



# Central Basin Municipal Water District Engineer's Report

## Central Basin Standby Charge 2017/18 ENGINEER'S REPORT

Board Meeting: May 22, 2017

27368 Via Industria  
Suite 200  
Temecula, CA 92590  
T 951.587.3500 | 800.755.6864  
F 951.587.3510

[www.willdan.com/financial](http://www.willdan.com/financial)



# ENGINEER'S REPORT AFFIDAVIT

*Establishment of Annual Assessments for the:*

## Central Basin Standby Charge

Central Basin Municipal Water District Engineer's Report,  
County of Los Angeles, State of California

This Report describes the improvements, budgets, parcels and assessments to be levied for Fiscal Year 2017/2018. Reference is hereby made to the Los Angeles County Assessor's maps for a detailed description of the lines and dimensions of the parcels within the District. The undersigned respectfully submits the enclosed Report as directed by the City Council.

Dated this 8th day of May, 2017.

Willdan Financial Services  
Assessment Engineer  
On Behalf of the Central Basin Municipal Water District

By: [Signature]

Susana Medina, Project Manager

District Administration Services

By: Richard Kopecky  
Richard Kopecky

R.C.E. # 16742



## TABLE OF CONTENTS

<b>INTRODUCTION.....</b>	<b>1</b>
<b>Section I. Historical Context.....</b>	<b>2</b>
<b>Section II. Water Resource Management Approach .....</b>	<b>3</b>
<b>Section III. Description of Water Recycling Program.....</b>	<b>5</b>
<b>Section IV. Capital Improvement Plans .....</b>	<b>7</b>
<b>Section V. Benefits of Water Recycling Program.....</b>	<b>14</b>
<b>Section VI. Long Range Financial Planning .....</b>	<b>14</b>
<b>Section VII. Rate and Method .....</b>	<b>16</b>
<b>Section VIII. District Diagram .....</b>	<b>18</b>
<b>Section IX. Standby Charge Roll.....</b>	<b>19</b>

## INTRODUCTION

---

The Central Basin Municipal Water District (District) is a public agency in southeast Los Angeles County. The District was formed in 1952 by popular vote to provide supplemental imported water supplies to local retail agencies. Currently, there are over 2 million people within the District's 227-square-mile service area. Figure 1 shows the District's service area, including cities and political subdivisions.

The District has been a leader in changing the manner in which scarce water resources are managed in Southern California. Over the past 24 years, the District has implemented a plan to reduce the need for imported water from Northern California and the Colorado River, and insulate its service area from future water shortages. This "drought-proofing" plan is founded on aggressive water conservation, including flow-reducing plumbing hardware and education, and water recycling.

In 1990, the District took a significant step in its drought-proofing plan by commencing construction on a recycled water distribution system. This new system was envisioned to provide a source of non-potable water completely independent of drought-sensitive imported supplies, for use in non-potable applications, such as irrigation and industry. Today, the District's recycled water system serves over 328 individual sites with a water supply of more than 5,015 acre-feet that would otherwise be served by potable sources such as groundwater and imported water that are used by all customers in the service area. During future, imported water shortages, recycled water will not be subject to reduction – essentially a water supply insurance policy for all residents.

Pursuant to the provisions of the Municipal Water District Act of 1911 (Water Code Section 71638, et seq), the District began levying an assessment in 1991. The assessment, called a "standby charge", is levied on all property owners within its service area to help recover the cost of drought-proofing the service area. The purpose of this Engineer's Report is to 1) describe the District's recycled water program and its benefits to all residents within the District's service area, and 2) explain the standby charge, and how it is calculated and imposed. To this end, the report also gives historical context to the water recycling program and describes the water supply outlook in Southern California as well as the District's water resource management approach.

## Section I. Historical Context

---

Much of the impetus for the current water recycling efforts statewide, and particularly in Southern California, began after the drought of 1976-77. These two years are the fourth and first driest years, respectively, in California recorded history. The socioeconomic impact of those two years was significant with economic losses of \$2.5 billion<sup>1</sup> statewide. The drought of 1987-92 strongly reinforced the need for recycled water programs because the supply is not subject to hydrologic variability or other uncertainties as imported water sources. These sources, the Colorado River and the Sacramento-San Joaquin River Delta are significant because they provide Southern California with about 50 percent of its water supply. At the same time, environmental and hydrologic conditions highlight the long-term trend toward decreasing reliability of these imported supplies while the state's population continues to increase in every region.

The State Legislature realized the potential for recycled water to play a significant role in mitigating future water shortages when it set a goal in 1991 of 1 million acre-feet of water recycled by 2020. Today, California's water agencies recycle about 669,000 acre-feet annually<sup>1</sup>. The California Department of Water Resources (DWR) estimates that statewide, there is a potential of 1.35 million to 1.75 million acre-feet annually of additional water supply from recycled water.

In 2008, as part of Governor Schwarzenegger's comprehensive water plan, the 20x2020 Water Conservation Plan was initiated to maximize water efficiency between 2009 and 2020. Recycled water programs and conservation projects are key to achieving this goal of 20% reduction by year 2020. Although the District is not required by state law to establish conservation targets for its service area as part of the 20x2020 legislation, most of the individual retail cities and agencies are. Therefore, the District engaged with the Gateway Regional Water Management Authority to establish a plan for the Central Basin service area which most cities and agencies agreed to comply with. As such, the District added the 20x2020 regional plan to its 2010 Urban Water Management Plan (UWMP) which was approved in June 2011. The last update of the District's UWMP was in 2015.

