

CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT

AGENDA
REGULAR MEETING
BOARD OF WATER COMMISSIONERS
Tuesday, September 20, 2016 – 10:00 a.m.
COUNCIL CHAMBERS
300 N. “D” STREET
San Bernardino, California

BOARD OF WATER COMMISSIONERS

TONI CALLICOTT
 President

Commissioners
 LOUIS A. FERNANDEZ
 WAYNE HENDRIX, P.E.
 JUDITH VALLES
 DAVID E. MLYNARSKI



STACEY R. ALDSTADT
 General Manager
 ROBIN L. OHAMA
 Deputy General Manager
 MIGUEL GUERRERO, P.E.
 Director of Water Utility
 JOHN A. CLAUS
 Director of Water Reclamation
 TERRI WILLOUGHBY
 Director of Finance
 JENNIFER L. SHEPARDSON
 Director of Environmental &
 Regulatory Compliance

“Trusted, Quality Service since 1905”

Welcome to a meeting of the Board of Water Commissioners of the City of San Bernardino.

- The City of San Bernardino Municipal Water Department recognizes its obligation to provide equal access to those individuals with disabilities. Please contact the General Manager’s Office (909-384-5191) two working days prior to the meeting for any requests for reasonable accommodation, to include interpreters.
- All documents for public review are on file with the Water Department located on the 5th floor of City Hall, 300 North “D” Street, San Bernardino or may be accessed online at http://www.ci.san-bernardino.ca.us/water/newsalerts/agendas_n_minutes.asp
- Please turn off or mute your cell phone while the meeting is in session.
- Any member of the public desiring to speak to the Board of Water Commissioners concerning any matter not on the agenda, but which is within the subject matter jurisdiction of the Board of Water Commissioners, may address the body at the end of the meeting during the period reserved for public comments. Said total period for public comments shall not exceed forty-five (45) minutes, unless such time limit is extended by the Board of Water Commissioners. A three-minute limitation shall apply to each member of the public, unless such time limit is extended by the Board of Water Commissioners. No member of the public shall be permitted to “share” his/her three minutes with any other member of the public.
- The Board of Water Commissioners may refer any item raised by the public to staff for appropriate action or have the item placed on the next agenda of the Board of Water Commissioners. However, no other action shall be taken nor discussion held by the Board of Water Commissioners on any item which does not appear on the agenda unless the action is otherwise authorized in accordance with the provisions of subdivision (b) of Section 54954.2 of the Government Code.
- Public comments will not be received on any item on the agenda when a public hearing has been conducted and closed.

CALL TO ORDER: _____ a.m./p.m.

Attendee Name	Present	Absent	Late	Arrived
President Toni Callicott				
Commissioner Louis Fernández				
Commissioner Wayne Hendrix				
Commissioner Judith Valles				
Commissioner David E. Mlynarski				
General Manager Stacey Aldstadt				
Deputy General Manager Robin Ohama				
Director of WRP John Claus				
Director of WU Miguel Guerrero				
Director of Finance Terri Willoughby				
Director of ERC Jennifer Shepardson				

OTHERS:

1. CLOSED SESSION: _____ a.m./p.m.

Pursuant to Government Code Section(s):

- A. Conference with legal counsel – existing litigation – pursuant to paragraph (1) of subdivision (d) of Government Code Section 54956.9: *In Re City of San Bernardino, California*, United States Bankruptcy Court, Central District of California (Riverside), Case No. 6: 12-bk-28006-MJ. *City of San Bernardino v. San Bernardino Valley Municipal Water District, et al.*, San Bernardino County Superior Court Case No. CIVDS1605532. *City of San Bernardino v. East Valley Water District*, San Bernardino Superior Court Case No. CIVDS 1608620.
- B. Conference with legal counsel – anticipated litigation – significant exposure to litigation pursuant to paragraph (2) or (3) of subdivision (d) of Government Code Section 54956.9.
- C. Conference with legal counsel – anticipated litigation – initiation of litigation – pursuant to paragraph (4) of subdivision (d) of Government Code Section 54956.9.
- D. Public Employment pursuant to Government Code Section 54957.
- E. Consultation with legal counsel and security consultant on matters posing a threat to the security of essential public services, including water, drinking water, and wastewater treatment pursuant to Government Code Section 54957.
- F. Conference with labor negotiator – pursuant to Government Code Section 54957.6.

**END OF CLOSED SESSION
RECONVENE MEETING**

CALL TO ORDER: _____ a.m./p.m.

Attendee Name	Present	Absent	Late	Arrived
President Toni Callicott				
Commissioner Louis Fernández				
Commissioner Wayne Hendrix				
Commissioner Judith Valles				
Commissioner David E. Mlynarski				
General Manager Stacey Aldstadt				
Deputy General Manager Robin Ohama				
Director of WRP John Claus				
Director of WU Miguel Guerrero				
Director of Finance Terri Willoughby				
Director of ERC Jennifer Shepardson				

OTHERS:

- 2. ANNOUNCEMENTS BY MEMBERS OF THE BOARD OF WATER COMMISSIONERS:
- 3. CONSENT CALENDAR

MOTION: That the motions indicated by consent calendar items 3A through 3D be adopted, except for _____.

MOTION:_____ SECONDED:_____

A. WAIVE FULL READING OF RESOLUTIONS

MOTION: That full reading of the resolutions on the regular or supplemental agendas of the Board of Water Commissioners be waived.

B. PAYROLL

MOTION: Approve the payroll for the pay period September 5, 2016 through September 18, 2016.

C. CONTRACTS AND BILLS

MOTION: Approve the payment of contracts and bills to be presented at this meeting.

D. MINUTES

MOTION: Approve the minutes of the meetings of September 6, 2016 of the Board of Water Commissioners.

END OF CONSENT CALENDAR

- 4. ADDITIONS TO THE AGENDA: (if any) in accordance with Section 54954.2 (b) (2) of the Government Code (Brown Act), a two-thirds vote (or a unanimous vote if less than two-thirds are present) is required to add an item for action provided that there is a need to take immediate action and that the need for action came to the attention of the agency after the agenda was posted.

MOTION: Approve an additional item(s) to be added to the agenda in accordance with Government Code Section 54954.2(b) (2).

MOTION:_____ SECONDED:_____

5. PROPOSED WATER RATE ADJUSTMENTS EFFECTIVE OCTOBER 1, 2016: The Board of Water Commissioners approved the date of September 20, 2016, to conduct a public hearing for public comments relative to the proposed adjustments to Rule and Regulation No. 21, General Water Service/Water Rates, and consider adoption of the resolution to approved said adjustments. All customers and property owners of record within the Department's service area were mailed a Notice of Public Hearing as required by Proposition 218. In addition, four public outreach meetings were held throughout the City of San Bernardino to ensure that the Department provided information about the proposed increase in advance of the September 20, 2016 hearing.

A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO AMENDING GENERAL WATER SERVICE/WATER RATES, AS SET FORTH IN RULE AND REGULATION NO. 21 OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO.

President to open the meeting.

MOTION: That the public hearing be opened to receive and respond to any comments; close the public hearing, adopt the Resolution amending General Water Service/Water Rates, as set forth in Rule and Regulation No. 21 of the Board of Water Commissioners of the City of San Bernardino.

MOTION:_____ SECONDED:_____

6. REPORTS:

A. Report of the President:

B. Report of the Commissioners:

C. Report of the Directors:

D. Report of the General Manager:

7. PUBLIC COMMENTS ON ITEMS NOT ON THE AGENDA:

8. ADJOURNMENT: The meeting adjourned at _____ a.m./p.m.

NOTE: The next regular meeting of the Board of Water Commissioners is scheduled for *9:30 a.m., October 4, 2016* in the Margaret H. Chandler Water Reclamation Plant Conference Room, 399 Chandler Place, San Bernardino, California, 92408.

MINUTES
BOARD OF WATER COMMISSIONERS
OF THE CITY OF SAN BERNARDINO

REGULAR MEETING
September 6, 2016
Water Reclamation Plant Conference Room
399 Chandler Place
San Bernardino, California
9:30 a.m.

The Regular Meeting of the Board of Water Commissioners of the City of San Bernardino was called to order by President Callicott at 9:30 a.m. on September 6, 2016 in the Water Reclamation Conference Room, 399 Chandler Place, San Bernardino, California.

ROLL CALL: Roll call was taken by the Secretary with the following being present: President Callicott; Commissioners Valles, Fernández, Hendrix, and Mlynarski; staff Ohama, Claus, Guerrero, Shepardson, and Willoughby; Steven Graham, City Attorney's Office; Patrick Sanchez, Sr. Business Systems Analyst; Amy Smith, Executive Secretary.

Absent: General Manager Aldstadt

Members of the Public: James Morales, East Valley Water District
Tom Dodson, TDA

1. CLOSED SESSION: President Callicott adjourned the Regular Meeting of the Board of Water Commissioners to a Closed Session. At 9:49 a.m., the Regular Meeting of the Board of Water Commissioners was recessed and a Closed Session was called to order in accordance with the following Government Code Sections:

B. Conference with legal counsel – anticipated litigation – significant exposure to litigation pursuant to paragraph (2) or (3) of subdivision (d) of Government Code Section 54956.9.

Steven Graham, Deputy City Attorney, announced an addition to Item 1(B) of one (1) item.

After closed session Steven Graham, Deputy City Attorney, announced in relation to the one (1) item under 1(B) that no action was taken at this time.

ROLL CALL: Roll call was taken with the following present: President Callicott; Commissioners Valles, Fernández, Hendrix, and Mlynarski; staff Ohama, Claus, Guerrero, Shepardson, and Willoughby; Steven Graham, City Attorney's Office; Amy Smith, Executive Secretary.

Absent: General Manager Aldstadt

ADJOURN CLOSED SESSION: At 9:56 a.m., the Closed Session of the Board of Water Commissioners adjourned to the Regular Meeting of the Board of Water Commissioners in the Water Department Board Room.

ROLL CALL: Roll call was taken by the Secretary with the following being present: President Callicott; Commissioners Valles, Fernández, Hendrix, and Mlynarski; staff Ohama, Claus, Guerrero, Shepardson, and Willoughby; Steven Graham, City Attorney’s Office; Amy Smith, Executive Secretary.

Absent: General Manager Aldstadt

2. ANNOUNCEMENTS BY MEMBERS OF THE BOARD OF WATER

COMMISSIONERS: Commissioner Valles stated that staff did an outstanding job at the community outreach meeting at the Arrowhead Country Club.

3. CONSENT CALENDAR: Upon motion by Commissioner Valles, duly seconded by Commissioner Hendrix, it was unanimously voted to approve the following Consent Calendar, Agenda Items 3A through 3I:

A. WAIVE FULL READING OF RESOLUTIONS: Waive full reading of the resolutions on the regular or supplemental agendas of the Board of Water Commissioners.

B. PAYROLL

	<u>Water Fund</u>	<u>Sewer Fund</u>	<u>Total</u>
Claims: 272698-272948			
Accounts Payable	\$1,408,156.26	\$993,245.59	\$2,401,401.85
Gross Payroll 07/25/16 – 08/07/16	<u>533,934.71</u>	<u>378,203.52</u>	<u>912,138.23</u>
TOTALS	<u>\$1,942,090.97</u>	<u>\$1,371,449.11</u>	<u>\$3,313,540.08</u>

Payroll for the pay period August 22, 2016 through September 4, 2016.

C. CONTRACTS AND BILLS: Contracts and bills presented at this meeting.

D. MINUTES: August 16, 2016.

E. PERSONNEL ACTIONS:

1. APPOINTMENT: Kevin McCullough, Water Utility Worker I, Section 3024, Range 132, effective September 6, 2016. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.

2. APPOINTMENT: Brian Triana, Electrical Repairperson, Section 4042, Range 139, effective September 6, 2016. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.

3. APPOINTMENT: Brandon Overton, Water/Water Reclamation Worker, Section 3042, Range 124, effective September 6, 2016. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.

4. PROMOTION: Gus Saavedra, Water Utility Lead Worker, Range 148, to Water Utility Supervisor, Section 3042, Range 258, ratified effective August 22, 2016. This position was in the budget and based on the needs and staffing for this section, the position was justifiable under the budget.
5. REVISED JOB DESCRIPTION FOR PRINCIPAL ACCOUNTANT: The Board of Water Commissioners originally approved the job description for Principal Accountant on August 9, 2005, and a revision was approved on August 7, 2012. There were currently two positions within this classification and each one had different overall responsibilities. One position had been vacant since December 30, 2014 due to retirement.

The last two recruitments for Principal Accountant in 2015 were unsuccessful, resulting in eligibility lists with only one or two candidates. Staff recommended that the minimum experience qualifications be changed to remove cost accounting. This would result in two positions with comparable levels of education and experience to encourage cross-training, and should provide a larger pool of qualified candidates. Testing standards and range would remain the same.

It was recommended that the Board approved the revised job description for Principal Accountant (51715), Mid-Management unit, FLSA, Exempt, Range 262.

- F. RESOLUTION NO. 895: A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO RECOGNIZING DENNIS DESCOMBES FOR TWELVE YEARS OF DEDICATED SERVICE TO THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT.
- G. RESOLUTION NO. 896: A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO RECOGNIZING KENNETH MACON FOR TWENTY-SIX YEARS OF DEDICATED SERVICE TO THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT.
- H. RESOLUTION NO. 897: A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO RECOGNIZING RAUL SERRATO FOR THIRTY-TWO YEARS OF DEDICATED SERVICE TO THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT.
- I. RESOLUTION NO. 898: A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO RECOGNIZING DONALD YORK FOR THIRTY-SIX YEARS OF DEDICATED SERVICE TO THE CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT.

END OF CONSENT CALENDAR

4. ADDITIONS TO THE AGENDA: None.

5. ADOPTION OF CEQA STATUTORY AND CATEGORICAL EXEMPTION FOR RETROFIT OF RIX EXPANSION PROJECT TEST WELLS (SANTA ANA SUCKER HABITAT MAINTENANCE/RESTORATION PROJECT): In Consultation with the U.S. Fish and Wildlife Service, the Department implemented various RIX Facility enhancements, including improving existing test wells and converting them to production wells, in order to provide a supplemental water source to the Santa Ana River for protection of fish and their habitat, as needed, during RIX Facility shutdowns.

Tom Dodson & Associates (TDA) evaluated whether the Department's proposed Santa Ana Sucker Habitat Maintenance/Restoration Project (Project) qualified for any exemption category under the California Environmental Quality Act (CEQA) and TDA recommended that the Department found that the Project was exempt from CEQA through reliance on Statutory Exemption (Section 21080.21) and Categorical Exemptions 1, 2 and 33.

Staff requested that the notice of exemption be adopted and filing with the California State Clearinghouse and the San Bernardino County Clerk of the Board authorized.

