliminate any continued cumulative contribution to overdraft of District operations.

A survey of groundwater quality revealed that dissolved nitrogen (NO<sub>2</sub> and NO<sub>3</sub>) levels, expressed as mg/L of N, ranged from 2-30.3 mg/L at some sampling point levels. Above the recommend 10 mg/L are considered unhealthy for routine human consumption (small babies may be at risk with even lower concentrations). The RWQCB raised concern regarding water supply quality. Studies identified the leachate from the septic tanks as the cause for groundwater quality degradation. This project is being implemented to address groundwater degradation resulting from septic tank leachate. If no action is taken to prevent increase in nutrient loading and reduce the nitrate concentrations in the groundwater basin, a primary component of the areas drinking water supply would be adversely affected.

The reclaimed water generated by this project will be used solely for groundwater recharge. This is an indirect application of reclaimed water where wastewater is collected and treated by the treatment facility. From the treatment facility, the treated effluent is diverted to recharge basins to supplement the groundwater storage.

The water quality and treatment requirements for the treatment facility will be established by the RWQCB through a Waste Discharge Requirements permit. In general, the treatment requirements will be based on the October 2005 Water Quality Control Plan – Colorado River Basin Region 7 (Plan), and set not to degrade the existing groundwater quality.

## Improvement to Flow Conditions in Natural Stream Channels

The subject project operations will discharge effluent from the wastewater treatment plant to the District's proposed recharge basins. Therefore, since the proposed project will not discharge wastewater to surface waters, it has no potential to violate or restore/enhance habitat for surface water species.

## Providing Water and Habitat for Federally Listed Threatened or Endangered Species

Focused surveys for desert tortoise, burrowing owl, and LeConte's thrasher were conducted along the project area. The surveys found that the proposed treatment facility site and the sewer collection system area of potential effect (APE) did not support any of these or any other sensitive species.

Although project implementation will not have a direct impact on federally listed, threatened, or endangered species, **the offset of SWP use may have upstream benefits to Delta Smelt and other Bay-Delta species.** Although the preliminary environmental studies have not been conducted specific to the impact of this project on the Bay-Delta, other studies have shown that the Bay-Delta is in crisis and decreased SWP water use would have beneficial impact to smelt and salmon species. Project implementation, while geared specifically for the local and regional groundwater quality and reliability benefits, will also contribute to the efforts of the restoration of the Bay-Delta. Reduced purchases and demand from the SWP through this project will help ensure the safety of water and habitat for the below listed species of concern:

### Plants

1. Adobe Lily, *Fritillaria pluriflora*
2. Ahart's Rush, *Juncus leiospermus* var. *ahartii*
3. Ahart's Whitlow-wort, *Paronychia ahartii*
4. Antioch dunes Evening-Primrose, *Oenothera deltoides* ssp. *Howellii* (SE, FE)
5. Beach Layia, *Layia canosa* [Picture](#)
6. Bearded Allocarya, *Plagiobothrys hystriculus*
7. Bearded Popcorn Flower, *Plagiobothrys hystriculus*
8. Boggs Lake Hedge-hyssop, *Gratiola heterosepala* (SE, FC)
9. Brewer's Dwarf-flax, *Hesperolinon breweri*
10. Butte County Meadowfoam, *Limnanthes poccosa* ssp. *California*

11. California Hibiscus, *Hibiscus californicus*  
More Information...
12. Caper-fruited Tropicodarpum,  
*Tropicodarpum capparideum*
13. Colusa Grass, *Neostapfia colusana* (SE, FC)
14. Contra Costa Buckwheat, *Eriogonum tuncatum*
15. Contra Costa Goldfields, *Lasrhenia conjugens*
16. Contra Costa Wallflower, *Erysimum capitatum* var. *angustafum* (SE, FE)
17. Crampton's Tuctoria, *Tuctoria mucronata* (SE, FE)
18. Delta Coyote-thistle, *Eryngium racemosum* (SE, FC)
19. Delta Tule-pea, *Lathyrus jepsonii* ssp. *jepsonii*
20. Diablo Rock-rose, *Helianthella castanada*
21. Diamond-petaled Poppy, *Eschscholzia rhombipetala*
22. Dudley's Lousewort, *Pedicularis dudleyi* (SR)
23. Fragrant Fritillary, *Fritillaria Eiliacea*
24. Gairdner's Yampah, *Perideridia gairdneri* ssp. *Gairdneri*
25. Green's Tuctoria, *Tuctoria greenei* (SR, FC)
26. Hairless Allocarya, *plagiobothrys glaber*
27. Hartweg's Golden Sunburst, *Pseudobahia bahiifolia*
28. Heartscale, *Atriplex cordulata* Pictures
29. Hinds' Walnut, *Juglans hindsii*
30. Hispid Bird's-beak, *Cordylanthus mollis* ssp. *Hispidus*
31. Large-flowered Fiddleneck, *Amsinckia grandiflora*
32. Legenere, *Legenere limosa*
33. Marin Knotweed, *Polygonum marinense*
34. Mason's Lilaepsis, *Lilaepsis masonii* (SR, FC)
35. Northcoast Bird's-Beak, *Cordylanthus maritimus* ssp. *Palustris*
36. Palmate-bracted Bird's-beak, *Cordylanthus palmatus*
37. Recurved Larkspur, *Delphinium recurvatum*
38. Sacramento Orcutt Grass, *Orcuttia viscida* (SE, FC)
39. Sacramento Valley Milk-vetch, *Astragalus tener* var. *ferrisae*
40. San Francisco Gumplant, *Findelia maritime*
41. Shippee Meadowfoam, *Limnanthes occosa* ssp. *California* (SE, FC)
42. Showy Indian Clover, *Trifolium amoenum*
43. Slender Orcutt Grass, *Orcuttida tenuis* (SE, FC)
44. Slough Thistle, *Cirsium crassicaule*
45. Soft Bird's-beak, *Cordylanthus mollis* ssp. *mollis* (SR, FC)
46. Solano Grass, *Tuctoria mucronata*
47. Sonoma Alopecurus, *Alopecurus aequalis* var. *sonomensis*
48. Suisun Aster, *Aster chilensis* var. *lentus*
49. Swamp Sandwort, *Arenaria paludicola*
50. Valley Sagittaria, *Sagittaria sanfordii*
51. Valley Spearscale, *Atriplex joaquiniana*  
Picture
52. Veiny Monardella, *Monardella douglasii* var. *venosa*
53. Wedge-leaved Horkelia, *Horkelia cuneata* ssp. *Jepsonii*

#### Mammals

1. Pacific Western Big-eared Bat, *PEecotus townsendii townsendii*
2. Riparian Brush Rabbit, *Sylvilagus bachmani riparius*
3. Salt Marsh Harvest Mouse, *Reithrodontomys raviventris* (SE, FC)
4. Salt Marsh Vagrant Shrew, *Sorex vagrans halicoetes*
5. San Francisco Dusky-footed Woodrat, *Neotomafuscipes annectens*
6. San Joaquin Kit Fox, *Vulpes macrotis mutica*
7. San Joaquin Valley Woodrat, *Neotomafuscipes riparia*
8. San Pablo California Vole, *Microtus californicus sanpabloensis*
9. Suisun Ornate Shrew, *Sorex omatus sinuosus*

#### Fish

1. Delta Smelt, *Hypomesus transpacificus*
2. Green Sturgeon, *Acipenser medirostris*
3. Hardhead, *Mylopharodon conocephalus*
4. Longfin Smelt, *Spirinchus thaleichthys*
5. Sacramento Perch (native population), *Archoplites inerruptus*

6. Sacramento Splittail, *Pogonichthys macrolepidotus*
7. Winter-run Chinook Salmon, *Oncorhynchus tshawytscha*

### Birds

1. American Peregrine Falcon, *Falco peregrinus anatum* (SE, FE)
2. Bald Eagle, *Haliaeetus leucocephalus* (SE, FE)
3. California Brown Pelican, *Pelecanus occidentalis californicus* (SE, FE)
4. California Black Rail, *Laterallus jamaicensis cotumiculus* (ST, FC) More information...
5. California Clapper Rail, *Rallus longirostris obsoletus* (SE, FE)
6. California Least Tern, *Sterna albifrons browni* (SE, FE)
7. California Yellow-Billed Cuckoo, *Coccyzus americanus Occidentalis* (ST, FC)
8. Greater Sandhill Crane, *Grus Canadensis tabida* (ST)
9. Swainson's Hawk, *Buteo swinsoni* (ST, FC)
10. Tricolored Blackbird, *Agelaius tricolor*

### Amphibians

1. California Red-legged Frog, *Rana aurora draytonii*
2. California Tiger Salamander, *Ambystoma tigrinum californiense*
3. Western Spadefoot Toad, *Scaphiopus hammondi hammondi*

### Invertebrates

1. Antioch Cophuran Robberfly, *Cophura hurdi*
2. Antioch Dunes Anthicid Beetle, *Anthicus antiochensis*
3. Antioch Mutillid Wasp, *Mymosula pacifica*
4. California Linderiella, *Linderiella occidentalis*
5. Ciervo Aegialian Scarab Beetle, *Coelus gracilis*
6. Conservancy Fairy Shrimp, *Branchinecta longiantenna*
7. Curved-foot Hygrotus Diving Beetle, *Hygrotus curvipes*
8. Hurd's Metapogan Robberfly, *Metapogon hurdi*

9. Lange's Metalmark butterfly, *Apodemia monno langei*
10. Longhorn Fairy Shrimp, *Branchinecta Eongi antenna*
11. Middlekauf's Shieldback Katydid, *Idiostatus middlekaufi* More information...
12. Sacramento Anthicid Beetle, *Anthicus sacramento*
13. Sacramento Valley Tiger Beetle, *Cicindela hirticollis abrupta*
14. San Joaquin Dune Beetle, *Coelus gracilis*
15. Valley Elderberry Longhorn Beetle, *Desmocerus californicus Dimorphus*
16. Vernal Pool Fairy Shrimp, *Branchinecta lynchi*
17. Vernal Pool Tadpole Shrimp, *Lepidurus packardi*

### Reptiles

1. Alameda Whip Snake, *Masticophis lateralis euryxanthus* (ST)
2. Giant Garter Snake, *Thamnophis Gigas*
3. Northwestern Pond Turtle, *Clemmys marmorata marmorata*

## Criterion 4: Renewable Energy and Energy Efficiency

- Addressing and incorporating renewable energy and energy efficiency solutions into the project could result in a 10 percent or more reduction in conventional energy consumption.