### Water Supply Outlook

California's increasing population is a driving force behind the increasing water demands. California's population increased from about 30 million in 1990 to about 38.8 million in 2014 and is growing at a rate of about 800,000 annually. By 2060, California expects to have a population of 52.7 million people. Central Basin's service area is expected to increase at a slightly lower rate of growth from the present 2 million to nearly 2.5 million by 2060. The DWR reports new surface storage facilities in Southern California (such as Diamond Valley Lake) and the expansion of groundwater storage programs will help lessen the impact of future droughts and increase local reliability. DWR also states that water agencies should continue to develop water resource

---

<sup>1</sup> "WateReuse Association 2011

programs such as recycled, conservation, and conjunctive use programs to meet future demand.

## **Section II. Water Resource Management Approach**

---

For more than four decades, the District was strictly an imported water wholesaler, purchasing supply from the Bay-Delta and Colorado River through MWD to supplement local groundwater supplies. Since the early 1990s, the District has embarked on an ambitious plan to help make its service area more drought resistant through more efficient use of supplies and resources already available. Water conservation and water recycling are at the heart of this resource management approach. The District also assists local groundwater producers and agencies in protecting groundwater supplies and optimizing the use of the groundwater basins.

Water conservation is a demand-management method aimed at reducing the consumption of potable water (groundwater and imported water) at the point where it is put to use. Water recycling is the beneficial re-use of wastewater for specific non-potable applications such as irrigation. Both conservation and recycling are effective tools for reducing reliance on imported water and extending the use of locally available supplies – essentially “drought-proofing” the area against future imported water shortages.

### **Water Conservation**

In 1991, the District joined a state effort to conserve water and signed the “Memorandum of Understanding” regarding urban water conservation in California and agreed to implement the established conservation “Best Management Practices” (BMPs). The District is committed to implementing proven and reliable water conserving technologies and educational programs for conservation within its jurisdiction.

In partnership with MWD, cities, water retailers, federal and state agencies, the District’s conservation programs have been responsible for providing various opportunities and programs to the communities the District serves. The programs allow water retailers to assist and raise funds for their programs. Also, local contractors can assist with program implementation. The programs include the distribution and installation of thousands of ultra-low flush toilets and high-efficiency toilets, and the availability of rebate programs for high-efficiency clothes washers, high efficiency toilets, waterless urinals, and commercial, industrial and institutional devices within the District’s service area.

Combined with plumbing codes, public information, school education, and other conservation efforts, the District programs have resulted in a significant water savings. As described in the District’s 2010 Urban Water Management Plan (UWMP), conservation efforts by the District have resulted in savings estimated at 15,000 acre-

feet each year or about 6 percent of total annual demand. In addition, the UWMP shows that conservation and recycling programs are working to increase efficiency. Since 2000, overall water demand in the District's service area has remained relatively constant while population has increased by over 300,000 over the same period.

In 2006, the Central Basin Board of Directors took a bold leadership role by adopting the first ever, "Water Conservation Master Plan." (Master Plan) This Master Plan serves as a road map for Central Basin's long term water savings efforts. The goal is to evaluate existing conservation measures, as well as identify the latest trends and technology in the market to develop a viable, innovative, regional strategy to preserve our water resources. During the first year, after the Master Plan was adopted, the conservation goal was exceeded by 107%! In the following two years, the conservation goal was exceeded by 173% and 178%, respectively. The Master Plan was updated in 2011 and again in 2015 to include state and federal legislation issues, funding limitations and state standards as they have changed since its adoption.

In 2009, in response to the drought conditions and low supplies of surface water throughout the state, Central Basin launched a new water conservation campaign called "Shut Your Tap!" This campaign consists of community partnerships to promote water conservation within Central Basin's 24-city service area. Central Basin will continue the campaign to focus on providing resources and information to help residents conserve water and become more water efficient.

In 2015, as part of a Department of Energy grant, Central Basin completed the first federally funded water and energy grant. The grant's goal is to show the nexus between water and energy through the smoothing of recycled water peak demand periods lessening the need for higher powered pumps thus providing energy and cost savings.

The District continues to be on the cutting edge developing new and viable programs that conserve water to help maintain a safe and reliable water supply.

## **Section III. Description of Water Recycling Program**

---

In 1989, the District, in partnership with MWD and the County Sanitation Districts of Los Angeles County (CSDLAC), began planning the implementation of a program to deliver recycled water to a significant portion of the District's service area.

The two recycled water projects that resulted from this planning, E. Thornton Ibbetson Century Recycled Water Project and Esteban E. Torres Rio Hondo Recycled Water Project are interconnected and operate as one distribution system. The combined projects are now referred to as the Central Basin Recycled Water Project. The program will continue to grow as additional customers are identified and expansion is determined to be economically feasible. The recycled water program provides the District's service area with a reliable, local water supply that reduces dependence on imported water.