Upon motion by Commissioner Hendrix, duly seconded by Commissioner Valles, it was unanimously voted to adopt a notice of exemption for the Santa Ana Sucker Habitat Maintenance/Restoration Project based upon the Statutory Exemption within Government Code Section 21080.21 and Categorical Exemption within Categories 1, 2, and 33. The General Manager was authorized to file the notice of exemption with the California State Clearinghouse and the San Bernardino County Clerk of the Board.

6. REQUEST TO AMEND THE SEWER FUND CAPITAL IMPROVEMENT BUDGET AND APPROVE CENTURY WELL REHABILITATION BY BEST DRILLING AND PUMP, INC.: Due to prolonged drought conditions, increased groundwater pumping within the Bunker Hill Groundwater Basin, and continuous use, the three deep agricultural-grade groundwater extraction wells used to provide utility water to the Department's Water Reclamation Plant (WRP) recently ceased to meet the WRP's demand and were in need of rehabilitation. This work was not anticipated during the development of the Fiscal Year (FY) 2016/2017 WRP Capital Improvement Program (CIP) and Sewer Fund Capital Improvement Budget; therefore, staff recommended amending the FY 2016-2017 WRP CIP and the Sewer Fund Capital Improvement Budget, respectively, to include this Project. The total project cost was estimated at \$551,000.00.

The Department contracted Best Drilling and Pump, Inc. (Best) to pull the Century Well equipment, assess the equipment and well, and provide recommendations for rehabilitation of the well. Staff requested rehabilitation proposals from prequalified contractors to rehabilitate the Century Well. Best was responsive and provided the lowest quotation in the amount of \$80,012.00. Staff recommended this rehabilitation work be awarded to Best; the remaining work (well equipping of the Century Well and the balance of work for the Chandler and Orange Show Wells would be recommended to the Board upon receipt of responsive quotations from the prequalified contractors).

Upon motion by Commissioner Valles, duly seconded by Commissioner Fernández, it was unanimously voted to approve the addition of the Sewer Fund Capital Improvement Project titled WRP Wells Rehabilitation; approve a Sewer Fund capital budget increase in the amount of \$551,000.00 to the Project; and approve the award of Remediation/Rehabilitation and Test Pumping of the Century Well to Best Drilling and Pump, Inc. in the amount of \$80,012.00.

7. CONTRACT NO. 1620 – CAROLLO ENGINEERS, INC. – CHANGE ORDER NO. 1 – ENGINEERING DESIGN SERVICES FOR THE PRIMARY INFLUENT FLOW EQUALIZATION PROJECT: In January 2015, the Board of Water Commissioners entered into Contract No. 1620 with Carollo Engineers, Inc. (Carollo) for Engineering Design Services for the Primary Influent Flow Equalization at the Water Reclamation Plant (WRP) Project. This project included the design of two (2) flow equalization basins to reduce operational costs and increase treatment effectiveness and capacity of the existing Water Reclamation Plant by reducing the diurnal flow fluctuation.

In July 2016, the Department requested that Carollo provide a proposal for additional engineering services to address items which came up during design. Such items included an electrical system study of WRP facilities, ferric chloride piping modifications, and secondary effluent pump station modifications. During the Project’s preliminary design phase, it was identified that electrical system studies for the existing electrical equipment were needed in order to quantify arc flash hazards associated with the various electrical equipment.

As part of the electrical system studies task, Carollo would analyze the existing electrical distribution system, model the system and perform preliminary fault current calculations, perform protective device coordination, and complete arc flash incident energy calculations for the purpose of producing arc flash hazard labels for installation on the existing electrical equipment to warn staff of the hazards and indicate requirements for personal protective equipment.

Carollo would also reroute the ferric chloride piping downstream of the Headworks’ Units 1, 2, and 3 splitter boxes. The actual conditions and location of existing items differed from those shown in the plans, so the piping layout had to be revised to eliminate tripping hazards and to provide proper repair to the polyvinyl lining inside each of the splitter boxes affected.

In addition, Carollo would update existing drawings as well as produce new drawings of the secondary effluent pump station modifications as necessary to address comments from the 90 percent design review (the use of the existing secondary effluent pump station was not a part of the original scope of work).

This project was approved as part of the Fiscal Year 2014/2015 Sewer Capital Improvement Budget. Change Order No. 1 in the amount of \$88,929.00 had been prepared for this extra work to be performed by Carollo under Contract No. 1620. The funding source for this Change Order was C.O. 00177 (Budget ID No. 13-213), which currently had an unencumbered balance of \$151,425.00.

Upon motion by Commissioner Mlynarski, duly seconded by Commissioner Hendrix, it was unanimously voted to approve Change Order No. 1 to Contract No. 1620 with Carollo Engineers, Inc., in the amount of \$88,929.00. The General Manager was authorized to execute the Change Order.

8. REPORTS:

A. Report of the President: None

B. Report of the Commissioners: None

C. Report of the Directors:

1. Deputy General Manager Ohama reported that the Water Rate Hearing will be held on September 20, 2016.
2. Director Willoughby reported there is the community presentation “Understanding Proposed Rate Changes” on our website.
3. Director Guerrero reported that there were a lot of good questions from the public at the water rate community outreach meetings.

D. Report of the General Manager: None

11. PUBLIC COMMENTS: This is the time specified for public comments concerning specific items not on the agenda or matters of general interest. James Morales, East Valley Water District, requested a paper copy of the community presentation “Understanding Proposed Rate Changes”. Director Willoughby gave him a copy at the meeting.
12. ADJOURN MEETING: The meeting adjourned at 9:57 a.m. to the next Regular Meeting to be held on Tuesday, September 20, 2016, at 10:00 a.m. in the City Hall Council Chambers, 300 N. “D” Street, San Bernardino, CA 92418.

BY: _____
TONI CALLICOTT
President

BY: _____
ROBIN L. OHAMA
Deputy City Clerk & Ex-Officio Secretary

**CITY OF SAN BERNARDINO
MUNICIPAL WATER DEPARTMENT**

**BOARD OF WATER COMMISSIONERS
STAFF REPORT**

SEP 14 2016

@ for STA

TO: Stacey R. Aldstadt, General Manager
FROM: Terri A. Willoughby, Director of Finance
SUBJECT: PROPOSED WATER RATE ADJUSTMENTS EFFECTIVE OCTOBER 1, 2016
DATE: September 14, 2016

BACKGROUND:

The Board of Water Commissioners approved the date of September 20, 2016, to conduct a public hearing for public comments relative to the proposed adjustments to Rule and Regulation No. 21, General Water Service/Water Rates, and consider adoption of resolution to approve said adjustments. All customers and property owners of record within the Department's service area were mailed a Notice of Public Hearing as required by Proposition 218. In addition, four public outreach meetings were held throughout the City of San Bernardino to ensure that the Department provided information about the proposed increase in advance of today's hearing.

In June 2013, the Department retained SAIC Energy, Environment & Infrastructure, LLC, now known as Leidos, a nationally recognized utility engineering and rate consulting firm, to, among other tasks, update revenue requirements for the water fund. In 2014, the Board approved an additional contract with FG Solutions, a firm organized by the former principal of Leidos to complete an update of the rate study. In 2015, staff directed FG Solutions to rework the rate structure so that the Minimum Monthly Charge more fully covers the Water Utility's fixed costs. This change in structure is necessary to stabilize the Utility's revenue stream, in light of decreasing usage from mandated conservation. Adjustments were also made to the conservation and replenishment charges based on expected increases in relative costs.

There are several components that make up the Water Rates:

- **Minimum Monthly Charge:** This charge is the fixed component and is the same for each customer class, depending on meter size. The bulk of the Department's residential customers have a 5/8" meter.
- **Commodity Charge:** Most customers pay a Commodity Charge of \$1.15 per hundred cubic feet ("hcf") of water use.
- **Replenishment Charge:** Water Department customers also pay a charge which is used to fund purchases of State Water Project water used for replenishment purposes.
- **Conservation Charge:** In 2010, the Department implemented a two-tier Commodity Charge rate, as noted above. While the Commodity Charge is applied to all water use, the

PROPOSED WATER RATE ADJUSTMENTS

September 14, 2016

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Conservation Charge is only applied to water use above a specified level, which varies by water meter size.

- **Elevation Charge:** The Department serves customers in various elevations and pressure zones. As a result, the costs to pump water vary throughout the Department's service area. The Department applies various Elevation Charges to these zones based on the actual costs to pump water to that particular geographic area.

The concept of the change in rate structure was presented to the Board of Water Commissioners earlier in the year and was discussed as part of the Board's strategic planning session. The attached Water Rate Study represents a gradual shift to a higher fixed component (Minimum Monthly Charge) while still maintaining appropriate incentives through assessment of the Conservation Charge which will assist the Department in meeting its conservation mandates. The revised structure would gradually increase revenue recovery from the fixed component from 32 percent (current level) to approximately 44% by Fiscal Year 2018-19.

DISCUSSION:

Attachment "A" contains a Water Rate Study conducted by FG Solutions, which summarizes projected water revenue requirements for six years (FY 2016-2021), documents fiscal policy issues that affect the revenue requirements, and provides detailed support calculations. The study balances the need to meet key financial targets with the need to minimize impacts to ratepayers.

FG Solutions reviewed historical operating expenses, existing assets, existing debt service, projected expenditures, potential financing strategies, required capital improvements, local economic factors and system revenues, both historic and projected. The revenue requirement analysis was an iterative process and draft versions were revised based on comments and input provided by staff. Next, the revenue requirement was compared with the revenues generated by the existing rates to calculate the amount of additional revenues needed from rate increases. In general, rate increases were minimized while meeting reserve and debt service coverage requirements. The table below shows the overall impact of the proposed rate adjustments on the average residential customer.

Average Monthly Bill		Proposed		
Hcf/month	Current	FY 16/17	FY 17/18	FY 18/19
16	\$35.59	\$39.11	\$43.07	\$47.36
Annual % Increase		10%	10%	10%

The results of the analysis include:

1. A recommendation to increase the Minimum Monthly Charge incrementally as shown in Table 11 of the attached report. For the majority (85%) of residential customers, the Minimum Monthly Charge would increase from the current rate of \$12.90 to \$16.09

PROPOSED WATER RATE ADJUSTMENTS

September 14, 2016

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effective October 1, 2016, \$19.58 effective July 1, 2017 and \$23.39 effective July 1, 2018. This meets the Department's debt service coverage and funds required capital projects while maintaining an appropriate level of cash.

2. A recommendation to increase the Replenishment Charge from the current \$.09 per hcf to \$.11 per hcf effective October 1, 2016; \$.14 per hcf effective July 1, 2017, and \$.17 per hcf effective July 1, 2018. These increases are necessary to accommodate projected increases in the cost of State Water Project water.
3. A recommendation to increase the Conservation Charge from \$.35 per hcf to \$.49 per hcf effective August 1, 2016. No subsequent increases are proposed.
4. There are no recommended increases to either the Commodity Charge (\$1.15 per hcf) or the Elevation Charges (various).
5. A discussion regarding the Department's water Capital Improvement Program (CIP). The Department provided its CIP and FG Solutions used the projected capital expenditures through FY 20/21 to complete this Study. The total projected capital expenditures through FY 20/21 are approximately \$75 million.
6. A discussion of the Department's reserve balances, and Debt Service Coverage Ratios. The rate study ensures that the Water Fund's Debt Service Coverage Ratio will meet or exceed its legal requirements under the existing bond covenants as well as meeting key financial targets.
7. A discussion of existing and proposed debt financing of the proposed CIP. The Department anticipates issuing debt to fund much of the proposed CIP. Debt issuances are sized and timed to both fund the CIP and minimize rate increases. Debt service payments would be paid through rate revenues and other non-rate revenues.

The information presented in the report supports the following staff recommendations:

Staff recommends:

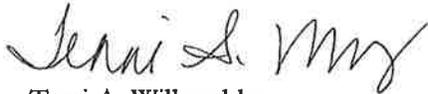
1. A three-step adjustment in the Minimum Monthly Charge as reflected in Attachment B, effective October 1, 2016, July 1, 2017 and July 1, 2018. For the majority of residential customers, the Minimum Monthly Charge will increase from the current \$12.90 to \$16.09 effective October 1, 2016, \$19.58 effective July 1, 2017 and \$23.39 effective July 1, 2018.
2. A three-step adjustment to the Replenishment Charge per HCF: \$.02 on July 1, 2016; \$.05 on July 1, 2017 and \$.03 on July 1, 2018.
3. A one-time adjustment to the Conservation Charge from \$.35 to \$.49 per HCF effective July 1, 2016.

RECOMMENDATION:

Staff recommends that the Board of Water Commissioners make the following motion:

- “Adopt Resolution amending Rule and Regulation No. 21, General Water Service/Water Rates, as set forth in Exhibit A.”

Respectfully submitted,



Terri A. Willoughby
Director of Finance

Attachments:
Water Rate Study, April 2016, FG Solutions
Proposed Resolution
Exhibit A: Rule and Regulation No. 21

RESOLUTION NO. _____

1 A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF
2 SAN BERNARDINO AMENDING GENERAL WATER SERVICE/WATER RATES, AS SET
3 FORTH IN RULE AND REGULATION NO. 21 OF THE BOARD OF WATER
4 COMMISSIONERS OF THE CITY OF SAN BERNARDINO.

5 WHEREAS, Article IX, Section 163 of the City Charter empowers
6 the Board of Water Commissioners to establish all water rates; and

7 WHEREAS, water rates are set forth in the Rules and Regulations
8 of the Board of Water Commissioners; and

9 WHEREAS, the current rates set forth in Rule and Regulation No.
10 21, General Water Service/Water Rates, are not sufficient to cover
11 the costs to maintain, repair, improve, and operate the water
12 system; and

13 WHEREAS, the proposed water rate adjustments have been
14 calculated, and this hearing has been noticed forty-five days; and

15 WHEREAS, a Public Hearing was held on September 20, 2016, to
16 receive comments from the public on proposed water rates, and less
17 than fifty percent of affected property owners protested.

18 NOW THEREFORE BE IT RESOLVED, by the Board of Water
19 Commissioners of the City of San Bernardino, as follows:

20 SECTION 1: That the proposed rates set forth in Rule and
21 Regulation No. 21 of the City of San Bernardino Municipal Water
22 Department, General Water Service/Water Rates, attached hereto and
23 marked "Exhibit A," incorporated herein as though fully set forth at
24 length, are hereby approved, effective October 1, 2016.

25 /
26 /
27 /
28 /

1 A RESOLUTION OF THE BOARD OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO AMENDING
2 GENERAL WATER SERVICE/WATER RATES, AS SET FORTH IN RULE AND REGULATION NO. 21 OF THE BOARD
3 OF WATER COMMISSIONERS OF THE CITY OF SAN BERNARDINO.

