



City of Bellflower

Municipal Water System

2015 Annual Report

June 9, 2015

**City of Bellflower
16600 Civic Center Drive
Bellflower, California 90706
(562) 804-1424**

1. **Introduction.** The following report has been prepared for the City Council to provide an overview of the City's Municipal Water System, including a brief history, summary of water sources and water costs, history of MWS water rates, prior year accomplishments, and major initiatives for the coming year.

2. **Definitions.** Where used herein:

- "Acre foot" or "af" means the amount of water necessary to cover an acre of land to a depth of one-foot. One acre foot of water equals 325,851 gallons or 43,560 cubic feet. This is the standard unit of volume for large scale water resources.
- "Billing Cycle" or "BiMB" means the interval between water bills, presently bimonthly.
- "BMC" means Bellflower Municipal Code
- "BOR" means Bureau of Reclamation.
- "BSMWC" means Bellflower-Somerset Mutual Water Company.
- "Ccf" means 100 cubic feet, which is typically the unit basis for a commodity charge.
- "City" means the City of Bellflower.
- "Commodity Charge" means the rate charged per 100 cubic feet (ccf) of water used, as established by resolution of the City Council.
- "CPUC" means the California Public Utilities Commission, a regulatory body that oversees, among other things, privately held water companies.
- "Customer" means the owner, tenant, or other occupant of the property who has established the water service connection.
- "Groundwater" means water pumped by a provider from its own well(s) for its own use.
- "GPM" means "gallons per minute," the standard measurement used for water flow.
- "Imported water" means water obtained from a third-party source.
- "MWS" means the City of Bellflower Municipal Water System.
- "MWD" means the Metropolitan Water District of Southern California.
- "Owner" means the owner of the property at which the service connection is located, or his/her authorized agent.
- "Person" means any individual, firm, company, public entity, association, society, corporation, partnership, or group.

- “Service Charge” means a charge which is applicable to all metered service to provide reimbursement to the City for the costs of services related to the supplying of water to the property but which are not directly related to the amount of water utilized at a site but, instead, are otherwise appropriately apportioned to the customer, as established by resolution of the City Council.
- “Service Connection” means the water line and appurtenant facilities used to extend water service from the water main to the meter box.
- “Water Service Area” means the area of the City served by the MWS.
- “Water Service” or “Water Services” means supplying service through a pipe or other constructed conveyance for any purpose, but does not include the sale of water for human consumption by a water supplier to another water supplier for resale.
- “Water System” means the infrastructure of the City’s water system only.
- “Water System Operator” or “Operator” means the party with whom the City contracts for the operation of the water system, or delegated specific responsibilities for the operation of the water system, presently Bellflower-Somerset Mutual Water Company.