### **E. Thornton Ibbetson Century Recycled Water Project**

Construction on the first part of the program, the Ibbetson Project, began in December 1990 and the first customers were connected in February 1992. Construction of the entire Ibbetson Project was completed in August 1993.

The District acquires water from the Los Coyotes Water Reclamation Plant (a CSDLAC facility), and uses the City of Cerritos' pump station and the Hollydale Pump Station to distribute recycled water through several miles of pipeline.

### **Esteban E. Torres Rio Hondo Recycled Water Project**

In 1991, District staff prepared a feasibility study and implementation plan for the Torres Project. Design of project facilities was completed and construction on portions of the project began in February 1993. Those portions of the project are now in operation and delivering water to customers.

The District acquires water from the San Jose Creek Water Reclamation plant (a CSDLAC facility), and uses the Rio Hondo Pump Station to distribute recycled water through several miles of pipeline.

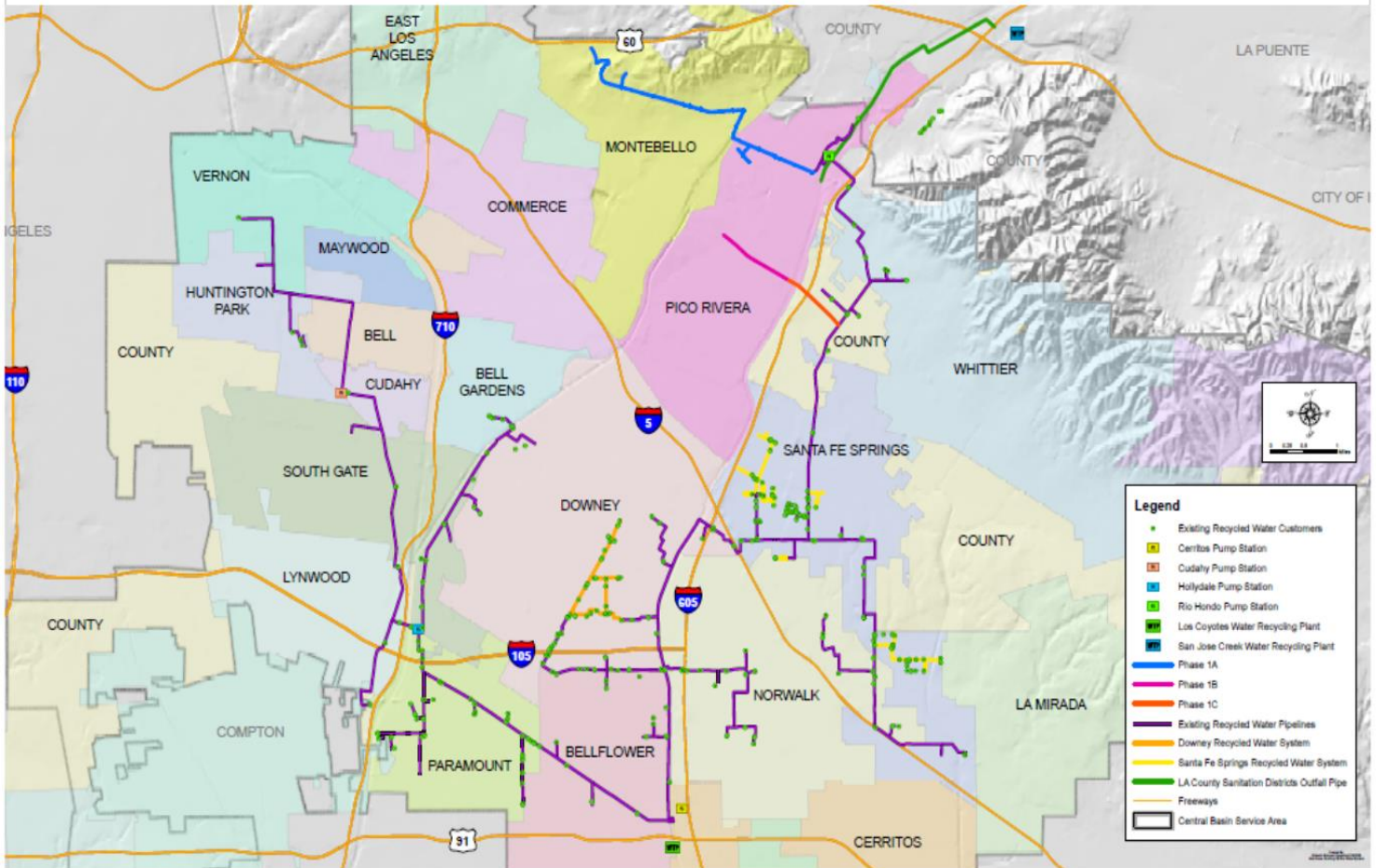
### **Recycled Water Distribution and Use**

In an attempt to drought-proof the area, the District has aggressively marketed and connected irrigation and industrial users to the recycled water system. Current irrigation uses include schools, golf courses, freeway landscape, parks, cemeteries, nurseries, and street medians. Current industrial uses include concrete mixing, carpet dying and cooling towers. Figure 2 shows the existing facilities of recycled water system.