4 I HEREBY CERTIFY that the foregoing resolution was duly adopted
5 by the Board of Water Commissioners of the City of San Bernardino at
6 a regular adjourned meeting thereof held on the ____ day of
7 _____, 2016, by the following vote to wit:

8 AYES: COMMISSIONERS _____

9 NAYS: _____

10 ABSENT: _____

11 _____
12 ROBIN L. OHAMA
13 Deputy City Clerk & Ex-Officio Secretary

14 (SEAL)

Exhibit "A"
CITY OF SAN BERNARDINO MUNICIPAL WATER DEPARTMENT
300 North "D" Street
San Bernardino, CA 92401

RULE AND REGULATION NO. 21
GENERAL WATER SERVICE/WATER RATES

The following rates shall be charged for all water furnished for domestic, commercial, industrial, and municipal water use within the City of San Bernardino and unincorporated San Bernardino County areas within the Water Department's service area, and for any other purpose for which no rate is specified.

- A. MINIMUM MONTHLY CHARGE All users will be assessed a minimum monthly charge to recover fixed costs, such as meter replacement, customer service, mailing costs, bill payment and debt service. The rates will be as follows:

Meter Size	October 1, 2016	July 1, 2017	July 1, 2018
½ inch or ⅝ inch	\$ 16.09	\$ 19.58	\$ 23.39
¾ inch	\$ 20.15	\$ 24.51	\$ 29.28
1 inch	\$ 28.19	\$ 34.30	\$ 40.98
1½ inch	\$ 48.40	\$ 58.88	\$ 70.35
2 inch	\$ 72.60	\$ 88.32	\$ 105.52
3 inch	\$ 129.12	\$ 157.06	\$ 187.66
4 inch	\$ 197.36	\$ 240.07	\$ 286.63
6 inch	\$ 411.68	\$ 500.78	\$ 598.33
8 inch	\$ 653.88	\$ 795.40	\$ 950.34
10 inch	\$ 936.44	\$1,139.12	\$1,361.01

- B. COMMODITY CHARGE: This charge recovers water production and treatment costs, as well as associated variable costs of the Department. This rate is charged per hundred cubic feet (hcf) of water sold.

Commodity Charge per hcf	October 1, 2016	July 1, 2017	July 1, 2018
	\$1.15	\$1.15	\$1.15

- C. REPLENISHMENT CHARGE: This charge recovers the cost of water purchased to replenish the local basin and may be adjusted up or down, depending upon the amount of replenishment required. This rate is charged per hundred cubic feet (hcf) of water sold.

Replenishment Charge per hcf	October 1, 2016	July 1, 2017	July 1, 2018
	\$0.11	\$0.14	\$ 0.17

- D. ELEVATION CHARGE: This charge recovers electrical costs to transport water through the system and is specific to each zone. The electricity cost incurred at plant facilities within each elevation level is distributed across water usage within that zone. This rate is charged per hundred cubic feet (hcf) of water sold.

Elevation zone	October 1, 2016	July 1, 2017	July 1, 2018
Zone 1	\$0.11	\$0.11	\$0.11
Zone 2	\$0.19	\$0.19	\$0.19
Zone 3	\$0.17	\$0.17	\$0.17
Zone 4	\$0.14	\$0.14	\$0.14
Zone 5	\$0.23	\$0.23	\$0.23
Zone 6	\$0.23	\$0.23	\$0.23

Note: the Energy Surcharge previously collected is now included in this Elevation Charge.

E. **CONSERVATION CHARGE AND TIERS:** To encourage conservation, customer accounts placing a greater demand on the water system will be assessed a higher cost. Initially, customers using in excess of their class average by service size listed below will pay a higher rate for water usage that falls in the second tier. To encourage greater conservation over a longer period of time, each tier and charge will adjust annually. This rate is charged per hundred cubic feet (hcf) only on that usage above the level defined in the tier table below. Revenues recovered from these charge will fund conservation programs sponsored by the Department.

Conservation Charge per hcf	October 1, 2016	July 1, 2017	July 1, 2018
	\$0.49	\$0.49	\$0.49

All usage in hundred cubic feet (hcf) in excess of that listed below, by class, is billed the conservation charge. *As an example:* As of July 1, 2012, residential use equal to or below 32 hcf in a monthly billing period will not be assessed an additional conservation charge. However, each hcf billed above 32 will be assessed an additional 35¢ per hcf. The table below indicates the hcf cutoff for each customer class by meter size.

Conservation Tiers	January 1, 2012
Residential	32
MDU (2)	42
MDU (2+) per unit	17
Non-residential 5/8"	24
Non-residential 3/4"	36
Non-residential 1"	65
Non-residential 1 1/2"	150
Non-residential 2"	250
Non-residential 3"	740
Commercial 5/8"	42
Commercial 3/4"	55
Commercial 1"	130
Commercial 1 1/2"	275
Commercial 2"	445
Commercial 3"	875
Commercial 4"	2,400

Commercial 6"

9,000

F. ASSESSMENT DISTRICT CHARGE: Water furnished to the City for landscape assessment districts or funded from other than the City's General fund will be charged the following rate per hundred cubic feet (hcf) of water sold.

Assessment District Charge per hcf	October 1, 2016	July 1, 2017	July 1, 2018
	\$0.45	\$0.45	\$0.45

G. UNMETERED CHARGE: A "jumper" may be substituted for a water meter during single or multi-family housing construction at a charge of \$50 per month for a maximum of 120 calendar days or until the lot landscaping begins. Thereafter, a water meter shall be installed subject to all fees and charges as listed above prior to the issuance of a certificate of occupancy. Water used for tract grading and jetting of trenches is not covered in the above charge and is subject to the fees and charges listed in Rule and Regulation No. 16.

H. SURCHARGE – OUTSIDE CITY LIMITS: Any service installed outside the incorporated territory of the City after February 1, 1991 may be billed the meter charge and all required consumption related charges as set forth in this rule and regulation, multiplied by 1.5.

I. WATER SUPPLY SHORTAGE RATES: To comply with State of California mandates, the City of San Bernardino Municipal Water Department shall implement the following procedure in response to drought or water supply shortage declarations or similar service interruptions in the delivery of water to its customers.

During any drought or water supply shortage condition, the Department's General Manager may declare any one of four shortage level responses with ratification by the Board of Water Commissioners (Board) within three calendar days. A declaration of a water supply shortage may result from:

- Interruption of service through major plant failure;
- Interruption of replenishment water from various resources;
- Rainfall level at twenty-five percent (25%) or more below normal levels for at least six months;
- A natural disaster or other emergency event;
- Emergency regulations by the State Water Resources Control Board (SWRCB), the Department of Water Resources (DWR), and/or Executive Order(s) from the Governor's office.

Stage I (Voluntary Restrictions) incurs no financial penalties but requires an ongoing commitment to a water conservation program. During Stage I, the Department shall:

- Offer educational resources and landscaping classes;
- Offer rebate programs for water smart appliances and other water saving devices;
- Encourage voluntary conservation through continued media announcements;

- Request the City Manager to direct city parks, facilities and golf courses to restrict landscape watering to off-peak hours to reduce demand on the water system and eliminate the 60% evaporation rate during daytime watering.
- Provide reminder notices regarding noted water waste; and
- Offer community outreach programs.

Due to the continuous conservation efforts required to preserve San Bernardino's water supply in the region's arid climate, Stage I will be maintained at all times.

Stage II (Mandatory Restrictions) will impose a five percent (5%) reduction in water usage and assess financial penalties on usage in excess of those amounts.

A base allowance for each customer will be established based upon their 2013 calendar year's water usage. A ten percent (10%) surcharge will be applied to each billing unit that exceeds the (5%) required reduction in base allowance. Where the customer does not have consumption history from 2013, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage II five percent (5%) usage reduction, the customer is permitted 19 billing units during the August 2014 billing period.

$$20 \text{ hcf} \times 5\% = 1 \text{ hcf}$$
$$20 \text{ hcf} - 1 \text{ hcf} = 19 \text{ hcf August 2014 Baseline}$$

If that customer utilizes 19 or less billing units, no financial penalty is assessed. However, should that customer utilize 25 billing units, a ten percent (10%) surcharge will be assessed for each billing unit in excess of 19:

$$25 \text{ hcf} - 19 \text{ hcf} = 6 \text{ hcf} \times 10\% \times \$1.15 \text{ (Commodity Rate)} = \$6.90 \text{ Surcharge}$$

Additionally, during Stage II, the Department mandates the following:

- Irrigation shall only be allowed between the off-peak hours of 6:00 pm through 8:00 am;
- Irrigation shall be limited to four days per week on Mondays, Wednesdays, Fridays and Sundays only;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- The washing of cars, trucks, or other vehicles is not permitted except with an automatic shut-off device, or at a commercial car washing facility designated for vehicle washing;
- No use of fountains that use potable water, unless the water is recirculated;
- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;
- Request the City Manager to direct Parks and Recreation, City Facilities and all golf courses to limit outdoor watering for irrigation to four days per week, and also only between the hours of 6:00 pm through 8:00 am.

- All leaks shall be corrected within seventy two (72) hours of Department notification.

The Board of Water Commissioners reserves the right to declare additional Stage II mandatory restrictions and prohibitions in the future if required by the State of California.

Stage IIA (Extreme Mandatory Restrictions) will impose a reduction in water usage consistent with state conservation mandates or a fifteen percent (15%) reduction in water use, whichever is greater, and assess financial penalties on usage in excess of those amounts.

A base allowance for each customer will be established based upon state conservation mandates. If not defined by conservation mandate, a base allowance for each customer will be established based upon their 2013 calendar year's water usage. A twenty percent (20%) surcharge will be applied to each billing unit that exceeds the required reduction in base allowance. Where the customer does not have consumption history, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage IIA fifteen percent (15%) usage reduction, the customer is permitted 17 billing units during the August billing period.

$$\begin{aligned} 20 \text{ hcf} \times 15\% &= 3 \text{ hcf} \\ 20 \text{ hcf} - 3 \text{ hcf} &= 17 \text{ hcf} \text{ August Baseline} \end{aligned}$$

If that customer utilizes 17 or less billing units, no financial penalty is assessed. However, should that customer utilize 25 billing units, a twenty percent (20%) surcharge will be assessed for each billing unit in excess of 17 hcf. Assuming the commodity rate is \$1.15 per hcf:

$$25 \text{ hcf} - 17 \text{ hcf} = 8 \text{ hcf} \times 20\% \times \text{commodity rate}$$

$$\text{Surcharge} = 8 \text{ hcf} \times 0.2 \times \$1.15 = \$1.84$$

Additionally, during Stage IIA, the Department mandates the following:

- Irrigation shall only be allowed between the off-peak hours of 6:00 pm through 8:00 am;
- Irrigation shall be limited to three days per week; Mondays, Wednesdays and Fridays only;
- Maximum irrigation time of 15 minutes per station per designated irrigation day;
- Irrigation will be prohibited for a full 48 hours after a significant precipitation event (rainfall in excess of 1/8" as measured at the Department's Mill and D rain gauge) has occurred over the City of San Bernardino. Department will maintain website notification when this restriction will be in place;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- The washing of cars, trucks, or other vehicles is not permitted except with an automatic shut-off device, or at a commercial car washing facility designated for vehicle washing;

- No use of fountains that use potable water, unless the water is recirculated;
- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;
- Request the City Manager to direct Parks and Recreation, City Facilities and all golf courses to limit outdoor watering for irrigation to two days per week or reduce consumption by the current Stage IIA reduction percentage, and also only between the hours of 8:00 pm through 6:00 am.
- Irrigation of ornamental turf on public street medians is prohibited.
- Use of potable water outside of new residential home and commercial/industrial construction that is not delivered by drip or micro-spray systems is prohibited.
- The serving of drinking water other than upon request is prohibited, in eating or drinking establishments including but not limited to restaurants, hotels, cafes, cafeterias, bars or any other public place where food or drink are served.
- All hotels/motels shall provide their guests with the option of choosing not to have towels and linens laundered daily. The hotel/motel must prominently display notice of this option in each bathroom using clear and easy language.
- All leaks shall be corrected within seventy two (72) hours of Department notification.

The Board of Water Commissioners reserves the right to declare additional mandatory restrictions and prohibitions in the future if required by the State of California.

Stage III (Water Shortage Emergency) will impose a fifty percent (50%) reduction in water usage and assess financial penalties on usage in excess of those amounts. A Stage III water supply shortage condition shall be declared if a catastrophic interruption of water supply or distribution facility occurs as the result of drought, earthquake, wildfire, extended power outage or any other disaster in which the Department may be prevented from meeting the water demands of its customers. Prior to the Board of Water Commissioners taking action on the Stage III declaration, notice will be given to the Mayor and the City Manager of the mandatory restrictions that will be placed into effect.

A base allowance for each customer will be established based upon their 2013 calendar year water usage. A one hundred percent (100%) surcharge will be applied to each billing unit that exceeds the fifty percent (50%) required reduction in base allowance. Where the customer does not have consumption history from 2013, then the Department shall use the customer's rate/class consumption average, by meter size, as the benchmark.

As an example: A customer used 20 billing units in August 2013. During a Stage III fifty percent (50%) usage reduction, the customer is permitted 10 billing units during the August 2015 billing period.

$$\begin{aligned} 20 \text{ hcf} \times 50\% &= 10 \text{ hcf} \\ 20 \text{ hcf} - 10 \text{ hcf} &= 10 \text{ hcf August 2015 Baseline} \end{aligned}$$

If that customer utilizes 10 or less billing units, no financial penalty will be assessed. However, should that customer utilize 25 billing units, a one hundred percent (100%)

surcharge will be assessed for each billing unit in excess of 10: Assuming the commodity rate is \$1.15 per hcf:

$$25 \text{ hcf} - 10 \text{ hcf} = 15 \text{ hcf} \times 100\% \times \$1.15 \text{ (commodity rate.)} = \$17.25 \text{ Surcharge}$$

Additionally, during Stage III, the Department shall:

- Irrigation shall be allowed only between the off-peak hours of 8:00 pm through 6:00 am; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency.
- Irrigation shall be limited to two days per week, on Mondays and Thursdays; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency;
- No watering of outdoor landscapes that cause excessive runoff;
- No washing down driveways, sidewalks, or other hardscapes;
- No washing of vehicles except at commercial vehicle washing facilities;
- No use of fountains that use potable water, unless the water is recirculated;
- Increase advertisement of conservation measures;
- Maintain a message center for reporting water waste;
- Determine course of action to remediate reported water waste;
- Request the City Manager to direct parks, facilities and golf courses to limit outdoor watering for irrigation to two days per week, and also only between the off-peak hours of 8:00 pm through 6:00 am; however, the Department reserves the right to prohibit all outdoor irrigation at any time depending on the severity of the emergency;
- The serving of drinking water other than upon request is prohibited, in eating or drinking establishments including but not limited to restaurants, hotels, cafes, cafeterias, bars or any other public place where food or drink are served.
- All hotels/motels shall provide their guests with the option of choosing not to have towels and linens laundered daily. The hotel/motel must prominently display notice of this option in each bathroom using clear and easy language.
- All leaks shall be corrected within seventy-two (72) hours of Department notice;
- Deny all new construction meter requests;
- Remove or lock out all existing construction meters in service.