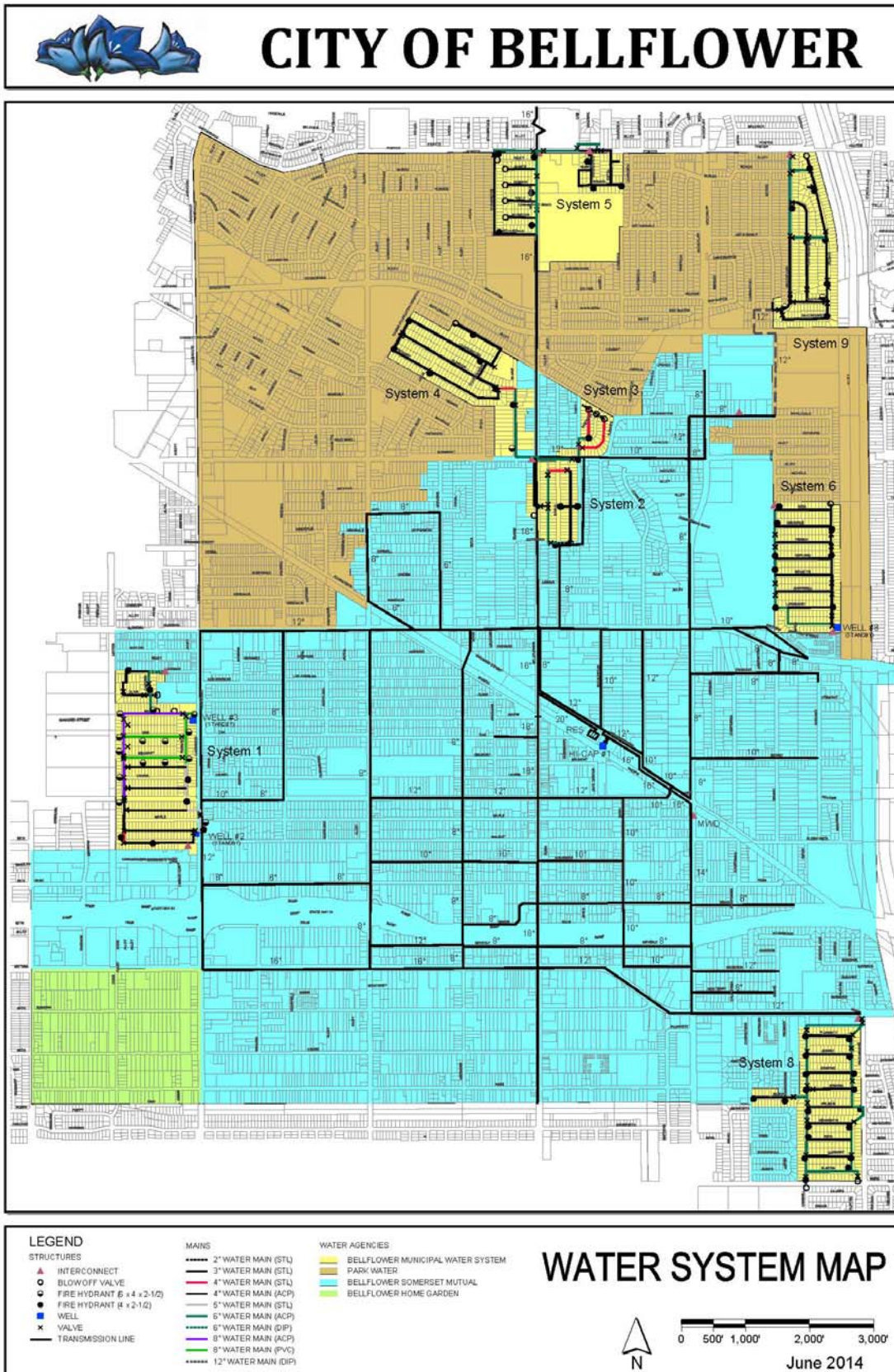
3. **Background.** The MWS was established by the City Council in 2007 to operate the water system acquired from Peerless Water Company at a cost of \$5.8 million.

a. The MWS currently serves 1,827 customers, or approximately 10% of the City, from eight separate systems in geographically separated areas:

Distribution of MWS Customers by System	
System	Customers
1	412
2 & 3	171
4	244
5	162
6	275
8	312
9	243
Non-System Customers	8
Total	1,827

Distribution of MWS Customers by Meter Size	
Meter Size	Customers
5/8" x 3/4"	1,776
3/4"	24
1"	8
1 1/2"	4
2"	14
3"	0
4"	1 Fire
Total	1,827

Of the MWS's 1,827 customers, 1,792 are single-family residential, 30 are multi-family residential, 1 is commercial, and 4 are industrial.



b. The MWS production facilities consist of one high capacity water well (HCW):

MWS Water Wells						
Well	Location	Status	Dimension	Depth to Water	Pumping Capacity	Quantity Pumped
HCW 1	Flora Vista Street	Active	30"	101'	3,500 gpm	1,995 af in FY 14-15

Wells 2, 3, and 8 were previously taken out-of-service and are waiting decommissioning. Well 17 was decommissioned in June 2014.

c. The MWS distribution system consists of 78,533 lineal feet of asbestos cement pipe, ductile iron, polyvinyl chloride and welded steel pipe ranging from 2-inches to 12-inches in diameter. The majority of the distribution system consists of 4-inch and 6-inch AC pipe. The system also includes approximately 1,826 meters and 82 fire hydrants.