**FIGURE 2  
CBMWD  
RECYCLED WATER CONSUMPTION  
(Fiscal Year 2017-2018)**

**Central Basin Municipal Water District Recycled Water System**



## Section IV. Capital Improvement Plans

---

The District's Capital Improvement Projects Plan and Five (5) Year Recycled Water Facilities Plan (Recycled Water Master Plan) seeks to expand the existing recycled water distribution system. Current drought conditions, new regulations, and available funding through Proposition 1 have accelerated the District's expansions efforts.

Plans included in the FY 2017/18 Preliminary Capital Improvement Projects Plan are described below.

### Project

#### **Recycled Water Storage Project**

##### Project Description

The existing CBMWD recycled water system is divided into three pressure zones. Zone 1 in the north is supplied from the Rio Hondo Pump Station. To the south is Zone 2, which can receive water from zone 1 through a pressure-reducing valve, or from the Cerritos Pump Station through variable frequency drives currently set to maintain system pressures. Zone three lies in the western portion of the service area and is supplied through the Hollydale Pump Station from zone 2. All three-pressure zones make a hydraulically closed system with no storage to buffer customer demands. Since water can be fed from Zone 1 into Zone 2, but not completely in the opposite manner, Rio Hondo Pump Station needs to be operational whenever there are demands in Zone 1 downstream of the pump station in the Pico Rivera and Montebello areas. Operation of the recycled water system cannot be evaluated with an isolated view of only new customers due to the movement of water from one pressure zone to another and with two water sources. Hydraulic analysis encompasses all aspects of the recycled water system from pressure-reducing valve settings to pumping station operations. System expansion, customer changes in operations and demands can significantly alter system conditions experienced without storage.

In addition, recycled water supply is defined by a contract agreement with the Los Angeles Sanitation Districts for two recycled water sources. CBMWD's two recycled water supply sources are the San Jose Creek Water Reclamation Plant and the Los Coyotes Water Reclamation Plant. Overall volume limits can be increased over time and will need to be considered for future expansion. In the future, storage will help prevent supply shortages and balance demands from supply sources.

Prospective expansion projects and demands are emerging due to potable water conservation measures being implemented by the State of California, and locally within CBMWD's service area. To ensure a reliable regional recycled water supply to offset potable water demands; CBMWD is looking to implement storage in the form of storage tanks. The number, type, size, and locations for storage tanks is yet to be determined. Piping and pumping needs are also to be determined. CBMWD is

looking to complete an in-depth storage study that will include the additional demands currently being developed under related expansion projects.

## Project

### **City of Montebello Expansion Project**

#### Project Description

Central Basin Municipal Water District (CBMWD), Montebello Land Company, City of Montebello, San Gabriel Valley Water Company, and the City of Monterey Park are looking to construct a pipeline to bring recycled water supply into northern area of the City of Montebello, City of San Gabriel and the City of Monterey Park.

Currently, confirmed annual recycled water demand is estimated to be 800 acre-feet per year, including temporary irrigation estimated to be 200 acre-feet per year. Additional recycled water connections and demand estimated as 1,500 acre-feet per year are currently being investigated and will influence final pipe diameters and length. Final design diameter for the pipeline will be between 16-inches and 30-inches in diameter. The present design, for confirmed demands in the amount of 800 acre-feet per year, consist of 16-inch diameter piping for 20,500 (3.8 miles) linear feet. A pump station and master meter will also be constructed for this project.

Project timelines will be impacted by the demand needs of the Montebello Hills Specific Plan, a new housing development, in the City of Montebello. The developer, Montebello Land Company, has a need for recycled water supply.

Phase 1 will bring a 16-inch to 30-inch diameter pipeline approximately 7,500 linear feet up to points of connection for the Montebello Hills Specific Plan, Montebello Town Center, and the Shops at Montebello. Phase 2 will extend a 16-inch to 30-inch diameter pipeline north 5,500 linear feet to serve Resurrection Cemetery and additional sites currently being investigated. Phase 3 will extend the pipeline an additional 7,000 linear feet to serve additional sites out of CBMWD's service area. Additional pipeline alignments may be added to connect additional sites.

## Project

### **La Mirada Recycled Water Expansion Project**

#### Project Description

As part of Central Basin Municipal Water District's (CBMWD's) Capital Improvement Projects plan and Five Year Recycled Water Facilities Plan (Recycled Water Master Plan) to expand our existing recycled water distribution system. Current drought conditions, new regulations, and available funding through Proposition 1 have accelerated CBMWD's expansion efforts.

A recycled water project CBMWD is currently looking to fast track is the La Mirada Recycled Water Expansion Project. CBMWD already has a willing city (La Mirada) and a willing retail water agency (Suburban Water Systems).

CBMWD is planning to expand the existing recycled water distribution system in south Santa Fe Springs into La Mirada to pick up several landscaped facilities. The number of potential customer connections in the La Mirada area are estimated to be 40. It is also estimated that these facilities are consuming around 700 acre-feet of potable water per year for irrigation. Facilities needed consist of 28,765 linear-feet of pipeline, ranging in size from 20 inches to 6 inches in diameter. A pump station and master meter will also be constructed for this project.