Notices of Violation:

- Step 1: 1st Violation warning letter to the customer/owner describing the water waste issue and notice of potential fines for continuing water waste, providing a Department customer service contact for conservation information and assistance. Provides customer/owner seven calendar days to remedy the water waste situation and comply with conservation restrictions.
- Step 2: 2nd Violation, customer/owner site visit or phone call to discuss nature of the water waste and potential solutions. A second Notice of Violation letter allowing

seven calendar days to remedy the water waste situation and comply with conservation restrictions.

- **Step 3: 3rd Violation:** Third Notice of Violation letter informing customer/owner of financial penalty and allowing seven calendar days to remedy water waste situation and comply with conservation restrictions. One hundred dollars (\$100.00) penalty assessed.
- **Step 4: Subsequent Violation(s):** Additional penalties increasing incrementally by one hundred dollars (\$100.00) per occurrence, up to a limit of five hundred dollars (\$500.00) per incident. Customer/owner shall receive a separate notice per each subsequent violation and will have seven (7) calendar days after each notification to remedy the water waste situation and comply with conservation restrictions;
- **Step 5:** The Department may restrict the amount of water supplied to any customer/owner failing to comply with conservation standards. The provisions of this section shall be applied in addition to any other penalties provided in this rule and shall be applied at the discretion of the Department.

Exceptions: The restrictions of water consumption outlined herein are not applicable to water usage necessary for public health and safety or for essential governmental services, such as police, fire, and emergency services. The Department reserves the right to waive any water restriction penalty when, in its discretion, such consumption is required in order to maintain an adequate level of public health and safety.

Payment of Surcharges and Penalties:

All surcharges and penalties imposed under this rule and regulation shall be added to customer's water bills or as a lien on the owner's property and become payable at the same time and in the same manner as such bills or by such other method of collection and payment as established by the Department.

Right to Hearing:

Any customer/owner shall have a right to a hearing with the General Manager of the Department, or his/her designee, on a notice of violation, the assessment of a surcharge or penalty, or the denial and/or lock out of a construction meter, upon written request to the Department. Customer/owner's written request for a hearing must be received by the Department within ten (10) calendar days from the date of notice of violation, or customer/owner's right to a hearing shall be deemed waived.

Customer/owner shall be deemed notified of a violation, surcharge, penalty, or denial and/or lockout of a construction meter upon (1) the personal delivery of the notice to customer or (2) the date of lock out and/or denial of construction meter. If personal delivery is not given, the date on which the notice is placed in the regular mail shall be deemed the date of notification.

Customer/owner's timely written request for a hearing shall automatically stay the imposition of a penalty until the General Manager or his/her designee renders a decision; except that denial of a construction meter request or lock out of an existing construction meter shall remain in effect until the General Manager or his/her designee renders a decision.

The decision of the General Manager or his/her designee may be appealed to the Board of Water Commissioners, provided that the customer files a written notice of appeal with the Department within five calendar days of notification of the decision.

The decision of the General Manager, his/her designee, or the Board (if an appeal is timely filed) shall be final and conclusive and shall not be subject to appeal to the Mayor and Common Council. Once the decision becomes final as provided in this rule and regulation, the time in which judicial review of the decision must be sought shall be governed by California Code of Civil Procedure Section 1094.6, or other applicable State law.

Other Water Conservation Measures:

The Board may order implementation of other water conservation measures in addition to those set forth in this rule and regulation. Such additional water shortage measures shall be implemented in the manner provided in this rule.

Conclusion of a Water Supply Shortage Condition:

The General Manager shall notify the Board when the water supply shortage condition stage level should be reduced. The Board may ratify the General Manager's reduction of stage level. All bills issued after the Board's ratification date shall not include water supply shortage surcharges.

Use of Surcharge Funds:

Any surcharges and fines will be segregated into a restricted cash account managed by the Department to supplement the conservation efforts of the Department.

Approved by BOWC: September 20, 2016
Effective: October 1, 2016
Supersedes: July 19, 2016

Water Rate Study

City of San Bernardino Municipal Water Department



April 2016



Water Rate Study

City of San Bernardino Municipal Water Department



April 2016



This report has been prepared for the use of the client for the specific purposes identified in the report. The conclusions, observations and recommendations contained herein attributed to FG Solutions, LLC constitute the opinions of FG Solutions, LLC. To the extent that statements, information and opinions provided by the client or others have been used in the preparation of this report, FG Solutions, LLC has relied upon the same to be accurate, and for which no assurances are intended and no representations or warranties are made. FG Solutions, LLC makes no certification and gives no assurances except as explicitly set forth in this report.

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Water Rate Study

City of San Bernardino Municipal Water Department

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WATER RATE STUDY

Background

The City of San Bernardino Municipal Water Department (“Department”) provides services to approximately 46,000 connections throughout the City of San Bernardino. The Department is a semi-autonomous agency governed by a five-member Board of Water Commissioners (“BOWC”).

As part of its ongoing management of the water system, the Department has recognized the need to evaluate expenditures, revenues, and water rates to ensure that the Department can continue to provide safe and reliable water service.

Since the most recent water rate study was completed in approximately 2010, there have been ongoing changes in the Department’s water system, and the Department seeks to update its water rate schedule. In 2013, the Department hired Leidos Engineering, LLC (“Leidos”) to complete this update. In 2014, the Leidos project manager founded FG Solutions, LLC (“FG Solutions”), and subsequently, the Department hired FG Solutions to complete the project.

The results of this Study are summarized in this report, the purposes of which are:

- To summarize the projected water revenue requirements for the six-year study period for fiscal years (“FY”) 2015/16 through 2020/21¹.
- To show a proposed schedule of water rates effective for FY 2016/17 through FY 2018/19 for BOWC consideration.
- To outline potentially changing conditions with financial implications and recommendations for ongoing monitoring of these items.

Methodology and Key Assumptions

To provide for the continued operation of a utility on a sound financial basis, revenues must be sufficient to meet the cash requirements for operation and maintenance (O&M) expense, debt service requirements, debt service coverage requirements, reserves, and cash funded capital expenditures not financed with debt. The sum of these cost components for a given year is referred to as a utility’s revenue requirement.

Historical and budgeted financial and operational data were provided by the Department and used by FG Solutions to develop the projected revenue requirement for the six-year study period. The revenue requirement analysis was an iterative process and draft versions were revised based on comments and input provided by

¹ The Department’s fiscal year begins on July 1. Although FY 15/16 is nearly over as of the date of this report, the results of this Rate Study depend on data from FY 15/16.

Department staff. Next, the revenue requirement was compared with the revenues generated by the existing rates to generate additional revenues needed from rate increases. The reserve requirements, described below, are met in the later years of the six-year projection period as the proposed rates were developed to generate these reserve levels over time.

Key assumptions used in this Study are listed below. Additional assumptions are provided in the printout of the rate calculations that comprise Appendix A.

Expenses

- Projected O&M expenditures are primarily based on the Department's FY 15/16 budget, and some specific adjustments to the Department's budget were made based on other known or anticipated conditions. Additional detail for O&M expense projections is included in later sections of this report.
- Inflation projected at 2.1 percent per year, unless otherwise noted.
- Projected capital expenditures through FY 20/21 were obtained from the Department's Water Capital Improvement Program ("CIP") provided in February 2016.
- Debt issuances are sized and timed to fund the projected capital expenditures and balance the magnitude of projected rate increases, reserve accounts, and Debt Service Coverage Ratio ("DSCR") values. Additional detail is found below.

Revenue Assumptions

- Projected water rate revenues for FY 15/16 are based on an analysis of past and present water consumption and revenues. An account-by-account analyses of water consumption patterns was completed to project water revenues.
- Systemwide customer growth of 1% per year.
- No change in per-connection water consumption compared with FY 15/16.
- Non-rate revenues are based on the Department's FY 15/16 budget with adjustments made where appropriate based on review of year to date FY 15/16 revenues.
- The following two types of revenues are projected to increase with inflation: (a) revenue from the Sewer Fund as reimbursement for certain administrative services initially funded by the Water Fund, and (b) reimbursement for certain Department non-capital expenses associated with the Consent Decree.

Policy Assumptions

The proposed water rates are influenced by the financial policy targets shown in Table 1. The Reserve Policy has been adopted by the BOWC. The other policies in Table 1 have not been formally adopted by the Department, but were used in the development of the adopted rate structure.

Table 1
Financial Policies

Policy Issue	Importance of Financial Policy	Financial Policy Target
Debt Service Coverage Ratio (DSCR)	A minimum DSCR is a requirement of lenders. Exceeding the minimum DSCR provides additional flexibility for the Department to accommodate changing conditions such as unanticipated expenses and may help the Department obtain more favorable future debt terms.	A 1.75 minimum for ratemaking purposes is used to ensure sufficient revenue is collected to cover debt service expenditures. This ratio is expected to exceed the requirements in existing and/or future debt covenants. Department staff report that existing debt covenants specify a 1.1 minimum.
Amount of Future Debt Issued	A pay-as-you-go capital funding strategy (without issuing debt) requires higher up-front rate increases but decreases future costs.	Debt is issued to fund certain capital improvements, as described below.
Reserve Balance	Reserves provide more flexibility for the Department to react to changing conditions with financial implications (such as changes in capital costs, development activity, or the economy).	Described in further detail below.

Revenue Projections

Revenue projections are a critical part of the revenue requirement analysis. The three aspects of revenue projections described in the sections below are non-rate revenues, rate revenues under the current rate schedule (effective since January 1, 2012), and rate revenues from proposed rate increases.

Non-Rate Revenues

The key sources of water revenues other than water rates are the following:

- **Interest Income.** The Department invests its capital and operating reserves and earns interest income on these reserves. For the remainder of the Study period, annual interest income is estimated to be 2.0 percent of Water Fund reserves.
- **Other Operating Revenues.** The Department is projected to receive approximately \$2.0 million per year in other operating revenues. These revenues include:
 - **Service Charges.** Examples of Service Charges include connection charges, customer application fees, and disconnection fees.
 - **Administrative Services - Sewer.** This is a reimbursement from the Sewer Fund for certain administrative services provided for the sewer utility but originally paid for by the Water Fund.
 - **Other Sources.** Additional revenue sources are broken lock charges, returned check charges, backflow protection administration fees, plan check fees,

hydroelectric generation revenues, and income from other services provided by the Department.

- **Capital Grants.** The Department aggressively pursues grant funding for capital projects. Grant funding is competitive and is difficult to obtain. No further grant funding is incorporated into this Study to avoid developing water rates based on funding that is not guaranteed. Any future grant funding the Department receives will help reduce the rate impacts of capital projects.
- **Consent Decree.** A Consent Decree was awarded through judgment by the United States District Court to settle the City's and the State's claims arising from the groundwater contamination allegedly caused by the U.S. Army. The Consent Decree contains a number of provisions obligating the City to operate and maintain the Newmark Groundwater Superfund site. The City (through the Department) is reimbursed for certain O&M and capital costs.
- **Non-Operating Income.** The Department receives additional revenues from the following: interest income, as described above; rental income, primarily from communication services providers; acquisition fees; and service installation fees.

In most cases, non-rate revenues are projected to be equal to the FY 15/16 budget and remain at that level through the six-year rate study period. Some revenues, such as the administrative services from sewer, are projected to increase with inflation. Some revenues were adjusted for FY 15/16 only based on a review of actual year-to-date performance, with the Department's expectation that subsequent years will more closely resemble the FY 15/16 budget.

Additional detail of projected non-rate revenues is included in Appendix A.

Rate Revenues under Current Rates

Rates that became effective on January 1, 2012 are shown in Table 2. These rates are used to project the revenues found in the Department's FY 15/16 budget. In this Study, projected water rate revenues for FY 15/16 are based on an analysis of past and present water consumption and revenues. An account-by-account analyses of water consumption patterns was completed to project water revenues.

There are several components to the Department's water rates:

- **Minimum Monthly Charge.** This charge is the same for each customer class, and varies depending on meter size. For a 1/2-inch meter, the Minimum Monthly Charge is \$12.90.
- **Commodity Charge.** Most customers pay a Commodity Charge of \$1.15 per hundred cubic feet ("hcf") of water use. Some customers who have prior agreements with the Department pay a reduced amount.
- **Replenishment Charge.** In addition to the Commodity Charge, customers pay a \$0.09 per hcf Replenishment Charge, which is used to fund additional purchases of State Water Project ("SWP") water for aquifer replenishment purposes.

- **Conservation Charge.** In 2010, the Department implemented a two-tier commodity charge rate. As described above, the Commodity Charge is applied to all water use. Above a certain amount of usage (as shown in Table 2, and which varies by water meter size), an additional \$0.35 per hcf Conservation Charge is applied.
- **Elevation Charge.** The Department serves customers at a variety of elevations and in numerous pressure zones. As a result, the costs to pump water varies throughout the Department's service area. The Department applies an Elevation Charge to all water use that depends on geographic location. The Elevation Charge ranges from \$0.11 to \$0.23 per hcf.

The Minimum Monthly Charge is an example of a fixed charge, that does not depend on water use. The Commodity Charge, Replenishment Charge, Conservation Charge, and Elevation Charge are examples of variable charges that depend on water use. In FY 15/16, approximately 31 percent of the Department's water sales revenues is expected to come from fixed charges.

Table 2
Current Water Rate Schedule

Line	Customer Type	Unit	Existing Rate (1)
1	Single Family Residences, Multiple Family Connections, Commercial, Landscape, and Industrial Service Minimum Monthly Charge		
3	1/2 " & 5/8" meter	per Month	\$12.90
4	3/4" meter	per Month	\$16.15
5	1" meter	per Month	\$22.60
6	1 1/2" meter	per Month	\$38.80
7	2" meter	per Month	\$58.20
8	3" meter	per Month	\$103.50
9	4" meter	per Month	\$158.20
10	6" meter	per Month	\$330.00
11	8" meter	per Month	\$524.15
12	10" meter	per Month	\$750.65
13			
14	Commodity Charge	per HCF	\$1.15
15			
16	Replenishment Charge	per HCF	\$0.09
17			
18	Assessment Districts	per HCF	\$0.45
19			
20	Conservation Charge and Tiers		
21	Conservation Charge	per HCF	\$0.350
22	Conservation Tiers (cutoff) (2)		
23	Residential	HCF per Month	32
24	MDU (2 per unit)	HCF per Month	42
25	MDU (2+) per unit	HCF per Month	17
26	Non-Residential		
27	1/2 " & 5/8" meter	HCF per Month	24
28	3/4" meter	HCF per Month	36
29	1" meter	HCF per Month	65
30	1 1/2" meter	HCF per Month	150
31	2" meter	HCF per Month	250
32	3" meter	HCF per Month	740
33	Commercial		
34	1/2 " & 5/8" meter	HCF per Month	42
35	3/4" meter	HCF per Month	55
36	1" meter	HCF per Month	130
37	1 1/2" meter	HCF per Month	275
38	2" meter	HCF per Month	445
39	3" meter	HCF per Month	875
40	4" meter	HCF per Month	2,400
41	6" meter	HCF per Month	9,000
42			
43	Elevation Charge (all water users)		
44	Zone 1	per HCF	\$0.11
45	Zone 2	per HCF	\$0.19
46	Zone 3	per HCF	\$0.17
47	Zone 4	per HCF	\$0.14
48	Zone 5	per HCF	\$0.23
49	Zone 6	per HCF	\$0.23
50			
51	Additional Charges		
52	Surcharge - Area Outside City (no Zone)	% of \$/hcf	50%
53	Unmetered Construction Rate	per Month	\$50.00

Notes:

(1) Source: City of San Bernardino Municipal Water Department Rule and Regulation No. 21

General Water Service/Water Rates. Rates effective January 1, 2012. HCF means hundred cubic feet.