Pipeline Summary					
Pipe Inside Diameter (inches)	Pipe Lengths (feet) Asbestos Concrete	Pipe Lengths (feet) Ductile Iron	Pipe lengths (feet) Polyvinyl Chloride	Pipe Lengths (feet) Steel	Total Length (feet)
2	0	0	0	1,177	1,177
3	0	0	0	6,822	6,822
4	38,332	78	0	193	38,603
5	0	0	0	1,281	1,281
6	20,601	330	90	0	21,021
8	2,308	122	4,318	0	6,748
12	0	2,880	0	0	2,880
Total	61,241	3,410	4,408	9,473	78,532

Except for 7,690 linear feet of new and replacement distribution piping installed during the last five years, the age of the pipelines typically ranges from 50 to 70 years with more than 50% of the distribution system reaching the end of its service life within the next 20 years.

d. The MWS System owns 986 acre feet of water rights which is sufficient to meet our 700 acre feet per year average estimated service demand and to lease water rights surplus to our needs at competitive rates to other water purveyors. Separate from the MWS, the City also owns another 394 acre feet of water rights for a grand total of 1,380 acre feet.

e. The MWS' average estimated service demand is just under 700 acre feet per year, which includes approximately 50 feet used for system flushing and other maintenance operations.

f. Under the direction of the City Manager, the Director of Public Works oversees strategic planning, financial management, policy development, and capital projects for the MWS. The Director is assisted by the City's Finance Department, the City's contract water program manager, and the City's contract water system operator.

g. The City's contract water system operator, Bellflower-Somerset Mutual Water Company, is responsible for the day-to-day operation of the Water System.

4. Key Dates. The following are key dates in the history of the Municipal Water System:

Circa 1940	Peerless Land and Water Company founded
May 2000	Southern California Water Company and Peerless Water Company submit joint application to CPUC for approval of merger
October 2000	Peerless customers ask that City intervene to block merger and City Council adopts resolution opposing the proposed merger
November 8, 2001	CPUC denied the proposed merger
August 2002	City began formal negotiations for purchase of Peerless Water System
May 24, 2004	City Council authorizes offer to purchase Peerless Water Company assets and research into issuance of bonds to finance acquisition
December 13, 2004	City Council initiated action to condemn Peerless Water Company
February 2005	City suspended negotiations to purchase Peerless Water System
May 2005	City entered into litigation with Peerless Water Company
June 2006	Bellflower Public Financing Authority (BFA) created
August 14, 2006	City concluded its Operating Agreement with BSMWC
December 11, 2006	City adopted PWC rates as initial MWS water rates
January 12, 2007	City of Bellflower assumed control of PWC assets; litigation terminated
June 16, 2007	City increased water rates by 60%
June 2007	Completed the Carfax/Nava interconnection in System 6
April 2008	Completed the MWS Water Master Plan
June 16, 2008	City increased water rates by 4%
June 2008	Completed the Lakewood and Walnut interconnection in System 1 July 9, 2008 Completed sale of \$8.23 million in MWS Certificates of Participation
November 2008	Completed closure of 12 inactive/abandoned water wells
October 2009	Completed the Mapledale to Van Ruiten interconnection in System 9
November 9, 2009	City increased water rates by 3.5%
April 2010	Completed partial reconstruction of System 1, serving 108 customers
October 2010	City began principal payments on MWS Certificates of Participation
March 2012	High Capacity Well #1 completed
June 2012	Wells #3 and #8 taken off-line and out-of-service
November 2012	Dunbar interconnection completed
February 2013	First meeting of the Municipal Water Commission
April 2014	Somerset/Leahy Main Extension completed