The estimated cost for this project is approximately \$15 Million dollars. This project will utilize several sources of funding to assist in its construction, including proposition 1 grant funding and CA state revolving fund. Construction for this project will not commence until all funding sources can be identified.

## Project

### **Gateway Cities Recycled Water Expansion Project**

#### Project Description

The City of South Gate, the City of Bell Gardens, the City of Lynwood, and the Central Basin Municipal Water District (CBMWD) are considering partnering to expand CBMWD's existing system into their cities to supply more sites recycled water. Under a bundled project named the Gateway Cities project, submitted for Proposition 84 funding, the benefit will be providing 453 acre-feet per year (AFY) of water savings, and water quality improvement. This will be done by preparing planning, design, and environmental documentation for pipelines that will extend the CBMWD recycled water system. After completing this portion of the project, the partnering agencies plan to look to Proposition 1 funding for the design and construction of the project. The Project will provide 453 AFY of recycled water to irrigate nine parks and schools, thus reducing the need for potable water supply at these facilities. The Project is named the Gateway Cities Project.

**City of Bell Gardens** - Plans, Specifications, and Estimate of Probable Construction Costs for The Gateway Regional Recycled Water System Extension in the City of Bell Gardens, CA. This Project consists of approximately 5,500 linear feet (LF) of recycled pipeline varying in diameter between 8" and 16". The proposed recycled pipeline will begin with a connection to the existing 16" recycled pipeline in Garfield Avenue at Park Lane. The new recycled pipeline will include approximately 2,950 LF of 16" diameter recycled water pipeline heading in a northerly direction along Garfield Avenue to Florence Place. At Florence Place the recycled water pipeline will be reduced to a 12" diameter pipe heading east for 2,320 LF along Florence Place from Garfield Avenue to Sudan Avenue. Prior to reaching Sudan Avenue, at the intersection of Florence Place and Emil Avenue an 8" diameter recycled water

pipeline will head in a northerly direction for 230 LF along Emil Avenue. The new recycled water pipeline will serve Veterans Park and Suva Elementary/Intermediate School Complex.

**City of Lynwood** - Plans, Specifications, and Estimate of Probable Construction Costs for the Gateway Regional Recycled Water System Extension in the City of Lynwood, CA. This Project consists of approximately 7,920 LF of 12" diameter recycled water pipeline. The proposed recycled water pipeline will connect to an existing 12" diameter pipeline in Wright Road and extend 6,120 LF in a westerly direction along Fernwood Avenue to Bullis Road. At Bullis Road the recycled water pipeline will proceed in a northerly direction along Bullis Road for approximately 1,800 LF to the Lynwood Civic Center Complex. The new recycled water pipeline will serve the new Lynwood Linear Park along Fernwood Avenue, the Lynwood City Park, and the Lynwood City Hall Complex along Bullis Road.

**City of South Gate** - The work will consist of the preparation of Plans, Specifications, and Estimate of Probable Construction Costs for The Gateway Regional Recycled Water System Extension in the City of South Gate, CA. This Project consists of the construction of approximately 21,500 linear feet (LF) of recycled pipeline varying in diameter between 8" and 18". The proposed recycled pipeline will begin with a connection to the existing 18" recycled pipeline in Atlantic Avenue at Southern Avenue. Beginning at Park Avenue the new recycled water pipeline will extend along Southern Avenue to Alameda Street approximately 14,400 LF. At Alameda Street, the pipeline will head in a southerly direction approximately 3,900 LF to Sequoia Drive. In addition, approximately 2,000 LF of pipeline will be constructed in California Avenue north from Southern Avenue to South Gate City Hall and another segment will extend approximately 1,200 LF along State Street from Southern Avenue to Firestone Boulevard. The new recycled water system extension will serve South Gate Park, State Street Park, South Gate Middle School, Stanford Avenue Park, American Apparel, Koos Manufacturing Co., South Gate City Hall, South Gate High School, South Gate East High School, and the Jordan Downs Recreation Center and High School Complex.

## Project

### **City of Monterey Park Recycled Water Expansion**

#### Project Description

This project expands the recycled water system into the City of Monterey Park. There are three water purveyors provide water services within the City: The City of Monterey Park, California Water Service Company and San Gabriel Valley Water Company.

The expansion consists of approximately 11,500 linear feet of pipeline construction. The project costs are estimated at \$3,675,000.00 for the 11,500 LF of pipeline construction. The planning, design, environmental, and project / construction

management are estimated at 2.5%, 7.0%, 2.0% and 6.5% of construction cost respectively. There is approximately 1000 Acre-feet per year of demand.

## Project

### **Pico Rivera Mines Ave Recycled Water Pipeline Project (North)**

#### Project Description

This project expands the recycled water system with several recycled water pipelines laterals off Mines Ave in the city of Pico Rivera. The water purveyor for these sites is Pico Water District. This expansion is estimated to increase recycled water sales by 49 acre-feet per year. The total amount of linear-feet of pipeline is estimated at 5,200. The total project cost is estimated to be \$1,863,500. Onsite retrofit work will be completed by El Rancho Unified School District and will be at no cost to Central Basin.