(2) The Conservation Charge is applicable to water use exceeding the cutoff value.

Table 3 summarizes water rate revenues under the current rate schedule. Shown in this table are FY 13/14 actual revenues, the FY 14/15 budget, and projected for FY 15/16. The majority of rate revenues are labeled as “Water Sales – Regular” which consists of the Minimum Monthly Charge and the Commodity Charge. The revenues from the Replenishment Charge, Conservation Charge, and Elevation Charge are also shown in Table 3. The Department receives smaller amounts of revenue from fire service charges, sales to other municipalities, and from sales through the Encanto Booster Station.

Table 3
Rate Revenues under Current Rates

Type of Rate Revenue	Historical FY 2013/14	Budget FY 2014/15	Projected FY 2015/16
Water Sales - Regular	\$27,562,842	\$27,600,000	\$22,325,518
Replenishment Fee	1,701,462	1,700,000	1,155,468
Water Conservation Charge	1,192,046	1,200,000	1,140,000
Elevation Charge	2,820,407	2,800,000	2,036,160
Water Sales - Fire Service	461,679	460,000	464,600
Water Sales - Municipal	914,016	900,000	548,000
Geothermal Heat Sales	140,314	140,000	90,000
Water Sales - Geothermal	20	0	0
Water Sales - Other	683,897	600,000	120,000
Total: Rate Revenue	\$35,476,683	\$35,400,000	\$27,879,746

The projected FY 15/16 revenues are less than previous amounts because water consumption patterns are different from those of FY 13/14.

The average consumption per single-family residential connection decreased from 21 hcf/month in 2013 to 16 hcf/month in 2015.

Rate Revenues from Proposed Rate Increases

Rate revenues resulting from proposed rate increases are shown later in this report.

Expense Projections

O&M Expenses

Operation and maintenance (“O&M”) expenses for FY 14/15 were obtained from the Department, as was the FY 15/16 budget. These records, along with conversations with Department staff, were used to identify any significant deviations in O&M expenses compared with the Department’s FY 15/16 budget.

Table 4 shows the basis for projection of O&M expenses for the Study period, and beyond. Additional detail is included in the Appendix and a summary of O&M expenses by Department section is shown in Table 5.

Table 4
O&M Expenses – Basis for Projection

Type of Expense	FY 15/16 Projection	Succeeding Years	Notes
All Expenses Not Described Below	FY 15/16 Budget	Previous Year + Inflation	
Personnel Costs	FY 15/16 Budget - Vacancies	Previous Year + Infl; Fill Vacancies	1
PERS	% of Salary times Actuarial Projections	% of Salary times Actuarial Projections	2
Customer Relations and Billing	FY 15/16 Budget	Previous Year + Inflation + Growth	3
Electricity	FY 15/16 Budget	Previous Year + Inflation + Growth	3
Chemicals	FY 15/16 Budget	Previous Year + Inflation + Growth	3
City-Provided Services	Per 2015 Agreement	Per 2015 Agreement	4
Supplemental Water Purchases	Calculated: Rate * Sales	Calculated: Rate * Sales	5
Water Loss Management	FY 15/16 Budget	Less Non-Recurring \$	6

Notes:

1. There are a number of budgeted, but unfilled, positions within the Water Division. The cost of vacant positions is excluded from financial projections, and it is assumed that the vacancies will be filled during FY 16/17 and 17/18, with some level of vacancies occurring on an ongoing basis in subsequent years.
2. PERS projections were obtained from CalPERS actuarial data provided by the Department. Generally, PERS costs are increasing faster than inflation.
3. In addition to inflation, these expenses are projected to increase with growth at a rate of 1% per year.
4. The Department and the City negotiated an agreement that defines these costs through FY 15/16. For the purposes of this rate study, payments in future years are not projected to change.
5. Supplemental water purchase costs are projected to equal Replenishment Charge revenues. Replenishment Charge revenues are discussed in more detail below.
6. Certain expenses in the FY 15/16 are expected to be non-recurring after FY 16/17.

As shown in Table 5, the majority of O&M expenses pay for services provided by the Department’s Administrative Services and Water Utility Divisions. The Water Fund also pays for a portion of the Electrical, Instrumentation, and SCADA Section which is housed in the Department’s Water Reclamation Division.

Overall, O&M expenses through FY 20/21 are projected to increase at an average rate of 3.8 percent per year. This is higher than the projected 2.1% annual inflation rate. Although most expenses are projected to increase at the rate of inflation, several factors cause the projected increases that exceed inflation:

- Increase in supplemental water purchase costs from \$250,000 in FY 14/15 to over \$2,000,000 per year by FY 20/21 to provide resources to purchase over 12,000 acre-feet per year and accommodate increases in water purchase costs from the Department’s respective SWP Contractor, San Bernardino Valley Municipal Water District (“Valley District”). This is the most significant reason that projected increases in O&M expenses exceed the rate of inflation.
- Additional personnel costs after vacant positions are filled.
- PERS expenses that increase faster than inflation.
- Some expenses, such as billing expenses, that are also projected to increase with customer growth.

**Table 5
Projected Operation and Maintenance Expenses**

Line	Division and Section	Section Number	Projected					
			FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
1	Administration Division							
2	Board of Water Commissioners	1010	\$59,300	\$60,540	\$61,800	\$63,100	\$64,420	\$65,780
3	Administration	1050	516,297	530,280	544,080	558,080	572,420	584,440
4	Administration Services	1055	188,708	195,800	202,570	209,380	216,400	220,940
5	Environmental and Regulatory Compliance	1060	573,245	592,210	610,500	628,980	647,970	661,570
6	Human Resources	1070	196,551	203,270	209,730	216,260	222,970	227,650
7	Finance	2010	607,799	627,550	646,640	665,930	685,760	700,150
8	Information Technology	2030	852,278	876,220	899,740	923,590	948,040	967,950
9	Purchasing, Warehouse & Fleet	2040	340,022	351,540	362,620	373,820	385,310	393,400
10	Fleet	2045	962,542	985,470	1,008,450	1,031,840	1,055,770	1,077,950
11	Customer Relations	2050	187,107	200,050	208,520	217,210	226,240	233,310
12	Water Conservation	2055	290,898	298,260	305,590	313,040	320,660	327,390
13	Customer Service	2060	837,963	866,930	894,760	922,870	951,760	971,740
14	Billing	2070	792,711	821,990	850,280	879,370	909,470	937,850
15	Cashiering	2080	305,662	316,620	327,110	337,700	348,580	355,910
16	Field and Meter Services	2090	1,053,341	1,090,750	1,126,630	1,162,810	1,200,040	1,225,240
17	General Administration Expense	2510	5,373,500	5,440,400	5,508,700	5,578,430	5,649,640	5,722,350
18	Subtotal Administration Division		\$13,137,924	\$13,457,880	\$13,767,720	\$14,082,410	\$14,405,450	\$14,673,620
19								
20	Water Utility Division							
21	Water Utility Administration	3010	\$608,904	\$627,470	\$645,530	\$663,830	\$682,610	\$696,930
22	Distribution Administration	3020	447,789	463,740	479,030	494,450	510,310	521,030
23	Distribution Service and Repair	3021	2,426,614	2,500,980	2,573,310	2,646,510	2,721,660	2,778,810
24	Distribution Maintenance	3023	2,144,349	2,212,050	2,277,710	2,344,110	2,412,290	2,462,950
25	Water Loss Management	3024	387,239	145,880	150,330	154,830	159,450	162,600
26	Water Administration	3040	347,178	359,500	371,320	383,250	395,510	403,820
27	Production and Treatment	3041	7,585,781	8,119,841	8,737,672	9,369,113	9,881,757	10,119,910
28	Plant and Facility Maintenance	3042	1,162,342	1,196,710	1,230,280	1,264,260	1,299,150	1,326,430
29	Specialty Construction	3043	683,065	706,630	729,290	752,160	775,680	791,970
30	Engineering	3060	1,394,057	1,423,330	1,453,210	1,483,740	1,514,900	1,546,710
31	Quality and Backflow	3063	1,257,467	1,296,950	1,335,260	1,374,010	1,413,790	1,443,480
32	Subtotal, Water Utility Division		\$18,444,785	\$19,053,081	\$19,982,942	\$20,930,263	\$21,767,107	\$22,254,640
33								
34	Water Reclamation Division							
35	Electrical, Instrumentation, and SCADA	4042	\$582,160	\$603,130	\$623,210	\$643,440	\$664,270	\$678,210
36	Subtotal Water Reclamation Division		\$582,160	\$603,130	\$623,210	\$643,440	\$664,270	\$678,210
37								
38	Adjustment for Vacancies		(\$1,480,000)	(\$1,110,000)	(\$600,000)	(\$600,000)	(\$600,000)	(\$600,000)
39								
40	Total, O&M Expenses		\$30,684,869	\$32,004,091	\$33,773,872	\$35,056,113	\$36,236,827	\$37,006,470

Capital Improvements and Capital Improvement Funding

The Department provided its Capital Improvement Plan (“CIP”), covering the years through FY 20/21. This CIP contains 60 projects incorporated into this Study, and in Table 6, the projects are grouped into one of five categories shown in the table.

**Table 6
Projected Capital Improvements**

Capital Expenditure Category	Projected						FY 15/16-20/21	Notes
	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	Total	
Total Capital Expenditures, FY 15/16 Dollars								1
Replacement/Rehabilitation Assets	\$4,142,000	\$7,352,000	\$11,312,000	\$9,047,000	\$5,537,000	\$2,047,000	\$39,437,000	
New System Assets	3,457,000	5,045,000	395,000	4,045,000	395,000	5,895,000	19,232,000	
Generators	0	300,000	300,000	300,000	300,000	0	1,200,000	
Rolling Stock	145,000	145,000	330,000	0	0	0	620,000	
Pipeline Construction Crew	0	500,000	500,000	500,000	500,000	500,000	2,500,000	
Subtotal, Capital Expenditures, FY 15/16 Dollars	\$9,142,500	\$14,740,500	\$14,235,500	\$15,290,500	\$8,130,500	\$9,840,500	\$71,380,000	
Total Capital Expenditures, Inflation Adjusted Dollars								2
Replacement/Rehabilitation Assets	\$4,142,000	\$7,506,000	\$11,792,000	\$9,629,000	\$6,017,000	\$2,271,000	\$41,357,000	
New System Assets	3,457,000	5,151,000	412,000	4,305,000	429,000	6,541,000	20,295,000	
Generators	0	306,000	313,000	319,000	326,000	0	1,264,000	
Rolling Stock	145,000	148,000	344,000	0	0	0	637,000	
Pipeline Construction Crew	0	511,000	521,000	532,000	543,000	555,000	2,662,000	
Subtotal, Capital Expenditures, Inflation Adjusted Dollars	\$9,142,500	\$15,050,000	\$14,840,000	\$16,273,000	\$8,834,000	\$10,919,000	\$75,058,500	

Notes:

(1) Source: Department's CIP, excluding projects funded by non-Department agencies or developers.

(2) Projected inflation rate of 2.1 percent per year.

The majority of projected capital expenditures are either the replacement or rehabilitation of existing assets, or construction of new system assets. The Department also plans to replace eight of its portable generators by FY 19/20. Rolling stock expenditures for vehicles are also projected, as is the implementation of a pipeline construction crew to complete pipeline construction projects in-house.

The CIP provided by the Department was in FY 15/16 dollars, and Table 6 shows how inflation was applied to develop projected capital expenditures used in this rate study.

Not included in this rate study are Department projects that are funded by outside agencies or that are funded by developers, since these capital projects do not affect water rates.

The Department anticipates issuing debt to fund much of this CIP. In general, debt issuances are sized and timed to fund the CIP and minimize rate increases. The anticipated debt proceeds would fund approximately 69 percent of the estimated capital project cost through FY 20/21. Debt service payments would be paid through rate revenue and other non-rate revenues.

Existing and Projected Debt Service

Table 7 shows existing debt service, consisting of three California Infrastructure and Economic Development Bank (“CIEDB”) loans and notes payable to Valley District. Existing debt service is currently approximately \$2.3 million per year which drops to approximately \$2.1 million year in FY 17/18.