### Installation of Energy Efficient Systems

The facility planning process estimated power consumption for the treatment and collection facilities to be approximately 2.7 million kWh/year. It is anticipated that implementation of the energy efficiency measures described below could result in up to a 10 percent or more reduction in conventional power consumption. This anticipated reduction will be met through a combination of energy efficient equipment selection use of solar-electric and possibly wind power. The District has recently engaged in preliminary discussions with SunPower about purchase of solar equipment, solar power purchase agreement, and providing generated solar power back to the power grid. The District also continues to evaluate applicable technologies in

an effort to reduce the anticipated power demand. The District is considering a number of energy efficiency measures for both the collection system and treatment plant.

The District has implemented or is considering implementing the following energy efficiency measures for the collection system:

- Re-evaluation of the design criteria used in sizing the collection system facilities, resulted in pump station facilities nearly half the size of those identified in the Collection System Master Plan. This could result in up to a 5% reduction in the estimated power consumption.
- Work with Southern California Edison to evaluate the collection system design and find opportunities to incorporate additional energy efficiency measures.
- The use of solar-electric power at the three pump stations located within the collection system. The solar-electric power would be used to power some or all of the pump station facilities depending on the amount of solar-electric power that can be generated given the size of each pump station parcel and the amount of power required for each of the facilities. More information on the power required for each facility will be available after completion of preliminary design in March 2013.
- The use of variable frequency drives instead of constant speed motors at the pump stations.
- The use of premium efficiency motors where available.
- The use of energy efficiency lighting and motion and occupancy sensors at pump stations.

The District is considering implementing the following energy efficiency measures at the water reclamation facility:

- The use of solar-electric power to power some of the treatment processes.
- The use of wind energy.
- The use of VFDs for onsite pumping facilities.
- The use of energy efficiency lighting and motion and/or occupancy sensors.
- Work with Southern California Edison to evaluate the water reclamation facility design and find opportunities to incorporate additional energy efficiency measures.

Preliminary research at the Town of Yucca Valley has shown that there are limited tie-ins from potential solar projects to the Southern California Edison

(SCE) power-grid. If use of renewable energy is implemented, it is likely to be used only within the collection system and treatment facility and would not be expected to provide broader power supply benefits.

## Potential Renewable Energy Improvements

This project, in its initial phase, is projected to produce approximately 2,200 AFY of new recycled water supply. This volume alone is insufficient to facilitate power generation. Furthermore, this tertiary treated effluent cannot be directly combined with other water supplies that could be used to facilitate power generation in the area.

## Reduction in Energy Consumption

Over time, the completion of this project may contribute to a reduction in energy consumption. The current water supply is dependant on SWP supplies for recharging the groundwater basin to maintain the groundwater elevation. This project will produce 2,200 AFY of new water supply that will be percolated into the ground to augment the groundwater supplies. This may allow the District to reduce SWP deliveries currently required for groundwater recharge. The reduction in SWP deliveries will reduce SWP supply pumping. While studies have not been conducted to determine the savings in energy consumption that could be realized through reduced SWP deliveries, the energy required for percolation of the new tertiary treated water supply will be significantly less than the current energy consumption associated with pumping SWP supplies to recharge basins within the District's service area.

## Energy Consumption Compared to Other Similar Water Supply Options

If septic systems remain within the District's service area, it is likely an increase in SWP deliveries will be needed over time to further dilute the nitrate levels in the groundwater basin. While studies have not been conducted to compare the projected energy consumption from this alternative, the energy consumption anticipated by this project would be considerably less than that required for increased pumping of SWP supplies or implementation of a desalination project. As the subject project is part of a Reduction in Delta Water Dependency regional implementation plan, decreased reliance on imported supplies will also result in other positive environmental impacts.

As a water and wastewater service provider in a disadvantaged community, the District is committed to providing its services at the lowest possible cost. The District continues to evaluate opportunities to reduce energy use, reduce life-cycle costs, and maximize use of cost-effective renewable energy technologies.

### Criterion 5: Cost of Water and Other Project Benefits

- The District’s cost per acre/foot of recycled water should take into account that a majority of project costs are designated for the collection and treatment of wastewater.
- Costs associated with the production and use of recycled water is \$9.7 million dollars of an expansive projected estimated at \$125M in total.

### Project Cost by Acre-foot

The estimated total project cost for Phase 1 includes the cost of the Phase 1 treatment facility, the cost of the Phase 1 collection system, and other project delivery costs as summarized below.

Table 2. Estimated Construction Cost by Year

Calendar Year	Construction Cost
2009	N/A
2010	N/A
2011	N/A
2012	N/A
2013	N/A
2014	\$39,410,714
2015	\$47,292,857
2016	\$23,646,429

The estimated and actual costs to plan and design the project are listed in the table below.

Table 3. Project Delivery Cost

Phase 1 Water Reclamation Facility	\$36,960,000
Phase 1 Collection System	\$73,390,000
Planning, Pre-Design, and Project Delivery Costs <sup>(1)</sup>	\$14,650,000
<b>Total Estimated Phase 1 Cost<sup>(2)</sup></b>	<b>\$125,000,000</b>

Notes:

(1) Planning and project delivery costs presented do not total \$15,578,592 as it exclude some project delivery costs captured in the estimate of probable costs of the reclamation facility and collection system.

(2) All costs are presented in 2010 dollars and are based on the pre-design reports developed by MWH and the value engineering studies developed by VMS.

The estimated annual operations and maintenance costs, in 2010 dollars, for the operation of the Phase 1 facilities is as summarized in the table below. **The facility is expected to begin recycled water production for groundwater recharge once construction has completed in 2016.** The

Table 4. Estimated Annual O&M Cost

Annual Power Cost	\$280,000
Annual Operations Cost	\$1,285,000
Collection System Cost	\$ 605,000
<b>Total Estimated Phase 1 O&amp;M Cost</b>	<b>\$2,170,000</b>

anticipated facilities necessary for the tertiary treatment and percolation of recycled water for this project have an expected useful life of 20 years. The plant is still in the design stages and therefore, an estimate regarding replacement costs cannot be provided at this time. In general, the necessary UV Lights, and Filter Media, required for tertiary treatment have a 7 and 10 year replacement expectation, respectively. However, as the design is not yet complete, quantities and costs are not available at this time.

Although the conceptual documents for the treatment facility project included multiple project phases, the project capacity and scale was revised since the adoption of the conceptual documents. Construction of Phase 1 is likely to satisfy requirements to mitigate degradation for many years and is the most cost effective approach for the community. Although subsequent phases may still be needed, the time frame for these phases is unknown (it will be dependant on he impact Phase 1 Operations has on improving the groundwater basin). The District will continue to assess and work with the RWQCB to determine when facility expansion is required in the future. The projected wastewater flow to be treated and thus recharged to the groundwater basin from Phase 1 is as summarized below.

Due to the current low-growth period in the area, the volume and timing of build out flows is uncertain; thus, the projected Phase 1 flow in 2018 is assumed to represent the average annual water reclaimed from Phase 1 in the calculation of the cost per acre-foot. The calculation of the cost per acre-foot of the reclaimed water is summarized below.

The cost of borrowing is equivalent to the current CWSRF rate under the assumption that the District will finance the project using state loans.

## Project Cost Per Acre-foot Compared to Other Alternatives

HDWD currently has four primary sources of water supply – groundwater from the Warren Valley Groundwater Basin, groundwater from the Reche/Ames/Means Valley Groundwater Basin, septic system and irrigation return flows to groundwater, and SWP imports via MWA to recharge the Warren Valley Groundwater Basin.

Continued withdrawal of groundwater from the impacted Warren Valley Groundwater Basin without recharge using reclaimed water would require increased use of SWP imported supplies to meet an equivalent volume of water. Other alternatives include use of other water supplies for recharge of the groundwater basin such as desalination or increased purchased water supplies from other water agencies.