The project is split into two distinct 4-inch recycled water pipeline extensions. The first lateral taps into the exiting Central Basin 8-inch ductile iron recycled water pipeline at the intersection of Mines Avenue and Passons Boulevard, and goes south along Passons Boulevard. At the intersection of Cosgrove Street and Passons Boulevard, the extension splits onto Cosgrove Street going west and also continues south on Passons Boulevard. The Cosgrove Street expansion connects to Valencia Elementary school, while the Passons Boulevard line connects to El Rancho High school. The total pipeline length for these sections is 3,400 linear feet. These sites are estimated to increase recycled water sales by 27 acre-feet per year.

The second recycled water pipeline extension taps into the existing Central Basin 8-inch ductile iron recycled water line at the intersection of Mines Avenue and Rosemead Boulevard, and goes south along Rosemead Boulevard. At the intersection of Coolhurst Street and Rosemead Boulevard, the extension splits onto Coolhurst Street going northwest and also continues south on Rosemead Boulevard. The Coolhurst Street expansion connects to Rio Vista Park and Rio Vista Elementary school, while the Rosemead Boulevard line connects to Ruben Salazar Middle school. The total pipeline length for this section is 1,800 linear feet, and will provide an estimated 22 acre-feet per year increase in recycled water sales.

## Project

### **Pico Rivera South Pipeline Project**

#### Project Description

This project expands the recycled water system into north of Pico Rivera. The three water purveyors that provide water services within the City of Pico Rivera are the City of Pico Rivera, the Pico Water District, and the San Gabriel Valley Water Company. Water is additionally conveyed to the Rio Hondo Spreading Grounds and San Gabriel Spreading Grounds in Pico Rivera.

The alignment begins on Lakewood Blvd in the City of Downey, connecting to the City of Downey's recycled water system. The alignment goes north under the I-5 freeway, and turns east on Terradel St. The alignment turns north on Serapis Ave, east on La Docenta Ln, north on Buhman Ave, and finally east on Maxine St.

At approximately 76 Acre-feet per year of demand, the expansion on the Southern portion of the service area consists of approximately 7,700 linear feet of pipeline construction. Project Costs are estimated to be \$2,024,000.00 for the 7,700 linear feet of pipeline construction. The planning, design, environmental, and project / construction management are estimated at 2.5%, 7.0%, 2.0% and 6.5% of construction cost, respectively.

## Project

### **East Los Angeles Recycled Water Expansion Project**

#### Project Description

Central Basin Municipal Water District (CBMWD) and the City of Los Angeles Department of Water and Power (LADWP) are looking to construct a pipeline to bring recycled water supply into LADWP's service area. The recycled water pipeline will extend from the existing CBMWD system within the City of Vernon to sites located within the City and the Boyle Heights area of East Los Angeles. The total estimated project cost is \$12,426,000.

The alignment connects to the existing CBMWD system in Vernon at the intersection of E 50<sup>th</sup> St and S Boyle Ave. The alignment travels north to Leonis, then East to S Downey Road. The alignment extends north outside of Vernon, and turns east on Lorena and then due east on Olympic Boulevard. The alignment splits on S Indiana Blvd, upon entering the East LA service area. One section goes north on Indiana Blvd to provide proximity to Salazar Park, Ramona High School and Evergreen Cemetery. The other section continues east on Olympic Blvd, turns north on Downey Ave to go under the I-5 Freeway, turns east onto Telegraph Rd, and

finally north again on Easter Ave. This alignment provides proximity to Eastman early education and junior high school, Home of Peace memorial park, and both Calvary and Serbian cemeteries.

This alignment ranges from 6-inches to 18-inches in diameter and is 40,750 linear feet (7.7 miles) in length. This pipeline alignment partially follows a previous design meant to connect CBMWD's existing infrastructure to form a looped system which will support future expansion goals. Estimated annual recycled water consumption is estimated to be 1,400 acre-feet for this alignment, with additional expansion anticipated at a later date. A master meter connection with LADWP at the LADWP and CBMWD service area boundary line is part of the scope of work for this project. LADWP will use this recycled water supply connection to expand recycled water service within their own service area.

Based on the current CBMWD recycled water system operating pressures and the minimum required pressure to serve the Evergreen Cemetery additional lift is required to serve the proposed customers. In order to provide the flow and pressure to the proposed recycled water system customers, a new booster station will need to be constructed. The booster station will consist of three pumps. Two duty, and one standby.

## Project

### **Maywood Recycled Water Expansion Project**

#### Project Description

This project expands the existing recycled water system into the City of Maywood, servicing several customers in the service area of the Maywood Mutual Water Companies, #1 #2 and #3. Central Basin Municipal Water District (CBMWD) has provided a preliminary alignment to the City for their consideration. The total estimated project cost is \$2,975,000.

The alignment begins at the intersection of Otis Ave and Randolph St in the City of Huntington Park. The alignment moves east on Randolph St and turns north on Flora Ave which enters the City of Maywood. The alignment then turns east onto E Slauson Ave, turns north on Mayflower Ave, east on 56<sup>th</sup> St and southeast on 52<sup>nd</sup> St. The alignment completes by continuing south on 52<sup>nd</sup> St and the turns due east onto E Saluson Ave, continuing into unidentified future connections.