	Governor Jerry Brown declares a drought emergency
June 2014	Well #17 decommissioned
July 2014	City received a Bureau of Reclamation grant to install 600 smart water meters over a 3 year period
August 2014	In response to the Governor's drought declaration, City Council adopts Resolution 14-49 that restricts outdoor irrigation of ornamental landscaping by MWS customers to no more than two days per week
November 2014	Phosphate Treatment system installed at the High Capacity Well Installed 12 metered services on BSMWC's existing water main and abandonment of 800 feet of deteriorating 4" main
April – July 2015	Completed installation of 75 smart water meters
April 2015	Governor Jerry Brown declares a continued drought emergency and issues an executive order to the SWRCB to impose mandatory conservation restrictions
May 2015	In response to the Governor's executive order, the SWRCB imposes mandatory urban water conservation restrictions on all water suppliers and consumers to achieve a statewide 25% reduction of potable water usage by February 2016
June 2015	City Council lifts the suspension on Bellflower Municipal Code 13.16 (Water Conservation Measures) and amends it to include the new SWRCB mandated water conservation regulations
July 2015	Completed interconnection at Felson and Carpintero

5. **Water Conservation.** Traditionally, the City has relied on voluntary water conservation measures. In the event of a statewide drought or other water emergency, the City may implement mandatory water conservation measures regulating hose watering, watering lawns and landscaping, indoor plumbing and fixtures, washing vehicles, drinking water in restaurants, and water-efficient landscaping. These measures, which are found in Chapter 13.16 of the Bellflower Municipal Code, were originally implemented during a drought in 2009 and suspended following the conclusion of the drought in 2011.

However, the State is currently facing a historic drought that continues to worsen. Having declared drought emergencies in both 2014 and 2015, the State recently imposed mandatory urban water conservation restrictions on water suppliers and consumers to achieve a 25 percent reduction of potable water usage in 2015. To comply with these drought restrictions, City Council will consider the suspension of BMC Chapter 13.16 and amend the ordinance to include the new potable water restrictions on June 8, 2015. If approved, Chapter 13.16 will be enforced by Code Enforcement, with written warnings and/or other actions per BMC Chapter 1.08 and/or Chapter 1.12. Residents are most strongly encouraged to conserve water whenever possible. Water remains our most valuable and essential natural resource.

6. **Water Usage.** As a result of conservation efforts and improved system maintenance, MWS' water usage in 2014-15 has decreased by 5% from prior year levels and is projected to

decrease an additional 10% in 2015-2016. The City continues to search for ways to reduce consumption and improve efficiency.

MWS Water System Usage ¹								
2007-08 Actual	2008-09 Actual	2009-10 Actual	2010-11 Actual	2011-12 Actual	2012-13 Actual	2013-14 Actual	2014-15 Estimated	2015-16 Projected
763.35 af	703.67 af	672.56 af	656.78 af	659.34 af	658.43 af	732.00 af	696.00 af	628.00 af

7. Water Sources. Water used by customers in Bellflower is either “groundwater” (i.e., water pumped from a well) or “imported water” (i.e., water transported via aqueduct or pipe from a remote source - Colorado River, Sacramento Delta, etc.). These water supplies are not unlimited. Therefore it is necessary to conserve water and prevent the unnecessary and wasteful use of these limited resources. The City is served by four retail water providers:

Water Sources						
Water Provider	Percent of City Served	Service Demand	Operating Wells	Water Source		Service Demand
				Ground	Imported	
Bellflower Municipal Water System	10%	696 af/yr	1	100%	0%	986 af
Bellflower-Somerset Mutual Water Company	61%	5,056 af/yr	8 ²	100%	0%	4,413 af
Park Water Company ³	25%	1,761 af/yr	1 ⁴	25%	75%	702 af ⁵
Bellflower Home Garden Water Company	4%	375 af/yr ⁶	0	0%	100% ⁷	306 af
Total	100%	7,888 af/yr	10	78.5%	21.5%	NA

A retail water provider that anticipates a shortfall in water rights needed to meet its service demand can lease additional water rights on the open market or import water from the MWD, provided sufficient water supplies are available.

In addition to the above water rights, the City owns 394 af, which are separate from the MWS and are leased on the open market.

8. Water Costs. The cost of water is largely determined by its source, with groundwater being much less expensive than imported water. Presently, the MWS relies entirely on groundwater. For historical information on the cost of imported water see the 2011 (or earlier) MWS Annual Report.

¹ Includes approximately 50 af/yr expended for system flushing and other maintenance operations.

² Includes 7 wells owned by BSMWC and the high-capacity well owned by the MWS.