**Table 7
Existing and Projected Debt Service Payments**

Line	Existing Debt Service	Type of Payment	Projected					Notes	
			FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20		FY 20/21
1	2002 CIEDB	Principal	\$594,440	\$614,290	\$634,810	\$656,010	\$677,930	incl. in total	1
2	2007 CIEDB	Principal	492,780	506,130	519,850	533,940	548,400	incl. in total	1
3	2012 CIEDB	Principal	435,110	446,470	458,120	470,080	482,350	incl. in total	1
4	2002 CIEDB	Interest/Annual Fee	\$153,710	\$133,850	\$113,340	\$92,138	\$70,218	incl. in total	1
5	2007 CIEDB	Interest/Annual Fee	179,754	166,219	152,317	138,060	123,600	incl. in total	1
6	2012 CIEDB	Interest/Annual Fee	233,468	221,963	210,158	197,920	185,650	incl. in total	1
7	SBVMWD Note Payable	Principal and Interest	229,227	229,227	0	0	0	incl. in total	1
8	Total, Existing Debt Service		\$2,318,489	\$2,318,149	\$2,088,595	\$2,088,148	\$2,088,148	\$2,088,148	
9									
10	Debt Service For use in DSCR Calculations		\$2,089,262	\$2,088,922	\$2,088,595	\$2,088,148	\$2,088,148	\$2,088,148	2

Line	Proposed Debt Service	Issue Date	Amount	Interest Rate	Total Principal and Interest Payment							
					FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20		FY 20/21
11	CIEDB	16/17	\$10,000,000	3.5%			773,200	773,200	773,200	773,200	773,200	3
12	CIEDB	18/19	\$10,000,000	3.5%					781,790	781,790	781,790	3
13	Revenue Bond/Private Placement	16/17	\$0	6.0%			0	0	0	0	0	3
14	Revenue Bond/Private Placement	17/18	\$13,000,000	6.0%			1,035,000	1,035,000	1,035,000	1,035,000	1,035,000	3
15	Revenue Bond/Private Placement	18/19	\$4,000,000	6.0%					318,460	318,460	318,460	3
16	Revenue Bond/Private Placement	19/20	\$7,000,000	6.0%						557,310	557,310	3
17	Revenue Bond/Private Placement	20/21	\$8,000,000	6.0%							636,920	3
18	Total				\$0	\$773,200	\$1,808,200	\$2,908,450	\$3,465,760	\$4,102,680		

Notes:

- (1) Source: Department's FY 14/15 Comprehensive Annual Financial Report. Annual expenses are available through FY 19/20, and starting in FY 20/21 are grouped into five-year totals. For this analysis, FY 20/21 debt service payments are assumed to equal FY 19/20
- (2) In SBVMWD Note Payable appears to be not included in the debt service coverage ratio calculation in the Department's Financial Statements.
- (3) Issuance terms for CIEDB debt: 3.5% interest over 20 years, with 10% capitalized bond reserve and 1% cost of issuance. Private placement financing assumes 6% interest over 30 years, no cost of issuance, senior lien (per 2013 conversation with City). Also includes capitalized bond reserve of 8.75% of bond proceeds (per 2014 conversation with City).

The Department is anticipating \$10 million in CIEDB funding in FY 16/17 and another \$10 million in FY 18/19. Anticipated CIEDB loan terms are 3.5 percent interest over 20 years, with a 10 percent capitalized bond reserve and 1 percent cost of issuance.

Remaining debt financing would come from either a revenue bond or a private placement issuance. For the purposes of this rate study, anticipated terms are 6 percent interest over 30 years, with an 8.75 percent capitalized bond reserve and no additional costs of issuance.

Reserves

The Department has created several water system reserves, and has established desired reserve amounts and timelines for accumulating them. In this Rate Study, the Department is projected to balance the benefits of maintaining and accumulating reserves per these policies with the financial impacts of doing so. A description of these reserves, the desired minimum reserve balances, and projected reserve balances through the Study period follows:

- **Operating Reserve.** The minimum Operating Reserve balance is 45 days of O&M expenses. This minimum balance is projected to be maintained

throughout the Study period, gradually increasing to approximately \$4.6 million by the end of the rate study planning period in FY 20/21.

- **Revenue Stabilization Reserve.** The minimum Revenue Stabilization Reserve balance is 20 percent of annual water sales revenue. The Department would like to gradually accumulate this reserve by FY 16/17. However, because of changed water consumption patterns and decreased water consumption, there is projected to be insufficient reserves to keep a revenue stabilization reserve through the remainder of the Study period.
- **Emergency Reserve.** The minimum Emergency Reserve balance is two percent of the total plant in service. The Department is phasing in the accumulation of this reserve over a ten-year period, where FY 14/15 is the third year and FY 20/21 is the ninth year. By FY 20/21 the Department's goal is for the reserve to contain 90 percent of its ultimate goal of two percent of plant in service. This reserve is not projected to be funded at the levels described by the Department's phase in schedule. By the end of FY 20/21, the projected reserve balance is 80 percent of the goal of two percent of plant in service.
- **Capital Replacement Reserve.** The minimum Capital Replacement Reserve balance is 20 percent of the cash-funded CIP. After FY 15/16, this reserve is projected to be unfunded through the remainder of the Study period.
- **Unrestricted Fund Balance.** The balance of Department reserves, for the purposes of this rate study, as Unrestricted Fund Balance. There is no minimum balance established for Unrestricted Funds, but in this Study, the intent is to keep this balance above \$0.

By the end of FY 20/21, the Department is projected to have a total of approximately \$10.2 million in water reserve balances, as shown in further detail in Table 9 below.

Financial Projection

To provide for the continued operation of a utility on a sound financial basis, revenues must be sufficient to meet the cash requirements for operation and maintenance (O&M) expense, debt service and debt service coverage requirements, reserves, and cash funded capital expenditures.

Table 8 shows the Department's revenue requirement projections through FY 20/21. Lines 1 through 15 show sources of funds, including beginning year reserves, water rate revenues, other revenues, and debt proceeds.

The financial projection includes rate increases effective each July 1 starting in 2016 that are described in further detail below.

Lines 17 through 25 show the projected uses of funds. These uses of funds include O&M expenses shown in Table 5 of this report, existing and proposed debt service shown in Table 7 of this report, and capital expenditures. Line 27 shows the projected end year reserve balance.

Table 8
Revenue Requirement Projections

Line	Projected						Notes	
	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21		
1	SOURCES OF FUNDS							
2	Beginning Fund Balance	\$17,789,720	\$7,951,348	\$4,620,713	\$5,021,275	\$6,055,363	\$8,205,457	
3	Operating Revenues							
4	Water Rate Revenues (Includes Rate Increases)	22,873,518	25,290,963	27,963,973	30,919,563	32,938,756	35,089,867	1
5	Elevation Charge Revenues	2,036,160	2,056,522	2,077,085	2,097,857	2,118,838	2,140,027	2
6	Replenishment Fee Revenues	1,155,468	1,426,361	1,833,522	2,248,683	2,538,367	2,563,750	2
7	Water Conservation Charge	1,140,000	1,613,053	1,629,180	1,645,470	1,661,920	1,678,540	2
8	Other Operating Revenues	2,266,550	2,720,330	2,734,350	2,748,610	2,763,120	2,777,880	2
9	Non-Operating Revenues							
10	Investment Income	355,790	159,030	92,410	100,430	121,110	164,110	2
11	Service Installation and Acquisition Fees	500,000	1,700,000	1,700,000	1,700,000	1,700,000	1,700,000	
12	Non-Capital Grant Fund (AIG)	1,500,000	1,531,500	1,563,660	1,596,500	1,630,030	1,664,260	
13	Other Non-Operating Revenues	480,000	340,000	340,000	340,000	340,000	340,000	
14	Debt Proceeds	0	10,000,000	13,000,000	14,000,000	7,000,000	8,000,000	3
15	Total Sources of Funds	\$50,097,206	\$54,789,105	\$57,554,893	\$62,418,388	\$58,867,503	\$64,323,891	
16								
17	USES OF FUNDS							
18	O&M Expenditures	\$30,684,869	\$32,004,091	\$33,773,872	\$35,056,113	\$36,236,827	\$37,006,470	4
19	Debt Service							
20	Existing Debt	2,318,489	2,318,149	2,088,595	2,088,148	2,088,148	2,088,148	3
21	Proposed Debt	0	796,152	1,831,151	2,945,764	3,503,071	4,139,993	3
22	Capital Expenditures							
23	Cash Funded	9,142,500	5,050,000	1,840,000	2,273,000	1,834,000	2,919,000	5
24	Debt Funded	0	10,000,000	13,000,000	14,000,000	7,000,000	8,000,000	5
25	Total Expenditures	\$42,145,858	\$50,168,392	\$52,533,617	\$56,363,026	\$50,662,046	\$54,153,611	5
26								
27	ENDING FUND BALANCE	\$7,951,348	\$4,620,713	\$5,021,275	\$6,055,363	\$8,205,457	\$10,170,280	6

Notes:

- (1) Refer to Table 10 below for the projected rate schedule that is anticipated to generate this rate revenue income
- (2) Refer to the Appendix for more detail on other operating revenues and non-operating revenues
- (3) Refer to Table 7
- (4) Refer to Table 5
- (5) Refer to Table 6
- (6) Refer to Table 9 below

Table 9 shows the various reserve balances and the projected Debt Service Coverage Ratio. The Debt Service Coverage Ratio is projected to exceed the Department's bond covenants throughout the study period, exceed 1.5 beginning in FY 16/17, and exceed 1.75 beginning in FY 20/21.

Table 9
Financial Performance Indicators

Line	Projected						Notes	
	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21		
37	USES OF FUNDS							
38	O&M Expenditures	\$30,684,869	\$32,004,091	\$33,773,872	\$35,056,113	\$36,236,827	\$37,006,470	
39	Debt Service							
40	Existing Debt	\$2,318,489	\$2,318,149	\$2,088,595	\$2,088,148	\$2,088,148	\$2,088,148	
41	Proposed Debt	\$0	\$796,152	\$1,831,151	\$2,945,764	\$3,503,071	\$4,139,993	
42								
43	Capital Projects	\$9,142,500	\$15,050,000	\$14,840,000	\$16,273,000	\$8,834,000	\$10,919,000	
44								
45	Total Expenditures	\$42,145,858	\$50,168,392	\$52,533,617	\$56,363,026	\$50,662,046	\$54,153,611	
46								
47								
48	FINANCIAL PERFORMANCE INDICATORS							
49	EOY Reserve Balance (Target in Parentheses)							
50	Operating Reserve (45 Days of Operating Expenses)	\$3,783,070	\$3,945,710	\$4,163,900	\$4,321,990	\$4,467,550	\$4,562,440	1
51	Rate Stabilization Reserve (20% of Water Sales)	360,759	0	0	0	0	0	2
52	Emergency Replacement Reserve (2% of Total Capital Assets)	2,257,772	672,715	845,338	1,697,383	3,695,496	5,566,475	3
53	Capital Replacement Reserve (Avg of Next 5 Years PAYG CIP)	1,519,600	0	0	0	0	0	4
54	Unencumbered Reserves	30,146	2,289	12,037	35,990	42,411	41,366	5
55	Total EOY Reserve Balance	\$7,951,348	\$4,620,713	\$5,021,275	\$6,055,363	\$8,205,457	\$10,170,280	
56								
57	Debt Service Coverage Ratio							
58	Gross Revenue	\$32,307,486	\$36,837,758	\$39,934,179	\$43,397,113	\$45,812,140	\$48,118,434	
59	Less O&M Expenses	(30,684,869)	(32,004,091)	(33,773,872)	(35,056,113)	(36,236,827)	(37,006,470)	
60	Revenue Available for Debt Service	\$1,622,617	\$4,833,667	\$6,160,307	\$8,341,000	\$9,575,313	\$11,111,964	
61								
62	First Tier Debt Service	\$2,089,262	\$2,885,074	\$3,919,746	\$5,033,912	\$5,591,219	\$6,228,141	
63								
64	Debt Service Coverage Ratio	0.78	1.68	1.57	1.66	1.71	1.78	
65	DSCR Criterion: Minimum	1.75	1.75	1.75	1.75	1.75	1.75	

Proposed Water Rate Schedule

Conservation Charge

When implemented in 2010, the Conservation Charge was designed to apply to water use that exceeded 50 percent of the customer class average for 2009, creating a 2nd tier that included this charge. It was set at \$0.35/hcf in order to provide a conservation signal. In this rate study, the Conservation Charge is re-evaluated, with a focus on defining costs associated with high water consumption.

Water Conservation Program

The Department's water conservation program is contained in Section 2055. The Department has 1 FTE devoted to conservation efforts, and the Department provides community outreach and advertising. Total costs in the Department's FY 15/16 budget are \$290,898.

Water Loss Management

The Department's water loss management program is contained in Section 3024. The Department has 2 FTEs devoted to these efforts, and the Department's FY 15/16 budget also includes \$250,000 for a city-wide median and turf removal conservation project. The total cost in the Department's FY 15/16 budget is \$413,739.

Well Rehabilitation

In recent years, the water table has been dropping in the aquifers the Department’s wells pump from. The Department is planning on a series of well rehabilitation projects that will lower the submersible pumps and vertical turbine pump bowls. The estimated cost to complete 10 of these rehabilitation projects per year is approximately \$790,000.

Additional Electricity from Pumping from Deeper Wells

A lower water table means that water has to be pumped a greater height to reach the water distribution system. This in turn requires additional electricity costs. The annual cost of this electricity, assuming a 50-foot increase in pumping head, electricity costs of approximately \$0.086/kWh, 60% pump/motor efficiency, and the volume of water sold in the 2nd rate tier, is approximately \$56,000 per year.

Additional Costs from Using Peaking Wells

The Department has wells that operate year-round and wells that operate seasonally. The wells that operate seasonally are, on average, more expensive to operate than those that operate year round². The additional cost to operate these seasonal wells, applied to the volume of water sold in the 2nd rate tier during the summer, is approximately \$127,000 per year.

Water Sold in the 2nd Tier

Based on an account-by-account review of the Department’s billing records, in FY 13/14, a total of 3,422,170 end tier.

Calculation of Conservation Charge

Table 10 summarizes the revised conservation charge, calculated to be \$0.49/hcf.

Table 10
Proposed Revision to Conservation Charge

<u>Component of Conservation Charge</u>	<u>Amount</u>
Billing Unit 2055, Water Conservation, FY 15/16 Budget	\$291,000
Billing Unit 3024, Water Loss Management, FY 15/16 Budget	\$414,000
Estimated Annual Cost for Well Rehabilitation	\$790,000
Estimated Additional Electricity from Pumping from Deeper Wells	\$56,000
Estimated Additional Costs from Using Peaking Wells	\$127,000
Total	\$1,678,000
Calculation of Conservation Charge	
Costs Included in Conservation Charge	\$1,678,000
Projected 2nd Tier Consumption, hcf	3,422,170
Conservation Charge, \$/hcf	\$0.49

² This discussion excludes the Department’s EPA wells, which the Department is required to operate year round. These EPA wells are more expensive to operate because of the cost of the treatment facilities. The Department is reimbursed for certain costs associated with operating these wells.

Replenishment Fee

Replenishment Fee revenues are used solely for purchase of regional water for aquifer recharge. The proposed increase is from the current \$0.09/hcf to \$0.11/hcf on July 1, 2016, with further increases to \$0.14/hcf and \$0.17/hcf on July 1, 2017 and July 1, 2018. The increases are in anticipation of increases in the cost of regional water from Valley District, while maintaining the ability to purchase, subject to availability, approximately 12,000 acre-feet of water each year.

Elevation Charge

No changes to the Elevation Charge are proposed.

Minimum Monthly Charge and Commodity Charge

Combined, the Minimum Monthly Charge and the Commodity Charge make up the majority of the Department's water sales revenues. The Minimum Monthly Charge is a fixed charge, which does not vary by water use. The Commodity Charge (along with the Conservation Charge, Replenishment Fee, and Elevation Charge) are variable charges, which are assessed per unit of water used. Currently, approximately 32 percent of the Department's water rate revenue is from fixed charges.