This alignment provides service to several customers in the Maywood Mutual #1 and #3 service areas, and simultaneously provides a window into future expansion into Maywood Mutual #2. The anchor customer identified is Matheson Tri-Gas, an industrial customer with estimated water usage of 350 Acre-feet per year. The project as a whole would provide an estimated 550 Acre-feet of recycled water



usage across its entirety. The project would require 9,100 linear feet of 8-inch diameter pipeline.

## Section V. Benefits of Water Recycling Program

---

The District's water recycling program creates multiple benefits for both potable and recycled water users within its service area:

- All property owners and residents benefit from the increase in the availability of potable water resulting from the use of recycled water for non-potable uses that would have otherwise been met with potable water.
- The extension of the potable supply due to its replacement with recycled water will be particularly beneficial during drought conditions, when the availability of imported water can be significantly reduced, thus impacting the potable supply. Drought-proofing will also help mitigate adverse economic impacts, which typically accompany a severe drought.
- Recycled water users benefit from a supply that is not subject to hydrologic variability locally or in other parts of the state that contribute to the imported supply. This is particularly beneficial to commercial and industrial users which rely on a firm, dependable supply of water for their operations. Water supply reliability is an incentive for industry to remain in, or locate in, the District's service area.
- Recycled water users can also benefit from a lower per unit water cost than potable, the difference depending primarily on the amount of imported water included in the potable supply.

## Section VI. Long Range Financial Planning

---

The District has also developed an approach to recovering the costs of its recycled water program. The approach has been to not only ensure that adequate revenue is recovered to fund the program, but also to create a blend of revenue sources that would equitably distribute the fixed and variable cost components of the program to the appropriate beneficiaries.

To this end, program costs were divided into two broad categories:

- 1) costs attributable to the development of the program (fixed) and,
- 2) costs attributable to operation and maintenance of the system (variable).

### Variable Costs

The District determined that operation and maintenance costs of the distribution system would be paid directly by those customers purchasing the recycled water. This is considered equitable on the basis that recycled water customers receive the direct

benefit of the recycled water and pay in proportion to the quantity of water they purchase.

**Fixed Costs**

The District also determined that the benefit of this new water source could not be reflected through the sale of recycled water alone. As stated above, the increase in the availability of potable water is a benefit to every property owner within the District’s service area. As such, it is appropriate that the capital and replacement costs of the recycled water program be partially recovered through a parcel charge known as a standby charge.

Table 1 shows the District’s projected operating results, including operating expenses and debt service for fiscal year 2017-18. Revenues are projected to exceed operating expenses, with the balance being used to contribute toward replenishing the District’s reserves that were significantly reduced through an early defeasance of debt related to the recycled distribution system in fiscal year 2012-13. The debt service is proposed to be recovered through the standby charge.

**TABLE 1  
Determination of Total Standby Charge Revenue Requirement**

<b>PROJECTED OPERATING RESULTS FY 2017-18 (\$ millions)</b>	
Revenues (without standby)	\$47.89
Operating Expenses	(50.49)
Debt Service	(2.32)
Operating Results	<u>\$ (4.92)</u>
<b>Standby Charge Amount</b>	<b>\$3.27</b>

**External Funding**

The District has been aggressive in seeking external financial assistance to help defray the cost of the recycled water program. The federal, state and regional organizations that have contributed financially to the development of the program include the U.S. Department of Interior through the U.S. Bureau of Reclamation, the U.S. Department of Energy, Department of Water Resources, the Metropolitan Water District of Southern California, San Gabriel Valley Water Quality Authority and the State of California through the Greater Los Angeles County Integrated Regional Water Management Plan.

## Section VII. Rate and Method

---

In the calculation of the standby charge, it is necessary to first define the Benefiting Unit. The number of total Benefiting Units is divided into the total standby charge revenue required to determine the standby charge per Benefiting Unit.

The definition of a Benefiting Unit for the purposes of this parcel assessment is founded on the determination that the economic value of one acre-foot of water, in terms of employment and production, is several times greater than the actual cost of that acre-foot of supply provided. Because the District is in the business of providing water, it was deemed appropriate that the Benefiting Unit be defined as one acre, or portion thereof.

As shown in Table 2, the District's service area includes 308,267 parcels encompassing 69,230 acres. For the purposes of this report, a Benefiting Unit is described as either (a) any parcel with 1 acre or less; or, (b) any acre, or portion thereof, within a parcel with 1 or more acres. Therefore, the District's service area has approximately 326,732 Benefiting Units. The FY 2017-18 parcel assessment (calculated by dividing the projected standby charge requirement by total Benefiting Units) is approximately \$10 per Benefiting Unit.

## PROPOSED STANDBY CHARGE FOR FY 2017-18

The District pledged current and future standby charge proceeds in its bond agreements dated 2008 and 2010. For FY 2017-18, the District will continue to use standby charge proceeds to repay principal and interest payments obligated under bond agreements. The proposed assessment level and methodology for FY 2017-18 will remain the same as FY 2016-17.