For a sustainable and reliable water supply the project in its current form is the primary solution. To mitigate groundwater degradation, the collection and treatment of wastewater in the water reclamation facility is mandatory. Without a nearby stream for effluent discharge, the wastewater treatment process must include tertiary treatment to meet California Department of Health requirements for percolation of treated effluent into the groundwater basin. Overall project cost for the collection and

conveyance of wastewater is \$X, the cost for basic primary and secondary treatment is \$Y. In order to recharge the groundwater basin, effluent must be treated to California Title 22 standards. This requires tertiary treatment requiring an additional cost of \$Z. The only cost attributed to water, for recycled water or ground water recharge are those costs associated with the tertiary treatment processes and percolation ponds.

## Increase in SWP Supplies

The District receives SWP supplies from MWA through the Morongo Basin Pipeline (MBP) and pursuant to the 1991 Agreement for Construction, Operation, and Financing of the Morongo Basin Pipeline Project (the MBP Agreement). MWA is a special act district formed by the California Legislature in 1959 and approved by the electorate in 1960 to help meet the water needs within its service area. One seventh of the MWA SWP supplies is dedicated to the MWA service area that includes the District. This one seventh of MWA supply is then further subdivided as follows to the four water agencies within the service area: HDWD (59%), Bighorn-Desert View Water Agency (9%), County Service Area No. 70 (5%), and Joshua Basin Water District (27%).

The California's Department of Water Resources (DWR's) "State Water Project Delivery Reliability Report 2009" (2009 SWP Report), provided an estimate of the reliability of the SWP supplies. The updated analysis shows that the primary component of the annual SWP deliveries will be less under current and future conditions, thereby decreasing the reliability of the existing SWP supplies, and reducing the likelihood that additional SWP supplies could be made available to meet the water provided by the subject project.

The subject project is part of a Reduction in Delta Water Dependency regional implementation plan and reliance on increased imported water supplies is inconsistent with identified regional water supply solutions. Costs to produce and deliver additional SWP supplies have not been developed, as this is not considered a viable alternative at this time.

The Delta stewardship council has determined that the broad influence of the Delta is precisely why the Delta crisis cannot be resolved by taking actions in 24 the Delta alone. Reduced reliance is to be achieved through a strategy of investing in improved local and regional supplies, conservation, and water use efficiency so that each region that depends on water from the Delta watershed shall improve its regional self-reliance. This project directly addresses

Figure 8. Warren Valley Basin Adjudication

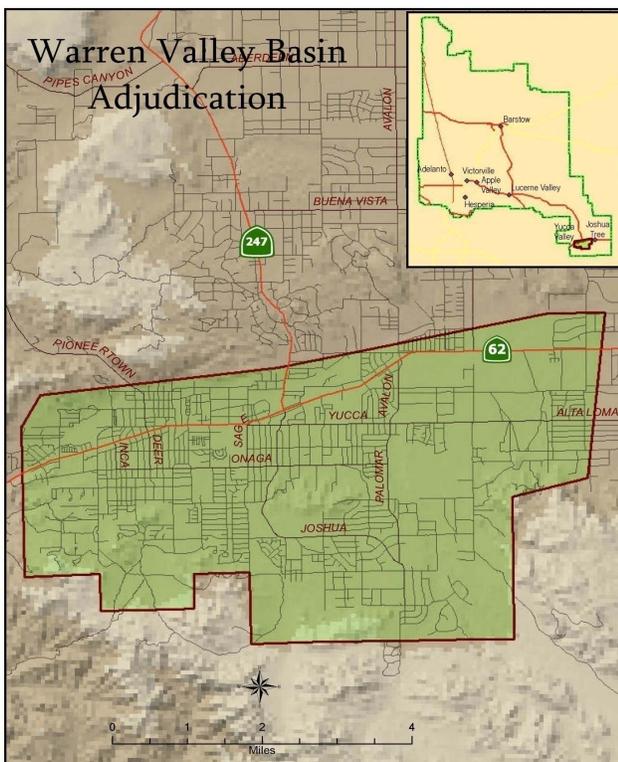
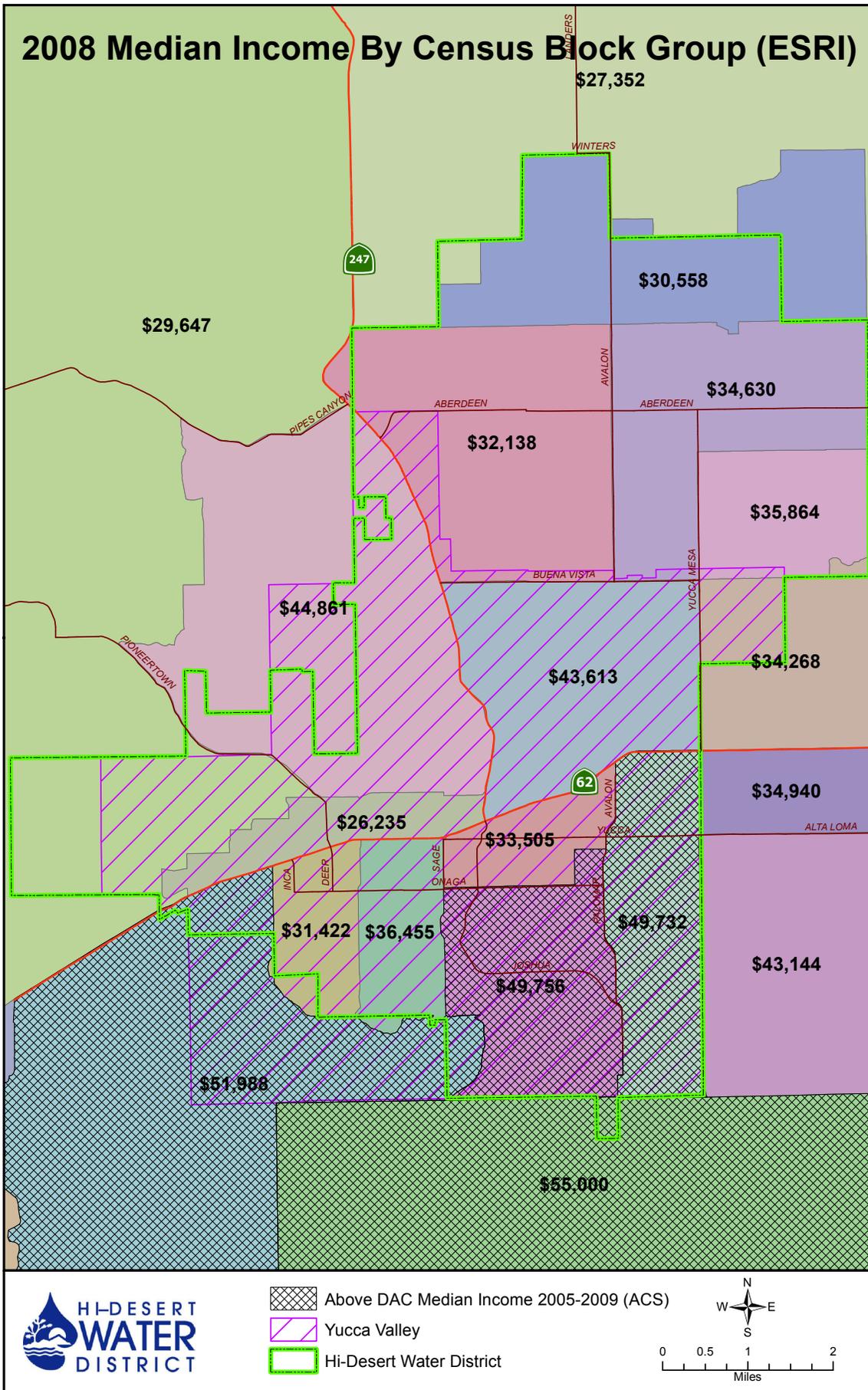


Figure 9. Warren Valley Basin Adjudication



the concerns and objectives to assist with the mitigation strategies that will be employed by the State of California for the security of the Bay-Delta.

### Desalination

The groundwater supplies in the District service area are not considered brackish in nature, and desalination is not required. There are brackish supplies near the dry lakes but it is not practical to pump and treat those resources. The District's Urban Water Management Plan states that pumping and treating near the dry lakes could potentially induce migration of better quality water to the dry lake areas and potentially cause subsidence. Additionally, because the District is not in a coastal area, it is neither practical nor economically feasible for the District to implement a seawater desalination program. Although there may be opportunities to enter into transfer agreements for water from other purveyors' seawater desalination facilities in exchange for SWP supplies, no such opportunities have been currently identified.