³ Park Water Company’s data is for calendar year 2014. Service demand and water source data are extrapolated from data for its Bellflower-Norwalk service area, and includes 4% recycled water.

⁴ Only includes wells physically located in Bellflower.

⁵ Includes all Park Water Company water rights in the Central Basin.

⁶ Bellflower Home Garden Water Company’s data is for calendar year 2014.

⁷ BSMWC provides water to Bellflower Home Garden Water Company through its distribution system.

MWS Current and Estimated Future Water Costs			
Cost	Rate per Acre Foot		
	Jul 2014	Jan 2015	Jul 2015
WRD Recharge Assessment ^{8 9}	\$268	\$268	\$293
Energy	\$185	\$185	\$210
Treatment	\$54	\$54	\$53
Total	\$507	\$507	\$556

9. **Water Rates.** The water rates are reviewed annually, whether or not any rate change is proposed. Water rates have been raised three times since the MWS began operations in January 2007: June 2007, June 2008, and November 2009.

The following is a summary of water rate changes made since acquisition of the MWS in January 2007 (note: the decreased average customer's cost is due to decreased use). The total increase since 2007 amounts to about \$1 per day and is roughly equal to one-half penny for every gallon of water used by the customer.

History of MWS Water Rates					
	Bi-Monthly Service Charge¹⁰	Commodity Charge per ccf¹¹	Average Customer		Cost Change
			Use¹²	Cost¹³	
Initial Rate	\$26.44	\$1.720	36.00 ccf/BiMB	\$88.36	NA
2007	\$68.98	\$2.051	28.11 ccf/BiMB	\$126.63	+43%
2008	\$71.74	\$2.133	26.57 ccf/BiMB	\$128.40	+1.4%
2009	\$74.26	\$2.208	24.77 ccf/BiMB	\$128.96	+0.4%
2010	\$74.26	\$2.208	24.76 ccf/BiMB	\$125.76	-2.5%
2011	\$74.26	\$2.208	26.55 ccf/BiMB	\$132.87	+5.7%
2012	\$64.26	\$2.208	26.24 ccf/BiMB	\$122.21	-8.0%
2013	\$59.26	\$2.208	26.21 ccf/BiMB	\$117.13	-4.2%
2014	\$59.26	\$2.208	29.14 ccf/BiMB	\$123.60	+5.5%
2015	\$59.26	\$2.208	27.67 ccf/BiMB	\$120.36	-2.6%

⁸ MWS is required to pay a \$293 per acre foot Recharge Assessment ("RA") to the Water Replenishment District of Southern California to cover the MWS' share of the costs incurred to recharge the aquifer that supplies groundwater to the MWS.

⁹ WRD Recharge Assessment figures may be impacted by pending litigation regarding the Third Amended Judgment governing the Central Basin. If the Judgment is approved, the RA would increase by an additional approximately \$49/af.

¹⁰ Bimonthly service charge for 5/8 x 3/4-inch meter

¹¹ Per 100 cubic feet of water used; 100 cubic feet of water is equal to 748 gallons

¹² Individual customer's estimated actual average bimonthly use

¹³ Average bimonthly water bill using average use and service charge for 5/8 x 3/4-inch meter

The following chart compares current local water rates.

Comparison of Current Local Water Rates			
Provider	Service Charge per BiMB	Commodity Charge per ccf	Average Customer Bill ¹⁴
Municipal Water System	\$59.26 BiMB	\$2.208/ccf	\$120.42
Bellflower-Somerset Mutual Water Company	\$0.00 BiMB	1st 4 ccf – \$27.04 Ea ccf > 4 ccf - \$1.75	\$68.52
Bellflower Somerset Mutual Water Company (X-County Customers) ¹⁵	\$20.00 BiMB	1st 4 ccf – \$27.04 Ea ccf > 4 ccf - \$1.75	\$88.52
Bellflower Home Garden Water Company ¹⁶	\$57.00 BiMB	\$0.00	\$57.00
Park Water Company	\$40.44 BiMB	Ea ccf ≤ 20 ccf - \$4.787 Ea ccf > 20 - \$5.505	\$180.22

10. MWS Finances. MWS revenue principally comes from water sales; however Federal infrastructure grants, cash advances from the City’s General Fund, and City-provided in-kind services are significant components. The following table shows Federal grants received.