Water utilities are often faced with a tradeoff when establishing rate structures. Higher fixed charges provide greater revenue stability, where water sales revenues are more constant and do not fluctuate as water use fluctuates. This is desirable, given that many of a utility's costs are fixed – they remain necessary even if water consumption fluctuates. Variable costs, by contrast, are those that fluctuate with water consumption.

However, higher fixed charges reduce the ability of a customer to control their water bill by reducing water consumption. Higher fixed charges also result in lower variable charges, which may not provide as much of an incentive for customers to use water wisely.

Most of the Department's costs are fixed costs. In FY 15/16, for example the Department's total expenditures are approximately \$42 million (see Table 8). Variable costs for electricity, supplemental water purchases, and treatment chemicals (such as chlorine and granular activated carbon) are approximately \$6 million. The remainder of the expenses are labor, materials, supplies, equipment, services, debt service, and capital expenses.

Regardless of water consumption, debt service must be paid, and the majority of labor, materials, supplies, equipment, and services are necessary to operate and maintain the water system. Capital expenditures for service reliability, repair and replacement, and regulatory compliance are also required, though capital spending to add system capacity is often deferred if water consumption decreases.

The Department recognizes that most of its costs are fixed costs, but only about a third of its revenue are from fixed charges. Mindful of the tradeoffs described above, the

Department desires to gradually increase revenue recovery from fixed charges to approximately 50 percent over a six-year period.

The proposed water rate schedule shown in Table 11 shows how this would occur through 2018. Minimum Monthly Charge and Commodity Charge increases effective July 1 of 2016, 2017, and 2018 are proposed. The rate increases are proposed to be applied to the various components of the rate structure as follows:

- Commodity Charge: Remains at \$1.15/hcf
- Minimum Monthly Charge: For a 5/8"x3/4" meter (the size most customers use), the Minimum Monthly Charge increases from the current \$12.90 to \$16.09, \$19.58, and \$23.39 on 7/1/16, 7/1/17, and 7/1/18, respectively. Minimum Monthly Charges for other meter sizes would increase proportionately.
- Replenishment charge: increases from the current \$0.09/hcf to \$0.11/hcf on July 1, 2016, with further increases to \$0.14/hcf and \$0.17/hcf on July 1, 2017 and July 1, 2018. Replenishment Charge revenues are used solely for purchase of regional water for aquifer recharge.
- Elevation charge: unchanged
- Conservation charge: as described in Table 10 above, increases from \$0.35/hcf to \$0.49/hcf on July 1, 2016. No subsequent increases are proposed in 2017 or 2018.

Table 11
Proposed Water Rate Schedule

	Current	Proposed		
		Effective Date		
		7/1/2016	7/1/2017	7/1/2018
Monthly Minimum Charge				
<u>Water Meter Size</u>				
1/2" & 5/8"	\$12.90	\$16.09	\$19.58	\$23.39
3/4"	\$16.15	\$20.15	\$24.51	\$29.28
1"	\$22.60	\$28.19	\$34.30	\$40.98
1 1/2"	\$38.80	\$48.40	\$58.88	\$70.35
2"	\$58.20	\$72.60	\$88.32	\$105.52
3"	\$103.50	\$129.12	\$157.06	\$187.66
4"	\$158.20	\$197.36	\$240.07	\$286.83
6"	\$330.00	\$411.68	\$500.78	\$598.33
8"	\$524.15	\$653.88	\$795.40	\$950.34
10"	\$750.65	\$936.44	\$1,139.12	\$1,361.01
Commodity Charge (\$/hcf)	\$1.15	\$1.15	\$1.15	\$1.15
Replenishment Charge (\$/hcf)	\$0.09	\$0.11	\$0.14	\$0.17
Elevation Charge (\$/hcf)				
Zone 1	\$0.11	\$0.11	\$0.11	\$0.11
Zone 2	\$0.19	\$0.19	\$0.19	\$0.19
Zone 3	\$0.17	\$0.17	\$0.17	\$0.17
Zone 4	\$0.14	\$0.14	\$0.14	\$0.14
Zone 5	\$0.23	\$0.23	\$0.23	\$0.23
Zone 6	\$0.23	\$0.23	\$0.23	\$0.23
Conservation Charge (\$/hcf exceeding cutoff)	\$0.35	\$0.49	\$0.49	\$0.49

Not included in Table 11 are the remaining projected increases to the Minimum Monthly Charge that would take effect (if adopted) in 2019 and 2020. Further increases to \$25.80 and \$28.35 are projected and are presented here for informational purposes. Similarly, an increase in the Replenishment Charge to \$0.19/hcf is projected in 2019. Included below is further discussion of ongoing considerations that the Department should monitor as it evaluates its water rates in the future.

Example Monthly Water Bill Comparison

In 2015, the average monthly water consumption for a single-family residence in San Bernardino was 16 hcf/month. Table 12 shows example monthly water bills for a customer with a 1/2-inch x 5/8-inch water meter served by the Department and using 16 hcf/month. Under current rates, the monthly bill is \$35.59. Proposed increases would result in a monthly bill of \$39.67 effective 7/1/16, with subsequent increases to \$43.65 on 7/1/17 and \$49.15 on 7/1/18.

This table shows that the Department’s monthly water bill for this average residential customer is lower than most neighboring agencies, even after the proposed three water rate increases. It is important to note that most of the neighboring water systems have either adopted rate increases that will take effect in the future, or are currently reviewing their water rates.

Table 12
Monthly Single-Family Residential Bill Comparison (1)

Utility	Monthly Bill	Consumption hcf/month	Notes
SBMWD Existing	\$35.59	16	Average of six elevation charge zones
SBMWD Proposed	\$39.11	16	Proposed, effective 7/1/16
SBMWD Proposed	\$43.07	16	Proposed, effective 7/1/17
SBMWD Proposed	\$47.36	16	Proposed, effective 7/1/18
Fontana Water Company	\$65.33	16	Not including any potential drought surcharges
Cucamonga Valley Water District	\$54.93	16	Includes Stage 6 Drought Surcharge; increases to \$66.28 by 7/1/18
East Valley Water District	\$53.53	16	Increases to \$59.49 by 7/1/16 (indoor allocation ~10 hcf/month)
Rialto	\$50.78	16	Increases to \$51.55 on 1/1/17
Colton	\$42.46	16	
Redlands	\$36.06	16	Increases to \$44.25 by 7/1/18
Riverside	\$33.24	16	Average of summer and winter rates; currently reviewing water rates

Note:

(1) For the Department, the monthly bill is on a customer with a 5/8-inch water meter using 16 hcf/month, paying the average of the six elevation charges. For other jurisdictions, the monthly charge for a 3/4-inch water meter was used if no monthly charge for a 5/8-inch water meter exists or, as is the case of EVWD, single-family residential customers typically have 3/4-inch meters. Note that Fontana Water Company’s monthly bill does not include any potential drought surcharges, but Cucamonga Valley Water District’s (CVWD) monthly bill includes the Stage 6 Drought Surcharge. If this drought stage declaration is lifted by CVWD, the monthly bill will decrease from what is shown in this table.

Table 12 shows that the monthly water bill impact from the proposed first rate increases is approximately \$4 per month. Because the majority of the increase is in the Monthly Service Charge, the financial impact will be approximately \$4 per month for most single-family residential customers, regardless of water consumption. Financial impacts will be higher than \$4 per month for customers with higher water use (over 32 hcf/month) that pay the Conservation Charge.

As a further comparison, in 2013, the average consumption for a single-family residence was 21 hcf/month. The current monthly water bill for a customer using 21 hcf/month is \$42.69.

Comparisons with other jurisdictions can be useful, but they do not in themselves explain why utility rates are set at the levels they are. Each utility is unique and has its own set of circumstances that influence rate setting. In particular, the following are not apparent from a monthly bill comparison:

- Age of infrastructure and needed capital investments in order to maintain service and comply with regulatory mandates.
- The condition of the infrastructure and the extent to which a utility chooses to invest in repairs and replacements to its infrastructure.
- For a utility providing water services, the specific sources of water supply, the degree that the utility relies on imported water, and the types of water treatment facilities that exist.

- Whether a utility is currently deferring capital investment and whether large capital expenditures loom in the future.
- How efficient a utility is in providing service.
- Specifically to the comparison shown in Table 11, whether future rate increases are anticipated for any of the other jurisdictions shown.

Ongoing Considerations

The financial plan shown in Table 8 above extends through FY 20/21, and rate increases are proposed through FY 17/18. There are a number of factors that will change over the next few years that have financial implications. The extent to which these factors change will influence the Department's next review of water rates. Although there are two additional rate increases presented in this report for informational purposes, the Department will review water rates in the future. At a future date, the Department will determine the magnitude and timing of future rate increases beyond those proposed for 2016, 2017, and 2018 in this report.

The Department should continue to monitor its financial status on an ongoing basis, and should continue to monitor the following:

- **State drought regulations.** State emergency drought regulations are continually being reviewed and adjusted. Future adjustments in the regulations may affect water consumption.
- **Water consumption patterns.** Financial projections are based on 2015 water consumption patterns. Changes in water consumption patterns will affect revenues. If water use increases in the future water revenues may be higher than what is projected in this analysis.
- **Customer growth.** This rate study assumes 1.0 annual customer growth through FY 20/21. Customer growth increases the size of the customer base and growth rates exceeding 1.0 percent per year will result in higher connection fee revenue and rate revenues. Conversely, customer growth less than 1.0 percent per year could result in lower revenues than projected in this report.
- **Changes in regional water supply availability and pricing.** The Replenishment Charge projection incorporate anticipated increases in the cost of supplemental water purchases, and they assume that supplemental water deliveries are available.
- **Capital project cost certainty.** The Capital Improvement Plan contains estimates of future project costs. The actual costs will not be known until the projects are designed, bid, and built.
- **Inflation rates.** The projected rates are based on a 2.1 percent annual inflation rate. Changes in inflation rates will have financial implications.
- **Interest rates.** Interest rates that differ from assumptions used in this Study will have financial implications.

City of San Bernardino Municipal Water Department Water Rate Model

Fiscal Years 15/16 through 20/21

Model prepared by FG Solutions, LLC in April 2016



TABLE A-1	Assumptions and General Parameters
TABLE A-2	Existing Water Rate Schedule
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TABLE A-5	Capital Improvement Plan Funding
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TABLE A-7	Projected Operating Statement - Cash Basis
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TABLE A-1
City of San Bernardino Municipal Water Department - Water Rate Model
Assumptions and General Parameters

Line							
1	Miscellaneous						
2	Rounding		(1)				
3	Rounding, Rate Structures		2				
4	Total Existing Water Depreciable and Non-Depreciable Assets	\$273,078,981		FY 15/16 CAFR, p 14			
5	Interest Income (%)		2%				
6	Fiancial Performance Criterion: DSCR Target		1.75				
7	Fiancial Performance Criterion: DSCR Covenant		1.10				
8	General Inflation (%)		2.1%				
9	6/30/15 Reserve Balance	\$17,789,720		FY 15/16 CAFR, p 14			
10							
11	Debt Issuance Terms						
12	CIEDB						
13	Annual Interest Rate (%)		3.5%				
14	Repayment Period (Years)		20				
15	Capitalized Bond Reserves (% of Principal)		10.0%				
16	Annual Loan Fee Rate (% of outstanding principal)		0.0%				
17	Cost of Issuance (%)		1.0%				
18	Bank Financing Private Placement Revenue Bond						
19	Annual Interest Rate (%)		6.0%				
20	Repayment Period (Years)		30				
21	Capitalized Bond Reserve (% of Proceeds)		8.75%				
22	Cost of Issuance (%)		0.0%				
23							
24	Reserve Balance Policies						
25	Operating Reserve Minimum (days of operating expenses)		45				
26	Revenue Stabilization Reserve (Percent of Sewer Sales)		10%				
27	Emergency Reserve (Percent of Total Plant in Service)		3%				
28	Capital Replacement Reserve (%of the Cash-Funded 5-Yr CIP)		20%	5-Yr PAYG = \$12,848,000 ; 20% =		\$2,569,600	
29							
30							
31	Other Operating Expense Assumptions	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
32	PERS (1)	24.209%	26.5%	28.4%	30.2%	32.0%	32.0%
33	Customer Growth, Residential	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
34	Customer Growth, Non-Res	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
35	Residential Consumption (2)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
36	Non-Res Consumption (2)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
37	Activated Carbon Cost Incr.	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
38							
39	Revenue Adjustments: FY 13/14 to FY 15/16 (3)	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
40	% Regular Water Sales \$ from Consumption \$ (4)	71.1%	71.1%	71.1%	71.1%	71.1%	71.1%
41	Water Use Change	-28.0%	-28.0%	-28.0%	-28.0%	-28.0%	-28.0%
42	Regular Water Sales \$ Change	-19.9%	-19.9%	-19.9%	-19.9%	-19.9%	-19.9%
43	Elevation Charge \$ Change	-28.0%	-28.0%	-28.0%	-28.0%	-28.0%	-28.0%
44	Replenishment Fee \$ Change	-28.0%	-28.0%	-28.0%	-28.0%	-28.0%	-28.0%
45	Conservation Charge \$ Change (5)	-52.5%	-52.5%	-52.5%	-52.5%	-52.5%	-52.5%

Notes:

(1) Per Department, 12/10/14, based on CalPERS Actuarial Valuation dated 6/30/13

(2) Systemwide customer growth, and not a measure of per-capita or per-connection consumption growth

TABLE A-2
City of San Bernardino Municipal Water Department - Water Rate Model
Existing Water Rate Schedule

Line	Customer Type	Unit	Existing Rate (1)
1	Single Family Residences, Multiple Family Connections, Commercial,		
2	Landscape, and Industrial Service Minimum Monthly Charge		
3	1/2 " & 5/8" meter	per Month	\$12.90
4	3/4" meter	per Month	\$16.15
5	1" meter	per Month	\$22.60
6	1 1/2" meter	per Month	\$38.80
7	2" meter	per Month	\$58.20
8	3" meter	per Month	\$103.50
9	4" meter	per Month	\$158.20
10	6" meter	per Month	\$330.00
11	8" meter	per Month	\$524.15
12	10" meter	per Month	\$750.65
13			
14	Commodity Charge	per HCF	\$1.15
15			
16	Replenishment Charge	per HCF	\$0.09
17			
18	Assessment Districts	per HCF	\$0.45
19			
20	Conservation Charge and Tiers		
21	Conservation Charge	per HCF	\$0.350
22	Conservation Tiers (cutoff) (2)		
23	Residential	HCF per Month	32
24	MDU (2 per unit)	HCF per Month	42
25	MDU (2+) per unit	HCF per Month	17
26	Non-Residential		
27	1/2 " & 5/8" meter	HCF per Month	24
28	3/4" meter	HCF per Month	36
29	1" meter	HCF per Month	65
30	1 1/2" meter	HCF per Month	150
31	2" meter	HCF per Month	250
32	3" meter	HCF per Month	740
33	Commercial		
34	1/2 " & 5/8" meter	HCF per Month	42
35	3/4" meter	HCF per Month	55
36	1" meter	HCF per Month	130
37	1 1/2" meter	HCF per Month	275
38	2" meter	HCF per Month	445
39	3" meter	HCF per Month	875
40	4" meter	HCF per Month	2,400
41	6" meter	HCF per Month	9,000
42			
43	Elevation Charge (all water users)		
44	Zone 1	per HCF	\$0.11
45	Zone 2	per HCF	\$0.19
46	Zone 3	per HCF	\$0.17
47	Zone 4	per HCF	\$0.14
48	Zone 5	per HCF	\$0.23
49	Zone 6	per HCF	\$0.23
50			
51	Additional Charges		
52	Surcharge - Area Outside City (no Zone)	% of \$/hcf	50%
53	Unmetered Construction Rate	per Month	\$50.00