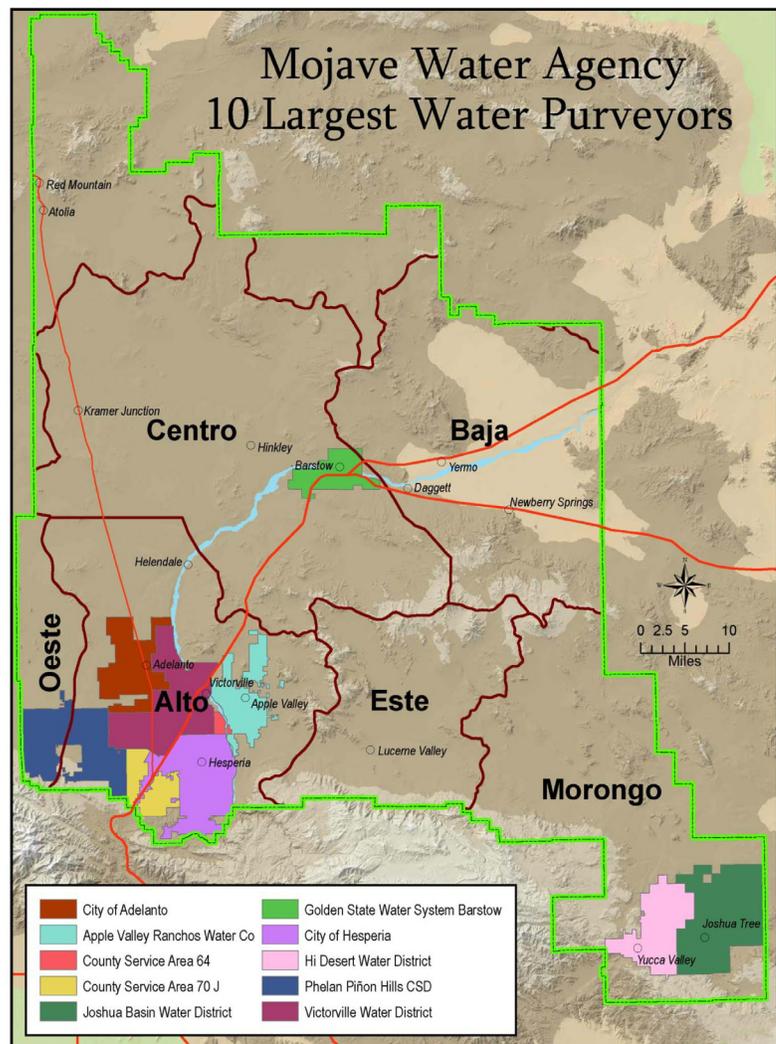
As desalination is not considered a viable alternative at this time, no comparable cost information is provided as part of this application.

### Economic Benefits Not Captured by the Cost Per Acre-foot Analysis

The Regional Water Board considered multiple factors when preparing to issue a septic prohibition, those factors included economic considerations such as the need for affordable housing, availability of basic water and wastewater services, and impact to long-term prosperity of the region. A report from the US Census Bureau recorded 20,700 people residing in the Town of Yucca Valley in the year 2010, with a median household income of \$42,120. This was considerably lower than the state median household income for 2010, estimated at \$60,392. As evidenced by these statistics, subject project is located in a low-income, disadvantaged community. The project not only provides wastewater service to a region in desperate need to this service, but also provides numerous benefits that are not captured by the cost per acre-foot calculations presented above. These include:

- Improved groundwater quantity and quality, resulting in decreased cost of groundwater pumping and treatment;
- Increase water supply reliability through introduction of a drought tolerant groundwater recharge supply;
- Decreased reliance on SWP imported water and associated decrease in costs associated with water conveyance;
- Potential reduction in Bay-Delta water diversions and increased salmon and Delta smelt habitat;
- Increase in employment opportunities during project construction, as well as increased long-term employment at the treatment facility;
- Increase in economic condition of the region from new commercial and/or industrial opportunities resulting from availability

Figure 10. MWA Service Area and Large Water Purveyors



of wastewater service and higher quality groundwater; and

- Long-term positive impact on property values in the region, given that converting to a public sewer system typically increases market value, while a failing septic system decreases market value.

## Criterion 6: Reclamation's Obligations and Benefits to Rural or Economically Disadvantaged Communities

- The project is located in an area designated as economically disadvantaged by the State of California. The town and beneficiaries of the water reclamation facility have a median household income of less than 80 percent of the state median household income.

### Legal and Contractual Water Supply Obligations

This project does not directly address Reclamation's legal or contractual obligations. However, the installation of this project is considered essential to the Yucca Valley Community in order to continue meeting the public health and safety requirements for water supply and to meet the water quality objectives of the Colorado River RWQCB. In addition, increased recharge in the adjudicated Warren Valley Groundwater Basin may reduce the likelihood of continued disputes in this and neighboring basins.

Additionally, offset of SWP use resulting from this project may benefit the Bay-Delta and support initiatives to protect the Bay-Delta.

### Benefits to Rural or Economically Disadvantaged Communities

The project serves the Town of Yucca Valley and unincorporated portions of San Bernardino County. The town population is approximately 20,700 and is composed primarily of retired citizens and military families. The project area map, shown in Figure 9, indicates the median household income by census block group. While some block groups indicate a MHI above the California definition of a disadvantaged community (80 percent or less of the state MHI), the majority of the service area is below 80 percent of the California MHI. While the District and town have not yet updated the map to reflect 2010-census information, population and income

have not significantly increased given the makeup of the population. The Phase 1 project has chosen to focus initial construction efforts on the highest population density in the rural town.

### Economically-Disadvantaged Communities Within the Project Service Area

Economically disadvantaged communities fall within the District's service area. Figure 9 features the numerous economically disadvantaged service areas by U.S. Census block group

The primary beneficiaries/service recipients of the proposed project are located within economically disadvantaged areas. The map on the following page shows how the economically disadvantaged areas fall within the anticipated service area of the subject project.

### Economically-Disadvantaged Communities Within the Project Service Area

Economically-disadvantaged communities fall within the District's service area. Figure 9 features the numerous economically-disadvantaged service areas by U.S. Census block group

The primary beneficiaries/service recipients of the proposed project are located within economically-disadvantaged areas. The map on the following page shows how the economically-disadvantaged areas fall within the anticipated service area of the subject project.

## Criterion 7: Watershed Perspective

- In collaboration with the California Department of Water Resources and the Mojave Water Agency, the District has agreed to participate long-term planning efforts that will continue development of measures to help reduce reliance on the Sacramento-San Joaquin Delta for water supply. The District and Town have also worked together on financing solution such as tax measures and integrating needed street repairs into the wastewater project to provide more benefit for the community.

### Integrated Resource Planning

#### Project as Part of an Integrated Resource Management Plan

The District is a member of the MWA Integrated Regional Water Management Group in the

Department of Water Resources (DWR) defined Mojave region. The project is part of a Reduction in Delta Water Dependency regional watershed plan. The MWA coordinates appropriate regional water planning, driven primarily through the California DWR Integrated Regional Water Management Planning program. The District has been contracted to construct groundwater recharge basins as a contribution to the overall quality and supply of the Warren Valley Groundwater Basin. The MWA supplies the Mojave Basin Area with nearly half of its water needs being met through the purchase of State Water Project supplies. MWA has conducted multiple studies to assess the annual State Water Project purchase demands to adequately address regional water use needs; the MWA has a current State Water Project entitlement for up to 82,800 AFY. According to the Final State Water Project Reliability Report (DWR 2002), MWA should expect to receive an average of about 58,400 AFY (77 percent) each year. Through demand projections, MWA will need to utilize their entire SWP entitlement in order to bring the groundwater basin into balance in 2020 assuming a 10 percent municipal conservation and minor change to any other water use functions.

The District, as a member of the MWA has committed to full utilization and development of supplies within the Region's source area through conservation, conjunctive use, groundwater banking, flexible timing of delivery and recharge systems, and environmental protection. The proposed project is part of a plan that recognizes decreased reliability of water exported from the San Joaquin-Sacramento River (Delta) system. In collaboration with the California DWR and the MWA, the District has agreed to continue in long-term planning efforts that will continue development of measures to help reduce reliance on the Sacramento-San Joaquin Delta for water supply. The District and MWA recognize that the vast storage capabilities underlying the Basin allows for and provides increased flexibility in the timing of SWP deliveries, therefore decreasing the competition for pumping Delta Water South of the Delta at critical times.

### Collaborative Partnerships to Address Water-Related Issues

There are opportunities for regional cooperation through shared operating agreements, purchasing power, and information exchange with other regional water and wastewater service providers. Joshua Basin Water District and the City of Twenty-nine Palms are both working on solutions to address wastewater

disposal issues in their communities. All parties have agreed to share relevant data, lessons learned, and leverage and support projects contributing to the overall well being of the Basin. The region has, and continues to, develop a regional plan that outlines objectives for the development of projects that may be beneficial to the region and offer opportunities for a collaborative approach.

The tertiary-treated wastewater from the proposed project will be percolated to the aquifer system just upgradient from the Joshua Basin. Over time, with full project development, these basins are expected to partially refill and re-establish hydrologic connection. These long-term effects have been modeled by the USGS and others. Water level and water quality monitoring are included as part of the management plan. All water users will benefit from regional aquifer elevation and quality improvements in the Warren Valley Groundwater Basin.

All water suppliers share a keen interest in their local and regional water supplies. The economic health of the region is tied to its ability to demonstrate that affordable high-quality water will be available as the region develops, especially as reliability of the regions current water supplies decrease.

In addition to working with MWA and its member agencies to help alleviate contamination of the groundwater, the District has been working collaboratively with the Town of Yucca Valley and its residents. The District has implemented an active outreach campaign to inform residents of the affects of septic systems on the groundwater basin. The District has also formed a Public Advisory Committee (PAC) to allow members of the community to hear matters affecting the community prior to Board action. The PAC advises the Board on matters that it hears for consideration. The District has also sought feedback from residents on project cost. The District has worked with the Town of Yucca Valley and the Regional Water Quality Control Board to require package treatment plants for substantial developments during the planning stages of this project. The District and Town have also worked together on financing solution such as tax measures and integrating needed street repairs into the wastewater project to provide more benefit for the community.