Federal Grants Received and Pending					
Program	Amount	Match	Total	Use	Deadline
2002 EPA STAG	\$873,000	\$714,273	\$1,587,273	Interconnect & HCW	10/31/12
2006 EPA STAG	\$361,300	\$295,609	\$656,909	HCW	10/31/12
2009 CDBG-R	\$319,000	\$0	\$319,000	System 1 Partial Replacement	9/30/12
2014 BOR Water Smart Grant	\$96,364	\$143,636	\$240,000	600 smart meters	9/30/17

¹⁴ Based on MWS’ average customer use of 27.67 ccf/BiMB in FY 14-15.

¹⁵ In 2005 BSMWC acquired a portion of County Water Company which did not include water rights. As a consequence BSMWC customers who were formerly customers of County Water Company are charged an additional fee to pay for the additional water imported by BSMWC to serve their needs. This fee is based on the size of the property serviced, but averages \$20 per bi-monthly billing period.

¹⁶ Bellflower Home Garden charges a flat rate for each dwelling unit (a.k.a., “door”) on a property.

The following table shows monies advanced to date by the City to cover the MWS' cash deficit and City expenses incurred for the MWS with no expectation or repayment, including foregone interest, City personnel costs for MWS management, and ratepayer assistance.

City General Fund Expenditures for MWS				
Fiscal Year	Staff Support & Forgone Interest	Ratepayer Assistance	Total Subsidy	Advance for MWS Cash Deficit
2006-07	\$55,000	\$0	\$55,000	\$276,595
2007-08	\$110,000	\$2,944	\$112,944	\$0
2008-09	\$110,000	\$7,504	\$117,504	\$435,929
2009-10	\$110,000	\$9,339	\$119,339	\$707,137
2010-11	\$113,000	\$15,618	\$128,618	\$180,680
2011-12	\$116,000	\$12,575	\$128,575	\$712,718
2012-13	\$80,000	\$11,612	\$91,612	\$0
2013-14	\$64,000	\$11,198	\$75,198	\$0
2014-15 Estimated	\$66,000	\$8,000	\$74,000	\$0
2015-16 Estimated	\$68,000	\$8,000	\$76,000	\$0
Accrued Interest				\$541,090
Total	\$892,000	\$86,790	\$978,790	\$2,854,149
Less MWS Repayment to General Fund ¹⁷				(\$143,574)
Balance				\$2,710,575

In July 2008, the City completed the sale of \$8.23 million in Certificates of Participation (COP), the proceeds of which have been used to reimburse the City's general fund for the purchase price of the MWS, pay the costs of issuance, and help pay for capital improvements to the System's infrastructure. As collateral for the Certificates of Participation, the City used the Bellflower Civic Center (City Hall and William & Jane Bristol Civic Auditorium) and Thompson Park. With the completion of the high capacity well project, the balance of these funds was exhausted.

Proceeds From Sale of Certificates of Participation		
Revenue From Sales		\$8,230,000
Less PWC Acquisition Costs		-\$6,212,081
Less Cost of Issuance		-\$244,598
Less Underwriter's Discount		-\$123,450
Less Net Original Issue Discount		-\$144,983
Less Deposit to Debt Service Reserve Fund		-\$539,819
Less Expenditures for MWS Capital Projects: ¹⁸	Well Disconnection / Destruction / Rehabilitation	-\$292,267
	Mapledale - Van Ruiten Waterline Interconnection	-\$171,169
	Local Match for System 1 Partial Water Main Replacement	-\$140,721
	High Capacity Well #1	-\$360,912
Balance		\$0

¹⁷ Beginning in FY2012-13

¹⁸ The total of expenditures for MWS capital projects is \$965,069

High capacity well #1 was completed in June 2012 at a cost of \$2.83 million and paid for using federal grants, proceeds from the sale of Certificates of Participation, and cash advances from the City's general fund reserves.