**TABLE 2**  
**Projected Benefiting Units**

	ACRES =<1	ACRES >1	Total
<b><u>Improved Parcels</u></b>			
Parcels	294,865	6,289	301,154
Acres	63,647	3,360	67,006
Benefiting Units	294,865	18,662	313,527
<b><u>Unimproved Parcels</u></b>			
Parcels	6,473	640	7,113
Acres	1,882	341	2,224
Benefiting Units	6,473	6,732	13,205
<b><u>Total</u></b>			
Parcels	301,338	6,929	308,267
Acres	65,529	3,701	69,230
<b>Benefiting Units</b>	<b>301,338</b>	<b>25,394</b>	<b>326,732</b>

The method of, and formula for, this assessment is proposed as \$10 per Benefiting Unit (i.e., \$10 per parcel of 1 acre or less; or \$10 per acre, or portion thereof, for parcels 1 acre or more). The estimated revenue for FY 2017-18 is approximately \$3,267,317.95. The levy of this assessment is proposed under the Municipal Water District Act, Alternative Procedures.

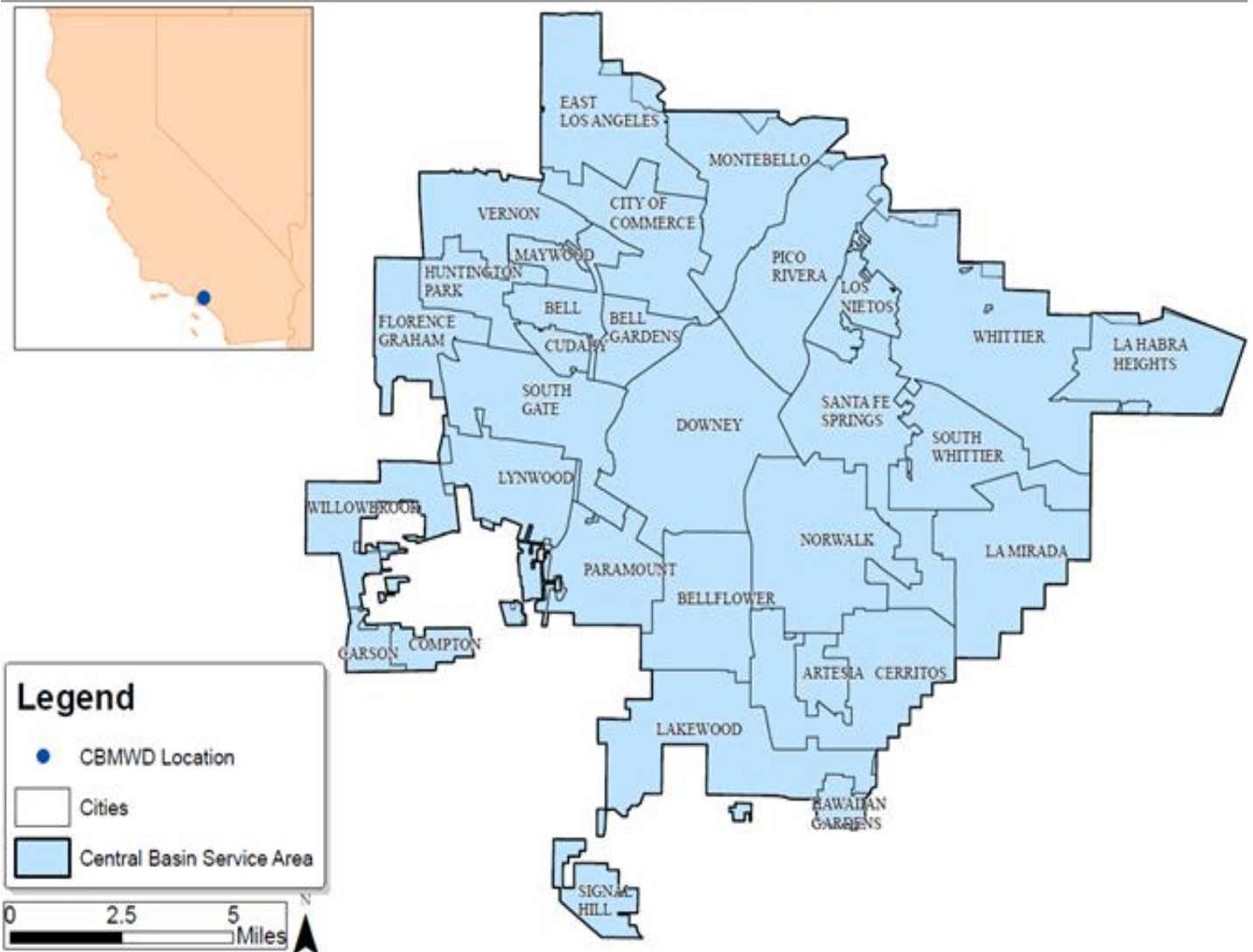
### **SUMMARY**

The benefits described in this Engineer’s Report far exceed the recommended charge. Conservation of potable water through demand management and recycled water helps to “drought-proof” the entire service area by increasing the potable supply for all property owners within the District. The standby charge recognizes that there are economic benefits to land from extending potable water supplies through the use of recycled water, whether or not such lands are directly using the recycled water. The

performance of the financial plan will be reevaluated annually to ensure that the program expectations are being realized.

## Section VIII. District Diagram

**Cities Covered by CBMWD**



## Section IX. Standby Charge Roll

---

The Standby Charge Roll is voluminous, is on file with the Board, and is hereby included by reference.