# Environmental Compliance

## Impact the Surrounding Environment

The construction activities for the treatment facility (including pump stations) consist of the following range of activities: excavations; mass grading of approximately 20 acres of land, fine grading for each area proposed for development with facilities, such as access roads, parking, storage and landscaping; installation of treatment facility piping, electricity lines and other required support infrastructure; construction of foundations; construction of above ground facilities; installation of treatment equipment; and assembly of materials required for treatment. Standard construction equipment will be used for each of these phases, ranging from dozers, graders, cranes, and backhoes. It is anticipated that the maximum number of construction personnel on the project site on any given day will be 100. A maximum number of truck deliveries, probably during pouring of concrete for facilities, is forecasted at 25 per day. As previously stated, construction of the project is expected to require about 18 to 24 months. See the proposed Site Plan, Figure 11 on the following page.

It is assumed that a sewer installation crew can install approximately 400 lineal feet of sewer per day. A crew consists of an excavator; backhoe; paver; roller; water truck; 10 Dump/delivery trucks (80 miles round trip distance); employees (11 members per team). The initial collection system construction estimates assume that two sewer installation teams will be installing pipelines along two separate headings, for a total of 800 lineal feet per day. At 250 working days per year, then results in the installation of up to 200,000 lineal feet of sewer line within a one year period of time. The Phase 1 sewer collection system is shown in figure 12, on page 20.

These construction activities are anticipated to have temporary impact on air quality, water quality, and animal habitat. Mitigation measures were identified for potential air quality impacts during construction in the MMRP. A summary of mitigation measures required to address impacts on air quality, water quality, and animal habitat can be found in the tables on the following pages. The full MMRP is provided as Submission Attachment 2.

Figure 11

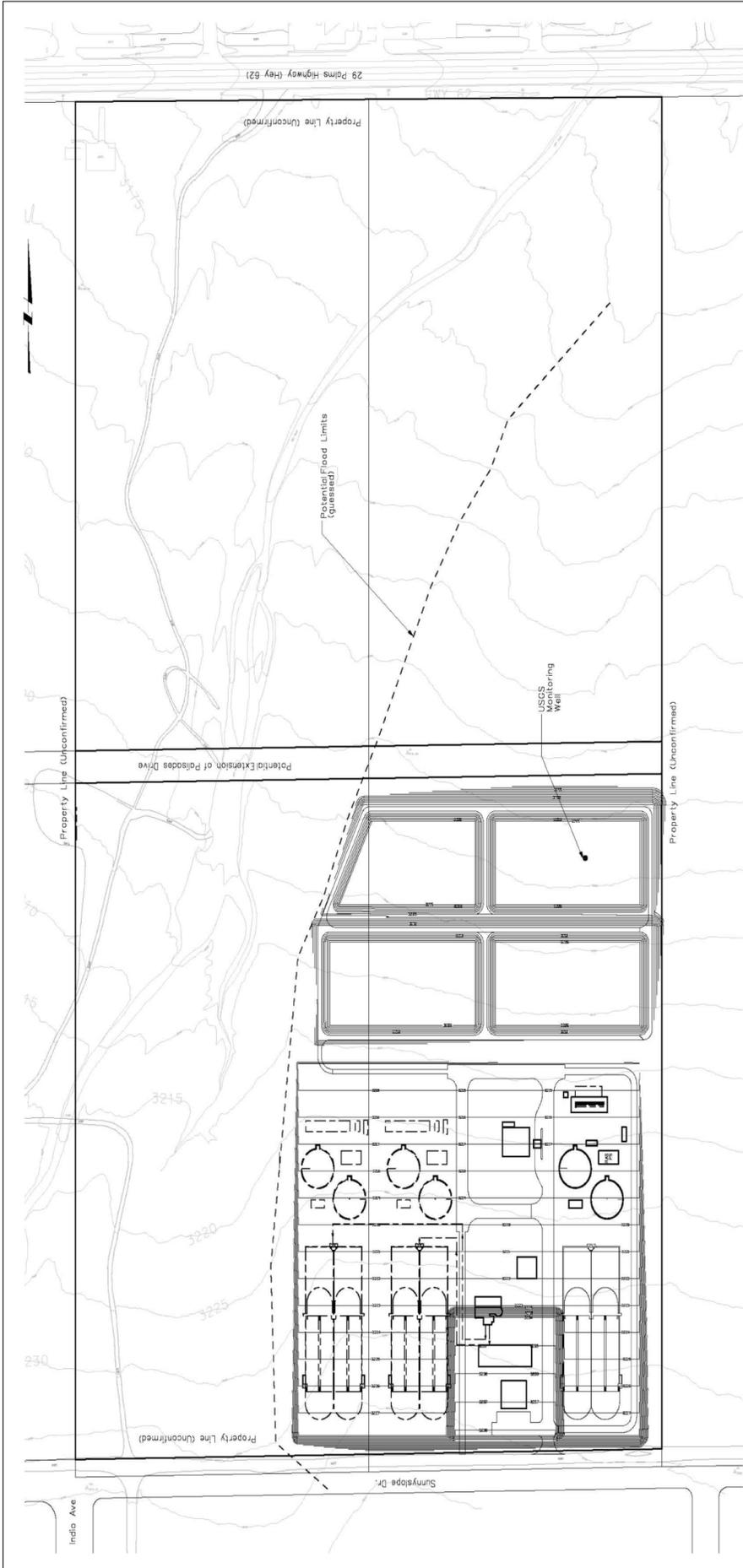


Figure 1  
SITE PLAN  
WASTEWATER TREATMENT AND WATER RECLAMATION PROJECT  
HI-DESERT WATER DISTRICT

Source: MWH "Hi-Desert Water District Water Reclamation Facility PDR" dated 9/15/08

Figure 12

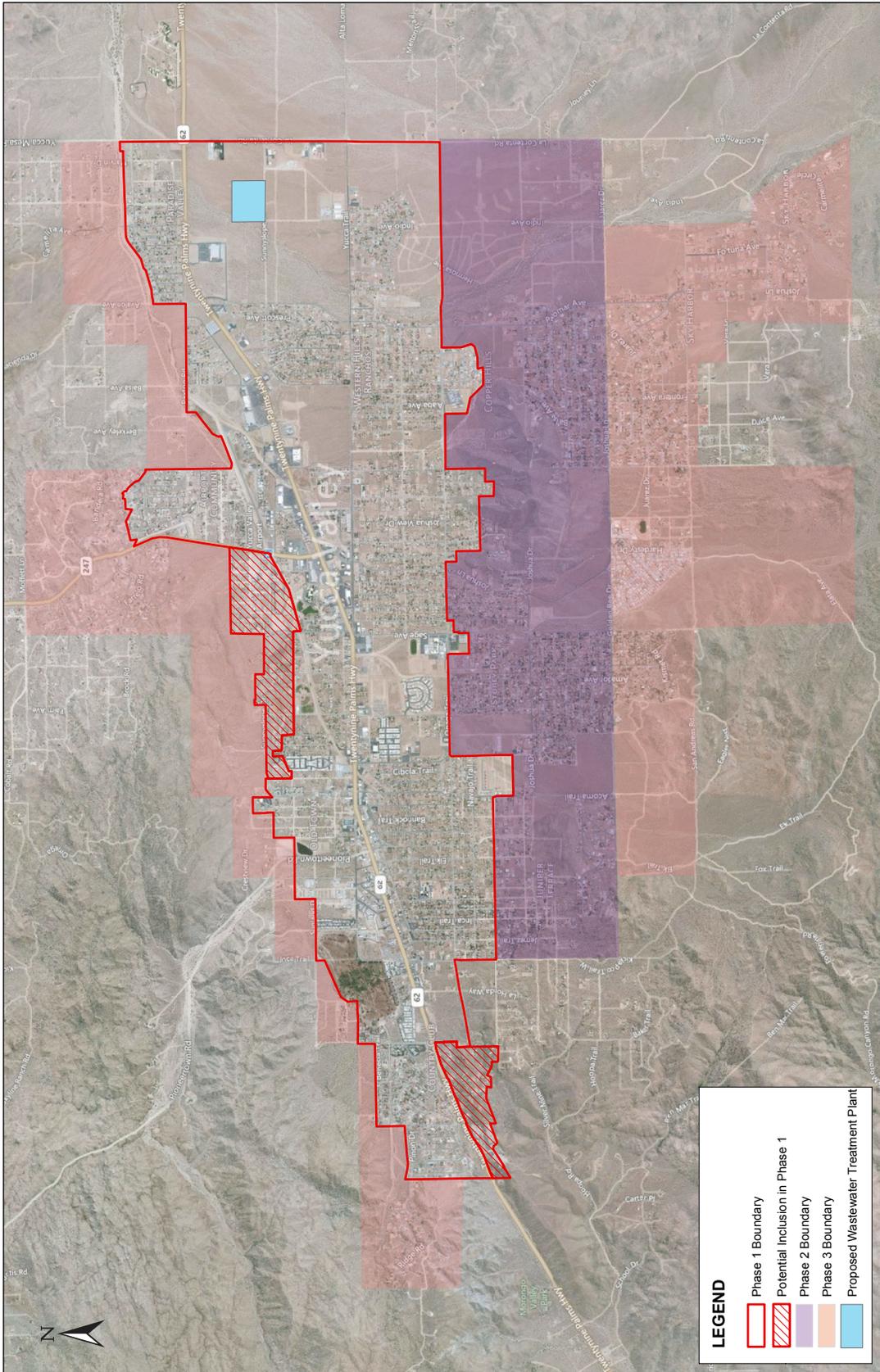


Figure 1  
**PHASE 3 MODIFIED**  
**WASTEWATER TREATMENT AND**  
**WATER RECLAMATION PROJECT**  
**HI-DESERT WATER DISTRICT**