Expenditures for High Capacity Well	
Federal Grants	\$987,323
2008 Certificates of Participation	\$360,912
Advanced from City's General Fund	\$1,480,987
Total	\$2,829,222

11. Major Accomplishments for 2014 – 2015.

a. **Bellflower Boulevard Main Services.** Due to a series of water main failures effecting 12 service connections on Bellflower Boulevard south of Somerset Boulevard, the MWS collaborated on a project with BSMWC to abandon 800 feet of MWS 4-inch steel water main and connect the services to BSMWC's existing water main on Bellflower Boulevard.

b. **High Capacity Well Install Phosphate Treatment System.** The MWS completed the installation of phosphate treatment equipment at the High Capacity Well, which has successfully kept iron and manganese in solution and mitigated colored water conditions.

c. **Remote Radio Read Meter Installations.** To encourage water conservation and eliminate the need for staff to enter backyard easements to read meters, the MWS has begun the process of replacing 600 existing meters with smart meters. These smart meters will use a cellular connection to transmit meter reads to operations staff and customers via a computer or smart phone app. Staff has installed 75 smart meters this year, with plans to continue installing 25 smart meters each month through March 2017. This project is partially funded with BOR grant funds which the MWS received in July 2014. When this project is completed in 2017, approximately 40% of the MWS will be equipped with smart meters.

d. **Interconnection at Felson and Carpintero.** The MWS installed a metered service connection to BSMWC's distribution system on Felson and Carpintero, to provide a secondary, backup water source for System 8.

12. Major Initiatives for 2015 – 2016

a. **Glandon Avenue Water Main Replacement and Interconnection.** To improve low water pressure problems on Glandon Avenue between Blaine and Prichard, the MWS will replace 700 feet of an existing 4 inch water main with a 6 inch main. This project will also include an interconnection to a nearby BSMWC hydrant to provide redundancy and reliability to Systems 2, 3, and 4 . Estimated cost - \$214,000

b. **Billing System.** Install a new billing system to replace the MWS's existing system which is no longer in production and does not offer adequate support. Estimated cost - \$9,500

c. **Meters.** Continue installing 25 smart meters monthly through September 2017.

d. **Service Connections.** The MWS will continue to replace service connections as needed.

e. **Water System Reconstruction - Planning.** Continue planning for phased reconstruction of the system, including replacement of water mains and fire hydrants.

f. **Grants and Loans.** The City will continue its aggressive pursuit of Federal and State grant and loan funds necessary to rebuilding the Water System.

13. Residential Ratepayer Assistance Programs. The City continues to provide ratepayer assistance programs to qualified residential customers. Customers seeking more information about these programs should contact the Municipal Water System office.

a. **Amortization Payment Plan.** Any residential customer who, on the certification of a licensed physician that the termination of water service will be life threatening to the customer, and upon the customer providing information to demonstrate that the customer is financially unable to pay for service within the normal payment period, and who is willing to enter into an amortization agreement with the City with respect to all charges that the customer is unable to pay prior to delinquency shall, upon request, be permitted to amortize, over a period not to exceed 12 months, the unpaid balance of any bill asserted to be beyond the means of the customer to pay within the normal period for payment.

b. **Low Income Assistance Program for Water Rate Increases.** At any time that the City implements an increase in the water rate(s) charged, qualified low income residential customers may be determined by the City to be exempt from payment of fifty percent (50%) of the increase for a period not to exceed two years. The latest rate increase took effect in 2009, and qualified low income residential customers were eligible to apply for the program only through 2011. The City has not implemented an increase to the water rate since, and the program currently remains inactive. The City Manager will establish additional rules and regulations necessary to administer this program in the future.

c. **Low Income Assistance Program for Service Line Repairs.** Subject to the availability of funds, qualified low income residential customers may receive a deferred loan under the City's Home Improvement Program for the purpose of repairing service lines (i.e., the line connecting the meter to the house, up to the customer's turn-off valve). The City Manager will establish additional rules and regulations necessary to administer this program.

d. **Shutoff Protection for Qualified Military Customers.** In accordance with Section 827 of the California Military and Veterans Code, a Qualified Military Customer may apply for and receive shutoff protection for a period of 180 days.