**Table 5. Projected Impacts and Mitigation**

Impact	Mitigation Measures
<b>Air Quality</b>	
Fugitive Dust	<p>4.1-1 The construction site disturbed areas will be watered twice daily for short-term surface stabilization, and more times if winds are sufficient to loft dust from the construction site.</p> <p>4.1-2 Chemical, vegetative or mechanical (compaction or paving) will be used for surface stabilization upon completion of grading activities, if subsequent site uses are not proposed.</p> <p>4.1-3 Trackout onto paved roads will be minimized, and removed (swept or washed from paved surfaces) if substantial soil material accumulates on paved surfaces. Cleanup of project related trackout or spills on paved roads will be removed daily.</p> <p>4.1-4 Haul trucks will be covered.</p> <p>4.1-5 Grading and soil movement activities will be minimized when winds exceed 30 miles per hour at the local airport or at an onsite wind monitoring system.</p>
Construction Equipment and Mobile Source Emissions	<p>4.1-6 Efficient scheduling of equipment use, with a phased construction schedule to reduce the number of units operating simultaneously.</p> <p>4.1-7 Performing regular engine maintenance on all equipment.</p> <p>4.1-8 Provision of local equipment storage areas so that equipment trips to the sites can be reduced.</p> <p>4.1-9 Construction personnel shall be encouraged to ride share to reduce vehicle trips to construction sites, including incentives for carpooling among construction employees.</p> <p>4.1-10 Shut down equipment when not in use for more than 10 minutes.</p>
GHG Emissions	<p>4.1-11 To the extent feasible, the District shall select landscaping that is fast-growing to create a windbreak buffer along the periphery of the WRF site. A minimum of two rows shall be installed at different times and plants shall be installed and grown in stages; periodically harvested; and replanted to maintain carbon sequestration. Alternatively or concurrently, the District may install solar power systems to partially or fully offset operational electricity demand of the WRF. As a final alternative, the District may choose to purchase annual or permanent carbon credits from the available carbon banks at the time the facility begins operation.</p>
Odors	<p>4.1-12 The District shall require the installation of odor control facilities as part of the facility design. These facilities shall be state of the art (odor control to the maximum extent feasible) and shall control odors to ensure that adjacent properties are not exposed to significant odor concentrations, except during an emergency/upset condition at the WRF.</p> <p>4.1-13 The District shall establish an odor complaint response phone number that shall be clearly posted on the exterior fence of the treatment plant facility. If odor complaints are received, the District shall respond within 24 hours to correct the problem, and provide a response to the complainant within 12 hours of notification identifying what actions were taken and how long was or will be required to control the odor problem. Sources of odors shall be corrected in as timely a manner as possible.</p>

Impact	Mitigation Measures
<b>Hydrology and Water Quality</b>	
Fill Requirements or Streambed Alteration	<p>4.2-4 The District shall restore any channel crossing locations with a comparable quantity or quality of habitat to that disturbed or removed during construction of the proposed project. Because no sensitive riparian or wetland habitat will be affected, the project will not be required to create such habitat or acquire mitigation bank credits. Channel restoration in the area of the pipeline crossing is considered adequate by the District to fully mitigate effects on altering the stream bed on the project site. The District must acquire a 1602 Streambed Alteration Agreement and may have to acquire a WDR from the Regional Board, and shall implement the requirements of the WDR and Agreement as long as it is not less than that identified above.</p>
Erosion Control and Sedimentation	<p>4.2-1 The District shall prepare a Storm Water Pollution Prevention Plan (SWPPP) and a Water Quality Management Plan (WQMP) that will achieve no net loss of topsoil from the project sites and prevent runoff from causing erosion on adjacent property during construction. The SWPPP and WQMP shall be provided to the construction contractor and the contractor shall implement the SWPPP during all construction activities at the site.</p> <p>4.2-2 The SWPPP prepared for the project site shall include a spill response program for accidental release of water pollutants during construction that shall, at a minimum, meet the following performance standards: adequate resources shall be maintained on the site by the contractor to control any release of pollutants; if a spill occurs, the pollutant shall first be contained, second the spill shall be reported to appropriate authorities, third the pollutant contaminated material (soil, water, etc.) shall be collected in proper containers, fourth the pollutant contaminated material shall be delivered to a facility with the capability to treat or dispose of the contaminated material in accordance with existing laws and regulations in place at the time of the accidental spill; fifth the area contaminated by the spill shall be cleaned (remediated) to background conditions, or alternatively to a level that meets the requirements of existing laws and regulations at the time of the clean-up and that does not leave any residual threat to humans or the environment in which the spill occurs.</p> <p>4.2-3 The District shall prepare the WQMP and include a Spill Prevention Control Countermeasures Plan that will minimize the potential for release of any hazardous or toxic chemicals to the environment. This Plan shall include a requirement to retain material safety data sheets (MSDS) for all hazardous materials or substances at the site and measures that outline the responses that will be implemented should an accidental spill of hazardous materials onsite occur. Based on the list of hazardous materials/substances that will be utilized at the plant, the District Plan shall identify handling procedures and management options for any accidental releases to the environment until such accidentally released material is properly disposed of or treated so that no residual harm remains from the accidental release.</p>
100 Year Floodplain	<p>4.2-7 The District shall provide a drainage report that defines the 100-year flood elevation on the site and shall either elevate the treatment plant facilities above this level with two feet of freeboard or shall provide protection of the site with a boundary levee that protects the facilities from exposure to flooding from the 100-year flow across the property. The final treatment plant facility design shall provide a means of re-routing any storm flows, including the 100 year flow, around the facility and back into the existing natural channel on the north side of the site without causing significant erosion in the channel.</p>

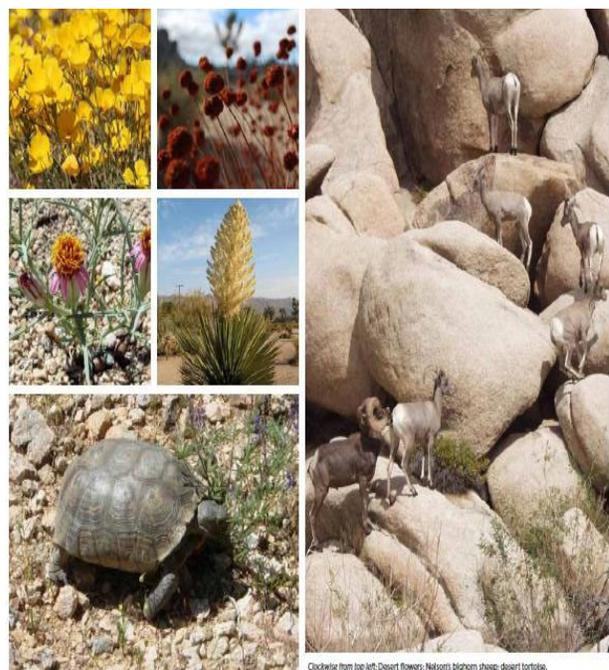
Impact	Mitigation Measures
Groundwater Quality	<p>4.2-5 The District shall install one or more monitoring wells downstream of the WRF. The well(s) shall be monitored for elevation of the groundwater table below the ground surface (bgs). If the groundwater table downstream of the WRF recharge site approaches 100 feet bgs, the District shall initiate pumping to control the groundwater level. The groundwater extracted may be discharged to the surface if the water quality is acceptable to the regulatory agencies, or it may be further treated and made available to the District's domestic water supply system. The performance standard to be achieved is that the groundwater table downstream of the WRF recharge facilities shall not rise above the 100-foot bgs threshold.</p> <p>4.2-6 The District shall install one or more monitoring wells downstream of the WRF. The well(s) shall be monitored at least annually for all drinking water standards and compared to maximum contaminant levels (MCLs) for public drinking water standards. If concentrations approach any MCL, the District shall install additional treatment at the WRF to modify the treated effluent by lowering or removing the pollutant of concern to a level that will prevent the MCL from being exceeded. The performance standard to be achieved is that the groundwater quality shall not be allowed to exceed any MCL for a domestic or public drinking water supply.</p>
Habitat	
Sensitive Plant and Animal Species	<p>4.6-1 Once the final pipeline alignments are engineered and surveyed, and the wastewater reclamation facility site boundaries finally established, a qualified biologist will inventory the numbers and types of cacti, creosote bushes, and Joshua trees that are to be impacted and removed. Salvaging of individual Joshua tree and cacti plants within these final alignments will be done in compliance with Town and County ordinances. Plants requiring relocation and transplantation shall be replanted within the disturbed alignment, or on the WRF site. A qualified professional shall oversee transplantation and maintenance of the transplanted plants to maximize potential survival.</p> <p>4.6-2 Any grubbing or brushing to occur as part of the project will be conducted outside of the State-identified bird breeding season of February 15th through September 1. Alternatively, a qualified biologist may survey the project impact area and if no native bird nests are discovered, the development may proceed. A report of findings will be provided to the California Department of Fish and Game if construction in the vicinity of bird nests must be conducted during nesting season. If nesting birds are located within or adjacent to construction areas, construction will be redirected to other locations until nesting ends.</p> <p>4.6-3 If the above work cannot be done according to this schedule, prior to the initiation of any ground disturbance, a qualified biologist will determine what birds are nesting in the shrubs or trees to be removed or are within 500 feet of the area that will be under construction.</p> <p>4.6-4 Mitigation for impacts to jurisdictional water of the State shall be offset by revegetating the pipeline alignment across the wash with equivalent habitat. This requirement shall be memorialized in the 1602 Streambed Alteration Agreement obtained for this project prior to disturbing the alignment.</p>

Impact	Mitigation Measures
Desert Tortoise	<p>4.6-5 Prior to initiating site clearing and grading activities on the WRF project site, a preconstruction desert tortoise and burrowing owl survey shall be conducted within 30 days of initiating ground disturbance at the administrative building. Assuming no tortoise are found, the District may install a tortoise exclusion fence around the WRF site or retain a qualified biologist to monitor the project area one time per week during the duration of active construction activities on the WRF site. If either species (tortoise or burrowing owl) is discovered on the WRF building site, a qualified professional biologist shall implement measures, including possible acquisition of an incidental take permit (ITP), to remove any individuals of either species from this site. No take of either species will be allowed without implementation of an ITP or relocation of burrowing owl in accordance with State protocols.</p> <p>4.6-6 To minimize potential support for local raven populations, the District shall publish or make available a brochure to all employees (including contractor employees) that describes measures which can be implemented by residents to minimize habitat support for local raven populations.</p> <p>4.6-7 To prevent introduction of exotic, non-native plant species that could damage the local plant community, a qualified biologist shall compile a list of species that shall be prohibited from use in landscaping within the project area.</p> <p>4.6-8 Worker education programs, defined construction areas, habitat mitigation, and well defined operational procedures shall be implemented regarding desert tortoise and local wildlife.</p> <p>4.6-9 Unauthorized, public off-road use of any project areas shall be discouraged by posting of signs and by District inspectors monitoring the construction crew.</p> <p>4.6-10 Construction personnel or other persons related to the project shall not be permitted to bring pets or firearms into construction areas.</p> <p>4.6-11 Trash from construction crews and facility employees, especially food items or packaging, shall be disposed of in scavenger-proof containers and removed daily to avoid attracting desert tortoise predators to the area.</p>

### Species Listed or Proposed to be Listed as a Federal Endangered or Threatened Species

Focused surveys for desert tortoise, burrowing owl, and LeConte’s thrasher were conducted onsite. The proposed treatment facility site and the sewer collection system APE do not support any of these or any other sensitive species. The project will result in the temporary disturbance of about 50 acres of native habitat within the basin (the remaining area of disturbance occurs along existing paved or graded dirt roads), and the permanent loss of up to 30 to 35 acres of desert habitat at the treatment facility site and above ground pump stations required to support the sewer collection system. Should tortoise or burrowing owl be discovered on the site prior to construction, mitigation measures will be implemented to protect any individuals on the property, and to implement measures to minimize man-made threats to the tortoise, such as attraction of predators (ravens).

Figure 13. Local Flora Fauna



Clockwise from top left: Desert flowers; Nelson's bighorn sheep; desert tortoise.

The proposed project will not result in a significant impact to protected animal species, due to the lack of presence of these species during the survey, as well as the fact that the APE is located within a disturbed urban/suburban setting where all proposed facilities are surrounded by roads and developed or developing land. Mitigation measures have been identified as necessary to address any potential impacts during construction.

### Wetlands or Other Surface Waters Inside the Project Boundaries

The project area encompasses the sewer collection system and the treatment facility site. There are no perennial or permanent water bodies, lakes or streams, within the project area. There are several ephemeral or intermittent stream channels within the project area. None of these eight-to-ten ephemeral channels in the project area are formally named on the United States Geological Survey (USGS) Topographic maps of the project area.

The proposed treatment facility site contains one surface water feature, a blueline, ephemeral desert wash, which traverses the western portion of the site. This ephemeral stream originates in the Little San Bernardino Mountains to the south. The wash flows southwest to northeast across the property and exits the property where it flows beneath State Route (SR) 62. From there, this dry desert wash extends to the northeast until it has a confluence with Yucca Creek Wash and continues to flow east into the Community of Joshua Tree. From there Yucca Creek Wash then flows north to dry lakes, which are considered isolated waters of the United States. The wash receives flows primarily from the upland areas south of the site that extend to the front of the north facing slopes of the Little San Bernardino Mountains. According to the biological assessment conducted by Frank Hovore & Associates in July 2004, the wash is sparsely vegetated by Joshua tree-creosote scrub in the upland areas, desert willow within the wash bottom, annual wildflower species in the open terraces along the bottom margins, and Mormon tea, which dominates the overall drainage. For the remainder of the project area, the future sewer lines will occasionally cross an ephemeral stream channel along its alignment. In most cases, these crossing will occur within existing paved and graded road rights-of-way. Based on the field survey of the sewer line alignment, no wetlands or riparian habitats are located within the proposed project area or along the pipeline alignments.

Because these stream channels are isolated and ephemeral, the preliminary finding is that they

are not subject to U.S. Army Corps of Engineers (Corps) Clean Water Act Section 404 jurisdiction, i.e., they are not waters of the United States. On the other hand, the channels appear to be waters of the State of California and are within the jurisdiction of the California Department of Fish and Game (CDFG). A CDFG 1602 Streambed Alteration Agreement will need to be obtained for any disturbances of the ephemeral stream channels within the project area.

According to the Town of Yucca Valley General Plan (1995), the treatment facility project site is located in a Zone A flood hazard area, which designates areas of 100-year flooding. As presently envisioned, the treatment facility will be located to the east of the 100-year flow line.

### Known Archeological Sites in the Proposed Project Area

Cultural resources studies of the treatment facility site and sewer pipeline alignments were conducted by CRM TECH. As part of the study, CRM TECH conducted a historical/archaeological resources records search, conducted historical background research, contacted Native American representatives, and carried out a systematic field survey. The research did not identify any cultural resources within or adjacent to the project area.

### Disproportionate Adverse Effect on Low Income or Minority Populations

The community contains a mixture of retirees and a service economy geared to serve them. Many retired residents live on fixed incomes and the majority of the community consists of low- to moderate-income residents. The treatment facility project site is located adjacent to commercial uses on the north side adjacent to SR 62. A few single-family residences and one industrial facility are located in the immediate vicinity of the project site. These surrounding uses are consistent with those found in the whole community and no particular unique income or ethnic group is known to occur within the general project vicinity. No community issues related to environmental justice or adverse impact to low-income or ethnic communities is expected.

## Access to Ceremonial Use of Indian Sacred Sites or Other Impacts on Tribal lands

As part of the environmental impact assessment, requests were sent to the State of California's Native American Heritage Commission (NAHC) for a records search in the commission's sacred lands file on the APE for the treatment facility. The NAHC reported that the sacred lands record search identified no Native American cultural resources in the immediate vicinity of the APE. The NAHC has cautioned "the absence of specific site information in the Sacred Lands File does not guarantee the absence of cultural resources in any project area."

## Project Contribution to the Introduction, Continued Existence, or Spread of Noxious Weeds or Non-Native Invasive Species Known to Occur in the Area

The project location is in an urbanizing area at the edge of desert habitat. There are already several invasive species in the vicinity, and on the project sites. The implementation of the project will result in the removal of vegetation and habitat, such that use by invasive species will be reduced. However, the project could attract invasive species. Ongoing maintenance by the District at its existing facilities controls invasive weed species and the same maintenance program will be implemented at the proposed facility. Future landscaping at the treatment facility must utilize native species, many of which may be transplanted to the treatment facility site. With implementation of standard landscape management practices, the proposed project is not cause significant invasive species impacts.



## Required Permits and Approvals

Draft regulations were issued in November 2011 by the California Department of Public Health (CDPH), for reclamation projects. While the RWQCB issues the permit, CDPH provides recommendations/approval of the project before the permit will be issued based on Groundwater Replenishment Reuse Project regulations. New regulations will require submittal of samples from monitoring wells, maps of drinking water wells and monitoring wells, retention basin boundaries, and require the District conduct public hearings and public notification of the project. The District has already completed groundwater quality sampling, drinking water mapping, and are prepared to meet any CDPH requirements as needed.

In addition to compliance with CDPH requirements, the District will require a Colorado River RWQCB NPDES/General Waste Discharge Permit. A draft permit was issued to the District in 2009. Prior to start-up of its facilities, it is anticipated that the District will receive a revision to the 2009 permit. The District will require CDPH approval prior to permit issuance. This process is expected to take a minimum of 180 days.

In addition to the CDPH and RWQCB permits, there are a number of permits that may be required as the project evolves. For each of these permits, the District anticipates a meeting with responsible agencies early in the design phase so that agency requirements can be incorporated prior to agency review of the 90% design submittal.

Potential permits that may be required prior to project construction are as follows:

- California Department of Fish and Game Streambed Alteration Permit.
- Town of Yucca Valley Encroachment, Grading, and Building Permits.
  - Conditional Use Permit.
- Mojave Air Quality Management District Authority to Construct and Permit to Operate.
- State Water Resources Control Board.
  - Components include Storm Water Pollution Prevention Plan.
- Water Quality Management Plans.
- County of San Bernardino Flood Control District Encroachment Permit.
- County of San Bernardino Department of Public Health, Environmental Health Services, Safe Drinking Water Permit Section Well Permit to Drill and Well Abandonment Permit.
- Army Corps of Engineers Section 404 Permit.
- Regional Water Quality Control Board.
  - Waste Discharge Requirements.
  - Section 401 Permit.
- CALTRANS Encroachment Permit.
- CalOSHA, Mining and Tunneling.



## Description of Expenditures

The construction of the wastewater facilities consists of three phases – Phase 1, Phase 2, and Phase 3. In Phase 1, a 2 mgd portion of the total project will be constructed. The first phase of the wastewater treatment and collection system is intended to provide service to the most densely populated area in Yucca Valley, which is also the location of the majority of the District's groundwater wells.

Upon initial construction of Phase 1, the project will service approximately 5,500 connections comprised of residential and commercial units in the Town of Yucca Valley, a disadvantaged community with a 2010 population of approximately 20,700 and a 2010 median household income of \$44,755 (less than 80 percent of the statewide median). The treatment facility is expected to receive and process 1.4 mgd in Phase 1. Construction of a wastewater system in the District service area will result in the elimination of septic systems and production of effluent treated to Title 22 recycled water standards that can be discharged to percolation basins to recharge Warren Valley groundwater basin.

In order to develop a sustainable program that addresses the impacted groundwater basin, it is important that the District reduce the financial burden this project may place on the residents of the disadvantaged community of Yucca Valley. The District is seeking additional grants and other low cost financing to fund this project. The District has identified several potential funding sources including the Bureau of Reclamation grants, US Environmental Protection Agency grants, grants offered through the State of California, and the Clean Water State Revolving Fund Loan program. The District anticipates costs not covered by grants will be financed over 30 years to lessen the immediate impact on the community and provide that future residents and businesses pay their fair share of the cost. The District has also conducted a preliminary rate study to estimate the potential ratepayer burden for on-going operations costs and repayment of debt service associated with expenditures not covered by grants.

The District is requesting USBR funds for the planning and design phases of the project to position the project for construction in 2014 or 2015. The

District expects to complete the planning and design components of the facilities in the period through the Federal Fiscal Year ending September 30, 2015.

The planning and design for the subject project proposal consists of the following primary tasks:

1. Design of the collection system;
2. Design of the collection system;
3. Design of the water reclamation facility;
4. Right-of-way acquisition;
5. Geotechnical engineering;
6. Program management;
7. Completion of the environmental review; and
8. Permitting.

At this time, the District has engaged an Carollo Engineers as the Owner's Advisor (OA) and has selected a Atkins North America as the design consultant for the collection system. The collection system design consultant was selected through a process that included a request for qualifications (RFQ) request for proposals (RFP) and an interview. A preliminary alignment study was submitted in November 2012. A preliminary design report will be submitted March 1, 2013. Geotechnical investigations, right-of-way acquisition, permitting, and remaining work to complete the required environmental documentation will be completed during the collection system design. Construction of the collection system facilities is anticipated to begin by spring of 2014.

A similar selection process will be used to select a design consultant for the water reclamation facility. The selection process for the water reclamation facility is anticipated to begin in February 2013. It is anticipated that the water reclamation facility design consultant will be selected and design of the water reclamation facility will begin in May 2013. It is expected to take 12 to 18 months to complete the water reclamation facility design. Construction of the water reclamation facility is anticipated to begin by summer 2014.

The total estimated cost, including expenditures to date related to the water reclamation project is summarized in Table 7 below. All budget numbers presented in Table 7 are projected through The District's 2015 Fiscal Year. As the project develops, the totals are expected to change. These should not be considered all inclusive of final costs through project completion.

### Salaries, Wages and Fringe Benefits

Key personnel associated with management of the project include the District general manager, chief financial officer, engineer, and other project administration staff who have committed 100 percent of their time to the project. The costs associated with salaries and benefits for these staff personnel are presented in Table 8.

### Equipment, Materials and Supplies

As the project is in the planning/design phase, no specific equipment procurement is required at this time. Estimated costs associated with acquisition of land for the project is presented under Right of Way.

### Contractual

Contractual obligations include Planning, Program Management, and Design services for both the treatment facilities and collection system.

### Environmental and Regulatory Compliance Costs

The CEQA and NEPA environmental documentation required for this project has been completed. No costs for environmental compliance have been included in this funding request. Specific

**Table 7. Estimated Project Budget from FY 2012 to FY 2015**

Task/ Description	Budget
<b>District</b>	
Staff/Personnel	\$165,323
<b>Program Management Consultant</b>	
Project/Program Management	\$13,540
Expanded Use Loan	\$12,000
Collection System Design Support	\$507,950
Treatment Plant RFQ/RFP	\$36,000
As Needed Services	\$50,000
<b>Permits</b>	
Conditional Use Permit Fee	\$25,000
<b>Design and Related Services</b>	
Collection System Design	\$3,849,353
Plant Design	\$3,500,000
<b>Right of Way</b>	
Right of Way Acquisition	\$45,134
<b>Other Program Costs</b>	
Legal	\$35,000
Media	\$13,000
Printing	\$14,000
Outreach - Assessment	\$67,000
Outreach - Sales Tax	\$35,000
Assessment District	\$73,425
<b>Total</b>	<b>\$8,441,724</b>

permit costs associated with the project are shown in Table 7 under Permits. The costs associated with initial outreach to other regulatory agencies requiring permits are included in the Collection System Design line item in Table 7.

### Indirect Costs

District specific indirect costs are costs associated with staffing. These costs are presented as fringe benefits in Table 8. Most other estimated costs are contractual in nature and indirect costs are not separately presented.

### Budget Summary

The District anticipates receipt of non-federal funding sources to meet the required 75% match for requested funds using State grants, a loan from the water district, and other non-federal funds spent to date as summarized in Table 8.

As previously noted this project is in the planning/pre-design phase and anticipates entering the construction phase in approximately two years. The various project related expenses identified through FY 2015 qualify for the Bureau's reimbursement program. Qualified items for cost repayment are provided in Table 8.

**Table 8. Budget Proposal**

Budget Item Description			Recipient Funding	Reclamation Funding	Total Cost
Salaries and Wages	\$/hr	Quantity			
Salaries and Wages (1)	\$87.50	3,341	\$82,564.54	\$6,618.70	\$89,183.24
Fringe Benefits			\$188,063.83	\$15,075.93	\$203,139.76
Travel	\$/trip	No. trips			
	\$0	0	\$0	\$0	\$0
Equipment			\$0	\$0	\$0
Supplies/Materials			\$0	\$0	\$0
<b>Contractual</b>					
Carollo Engineers (Owner's Advisor)			\$573514.81	\$45,975.19	\$619,490.00
Treatment Facility Design Engineer			\$3,240,248.97	\$259,751.03	\$3,500,000
Atkins North America Collection System Design Engineer			\$3,563,674.88	285,678.12	\$3,849,353.00
"Consultant" (Right of Way Acquisition)			\$41,784.40	\$3,349.60	\$45,134.00
"Consultant" (Assessment District)			\$67,975.79	\$5,449.21	\$73,425.00
"Consultant" (Legal)			\$32,402.49	\$2,597.51	\$35,000.00
<b>Other</b>					
Media/Printing			\$24,996.21	\$2,003.79	\$27,000
<b>Total Direct Costs</b>					
			\$7,815,226	\$626,499	\$8,441,725
Indirect Costs - % of Direct Labor			0.0%	\$0	\$0
			\$0	\$0	\$0
<b>TOTAL PROJECT COSTS</b>			<b>\$7,815,226</b>	<b>\$626,499</b>	<b>\$8,441,725</b>
Notes:					
(1) Average staff salary of \$87.50 per hour used to estimate the number of hours expended over the duration of the project.					
(2) Fringe benefits are estimated at 61% of the direct labor costs.					



# Funding Plan

The District's financial plan relies upon a mixture of federal and non-federal sources of funds to meet the above-identified expenditures. These sources include receipt of 25% matching funds from the Federal Bureau of Reclamation Title XVI Program as summarized in Table 9. The District has been initially appropriated approximately \$2.4 million in Bureau of Reclamation Title XVI funds, of which approximately \$1,483,932 remains to be reimbursed to date. As part of this funding request, the District is requesting appropriation of an additional \$626,499 from the current Title XVI Program Funding Opportunity Announcement (FOA).

The District is in the process of submitting the necessary compliance documents for the CWSRF loan and anticipates approval of this loan in FY 2013.

**Table 9. Summary of Federal and Non-Federal Funding Sources for FY 2012 through FY 2015**

	Computation
<b>Non-Federal Entities</b>	
California Department of Water Resources Proposition 84 Round 1	\$3,000,000
California Department of Water Resources Proposition 84 Round 2	\$963,610
California State Water Resources Control Board (Cleanup and Abatement Grant)	\$1,080,679
Water Loan	\$1,287,004
<b>Non-Federal Subtotal</b>	<b>\$6,331,293</b>
<b>Other Federal Entities</b>	
Previous Title XVI Appropriated funds, Still Available to Date	\$1,483,932
<b>Other Federal Subtotal:</b>	<b>\$1,483,932</b>
<b>Requested Reclamation Funding</b>	
Federal Fiscal Year 2013 Requested Reclamation Funding	\$626,499
<b>Total Project Funding</b>	<b>\$8,441,724</b>