Notes:

- (1) Source: City of San Bernardino Municipal Water Department Rule and Regulation No. 21
General Water Service/Water Rates. Rates effective January 1, 2012. HCF means hundred cubic feet
(2) The Conservation Charge is applicable to water use exceeding the cutoff value

TABLE A-3
City of San Bernardino Municipal Water Department - Water Rate Model
Projected Revenues, Including Water Sales Revenues Under Existing Rate Schedule (Excluding Interest Income)

Line		Historical	Historical	Historical	Budget	Projected	Budget	Projected						FY 15/16 -	Notes
		FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 14/15	FY 15/16	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	Annual Growth	
1	Water Sales Revenues														
2	Water Sales - Regular (Existing Rates)	\$25,993,264	\$27,111,743	\$27,562,842	\$27,600,000	\$26,220,000	\$27,006,600	\$27,876,000	\$28,154,760	\$28,436,310	\$28,720,670	\$29,007,880	\$29,297,960	-3.4%	2
3	FY 15/16 Adjustment							(\$5,550,482)	(\$5,605,987)	(\$5,662,047)	(\$5,718,667)	(\$5,775,854)	(\$5,833,613)		
4	Replenishment Fee (Existing)	1,543,813	1,605,944	1,701,462	1,700,000	1,615,000	1,615,000	1,155,468						17.3%	3
5	Recalculated								1,426,361	1,833,522	2,248,683	2,538,367	2,563,750		3
6	Conservation Charge (Existing)	850,777	1,117,879	1,192,046	1,200,000	1,140,000	1,140,000	1,140,000						8.0%	4
7	Recalculated								1,613,053	1,629,180	1,645,470	1,661,920	1,678,540		
8	Elevation Charge	2,587,573	2,779,266	2,820,407	2,800,000	2,660,000	2,660,000	2,828,000	2,856,280	2,884,840	2,913,690	2,942,830	2,972,260	1.0%	5
9	FY 15/16 Adjustment							(791,840)	(799,758)	(807,755)	(815,833)	(823,992)	(832,233)		5
10	Water Sales - Fire Service	441,634	443,780	461,679	460,000	460,000	464,600	464,600	469,250	473,940	478,680	483,470	488,300	1.0%	6
11	Water Sales - Municipal	554,384	944,236	914,016	900,000	855,000	855,000	900,000	900,000	900,000	900,000	900,000	900,000	0.0%	7
12	FY 15/16 Adjustment							(352,000)	(352,000)	(352,000)	(352,000)	(352,000)	(352,000)		
13	Water Sales - Unauthorized	500	0	0	0	0	0	0	0	0	0	0	0	n/a	8
14	Geothermal Heat Sales	124,989	139,659	140,314	140,000	140,000	140,000	90,000	140,000	140,000	140,000	140,000	140,000	9.2%	7, 8
15	Water Sales - Geothermal	790	770	20	0	0	0	0	0	0	0	0	0	n/a	8
16	Water Sales - Other	1,343,133	249,509	683,897	600,000	600,000	600,000	120,000	120,000	120,000	120,000	120,000	120,000	0.0%	8, 9
17	Subtotal: Water Sales Revenues	\$33,440,857	\$34,392,786	\$35,476,683	\$35,400,000	\$33,690,000	\$34,481,200	\$27,879,746	\$28,921,958	\$29,595,989	\$30,280,693	\$30,842,620	\$31,142,964	2.2%	
18															
19	Other Operating Revenues														
20	Service Charges	\$988,597	\$911,152	\$998,078	\$950,000	\$950,000	\$950,000	\$890,000	\$950,000	\$950,000	\$950,000	\$950,000	\$950,000	1.3%	7, 10
21	Broken Lock Charges	93,194	80,908	64,979	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	75,000	0.0%	7, 10
22	Returned Check Charges	14,950	14,300	13,131	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	0.0%	10
23	Fire Hydrant Flow Test	4,590	5,610	5,982	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	0.0%	10
24	Application Charge	19,890	20,170	14,753	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	0.0%	10
25	Will Serve Letter Charge	900	2,170	1,289	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	0.0%	10
26	Income from Services	108,244	96,990	100,424	95,000	95,000	95,000	45,000	95,000	95,000	95,000	95,000	95,000	16.1%	7, 10
27	Backflow Admin Fee	83,014	86,171	88,453	85,000	85,000	85,000	85,000	85,000	85,000	85,000	85,000	85,000	0.0%	10
28	Plan Check Fee	438,994	288,769	214,822	250,000	250,000	250,000	10,000	250,000	250,000	250,000	250,000	250,000	90.4%	7, 10
29	Hydro Sales	70,388	49,243	21,341	50,000	50,000	50,000	10,000	50,000	50,000	50,000	50,000	50,000	38.0%	7, 10
30	Administrative Services - Sewer	1,841,593	1,920,579	428,657	426,000	426,000	434,950	434,950	444,080	453,410	462,930	472,650	482,580	2.1%	11
31	Total: Other Operating Revenue	\$3,664,354	\$3,476,062	\$1,951,909	\$1,973,000	\$1,973,000	\$1,981,950	\$1,591,950	\$1,991,080	\$2,000,410	\$2,009,930	\$2,019,650	\$2,029,580	5.0%	
32															
33	Non-Operating Revenues														
34	Service Installation Fees	\$905,163	\$661,689	\$472,267	\$500,000	\$500,000	\$500,000	\$300,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	10.8%	7, 10
35	Acquisition Fees	1,067,000	1,228,400	1,253,856	1,200,000	1,200,000	1,200,000	200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	43.1%	7, 10
36	Developer Installed		845,716	86,723	0	1,097,500	0	0	0	0	0	0	0	n/a	10
37	EPA Contract - Capital Cost		661,498	235,312	970,000	75,000	895,000	0	0	0	0	0	0	n/a	12
38	AI&G CD Implementation	0	0	0	2,248,000	0	2,178,700	0	0	0	0	0	0	n/a	12
39	Other	1,041,667	24,218	345,650	50,000	26,000	0	140,000	0	0	0	0	0	n/a	13
40	AI&G O&M CD Implementation	1,838,223	3,110,201	2,169,327	1,500,000	1,700,000	1,500,000	1,500,000	1,531,500	1,563,660	1,596,500	1,630,030	1,664,260	2.1%	14
41	Rental Income	133,400	122,826	147,544	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	0.0%	10
42	Gain (Loss) Asset Disposition	(268,953)	(261,946)	152,971	0	0	0	0	0	0	0	0	0	n/a	10
43	Refunds Received		156,783	192,391	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	150,000	0.0%	10
44	Reimbursement Insurance		399	7,305	0	0	0	0	0	0	0	0	0	n/a	10
45	Easements		6,200	4,200	0	0	0	0	0	0	0	0	0	n/a	10
46	Discounts Earned		12,731	10,953	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	0.0%	10
47	Cashier Overages (Shortages)		(663)	0	0	0	0	0	0	0	0	0	0	n/a	10
48	Miscellaneous Revenue		5,218	6,439	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	0.0%	10
49	Non-Taxable Sales - Materials		9,512	18,435	0	0	0	0	0	0	0	0	0	n/a	10
50	Scrap Metal Sales		20,852	36,613	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	25,000	0.0%	10
51	Capital Grants	136,967				746,201		0	0	0	0	0	0	n/a	10
52	Total: Non-Operating Revenues	\$4,853,467	\$6,603,634	\$5,139,986	\$6,808,000	\$5,684,701	\$6,613,700	\$2,480,000	\$3,571,500	\$3,603,660	\$3,636,500	\$3,670,030	\$3,704,260	8.4%	
53	Summary														
54	Subtotal: Operating Revenue	\$37,105,211	\$37,868,848	\$37,428,592	\$37,373,000	\$35,663,000	\$36,463,150	\$29,471,696	\$30,913,038	\$31,596,399	\$32,290,623	\$32,862,270	\$33,172,544	2.4%	
55	Subtotal: Non-Operating Revenue	\$4,853,467	\$6,603,634	\$5,139,986	\$6,808,000	\$5,684,701	\$6,613,700	\$2,480,000	\$3,571,500	\$3,603,660	\$3,636,500	\$3,670,030	\$3,704,260	8.4%	
56	Total Revenues	\$41,958,678	\$44,472,482	\$42,568,578	\$44,181,000	\$41,347,701	\$43,076,850	\$31,951,696	\$34,484,538	\$35,200,059	\$35,927,123	\$36,532,300	\$36,876,804	2.9%	

TABLE A-3
 City of San Bernardino Municipal Water Department - Water Rate Model
 Projected Revenues, Including Water Sales Revenues Under Existing Rate Schedule (Excluding Interest Income)

Line	Historial	Historial	Historial	Budget	Projected	Budget	Projected					FY 15/16 - FY 20/21 Annual Growth	Notes
	FY 11/12	FY 12/13	FY 13/14	FY 14/15	FY 14/15	FY 15/16	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	

Notes:

- (1) FY 11/12 and FY 12/13 source: City of San Bernardino Municipal Water Department Rate Expense by Division (Excel Spreadsheet), provided in 2013
 FY 13/14 source: 2014 Revenue report, provided by Department 12/29/14. 14/15 and FY 15/16 source: FY 15/16 budget provided by Department in February 2016.
 FY 14/15 projection is the Department's projection developed in conjunction with its FY 15/16 budget.
- (2) Projected FY 15/16 water sales revenues are based on the Department's FY 14/15 budget, with an adjustment made to reflect actual consumption patterns from FY 15/16.
 The calculations of this adjustment are included in other tables in this analysis. Projected revenues also incorporate anticipated customer growth of 1% per year.
 Projected regular water sales revenues in this table do not incorporate proposed rate increases.
- (3) Replenishment Fee is recalculated in this rate analysis, and the projected Replenishment Fee shown in this table is based on the recalculation shown in Table A8.
- (4) Conservation Charge revenues are based on FY 15/16 budget and a review of year to date consumption patterns from FY 15/16.
 The Conservation Charge is recalculated beginning FY 16/17, see Table A8
- (5) Elevation Charge revenues are based on the FY 14/15 budget less an adjustment to reflect actual consumption patterns from FY 15/16.
- (6) Projected 14/15 equals the FY 14/15 budget. Future years increased according to a 1% annual customer growth.
- (7) Projections also adjusted by FG Solutions based on review of year to date FY 15/16 revenues.

- (8) Projected revenues equal the FY 14/15 budget.
- (9) Water Sales - Other is revenue accumulated from the sale of excess water through the Encanto Booster Pump, which pumps 24/7. Projections based on FY 15/16 year to date revenues and Department's anticipated future conditions.
- (10) Projected to remain at FY 15/16 levels through the remainder of the Rate Study period.
- (11) Administrative Services - Sewer is revenue to reimburse the Water Department for the expense of the Sewer's Administrative Services. Revenue increasing at 3%/year, per Department.
- (12) Related to consent decree. These revenues pay for specific capital projects. These types of capital projects will occur in the future, but neither the revenue (from EPA or other sources) or expenses (in the capital improvement program) are included in this analysis. FY 14/15 value of \$2,248,000 is not included in the Rate Study because the capital project it pays for is not included.
- (13) Energy rebates received during FY 15/16 that are non-recurring
- (14) Related to consent decree. These revenues pay for specific O&M projects, which in future years, are included in O&M projections.

TABLE A-4
City of San Bernardino Municipal Water Department - Water Rate Model
Historical and Projected Operation and Maintenance Expenses

Line	Section	Section Number	Proj. Actual	Budgeted	FY 15/16	Projected	Escalation (2)	Projected					FY 15/16 -	Notes
			FY 14/15 (1)	FY 15/16 (1)	Basis			FY 15/16	Basis	FY 16/17	FY 17/18	FY 18/19	FY 19/20	
1	Administrative Divisions													
2	Board of Water Commissioners	1010												
3	Salary - Full Time	1010	\$676	\$675	Budget	\$675	Inflation	690	\$700	\$710	\$720	\$740	1.9%	
4	Fringe - Other	1010	44,153	55,125	Budget	\$55,125	Inflation	56,280	57,460	58,670	59,900	61,160	2.1%	
5	All Other Expenses	1010	1,592	3,500	Budget	\$3,500	Inflation	3,570	3,640	3,720	3,800	3,880	2.1%	
6	Administration	1050												
7	Salary - Full Time	1050	116,282	134,361	Budget	\$134,361	Inflation	137,180	140,060	143,000	146,000	149,070	2.1%	5
8	Salary - Other	1050	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
9	PERS	1050	25,580	32,527	Budget	\$32,527	PERS	36,350	39,780	43,190	46,720	47,700	8.0%	3
10	Fringe - Other	1050	12,392	15,309	Budget	\$15,309	Inflation	15,630	15,960	16,300	16,640	16,990	2.1%	
11	All Other Expenses	1050	82,308	334,100	Budget	\$334,100	Inflation	341,120	348,280	355,590	363,060	370,680	2.1%	4
12	Administration Services	1055												
13	Salary - Full Time	1055	114,264	133,643	Budget	\$133,643	Inflation	136,450	139,320	142,250	145,240	148,290	2.1%	
14	Salary - Other	1055	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
15	PERS	1055	24,394	32,354	Budget	\$32,354	PERS	36,160	39,570	42,960	46,480	47,450	8.0%	3
16	Fringe - Other	1055	8,310	10,211	Budget	\$10,211	Inflation	10,430	10,650	10,870	11,100	11,330	2.1%	
17	All Other Expenses	1055	5,434	12,500	Budget	\$12,500	Inflation	12,760	13,030	13,300	13,580	13,870	2.1%	
18	Environmental and Regulatory Compliance	1060												
19	Salary - Full Time	1060	246,418	295,550	Budget	\$295,550	Inflation	301,760	308,100	314,570	321,180	327,920	2.1%	5
20	Salary - Other	1060	20	500	Budget	\$500	Inflation	510	520	530	540	550	1.9%	
21	PERS	1060	52,936	71,550	Budget	\$71,550	PERS	79,970	87,500	95,000	102,780	104,930	8.0%	3
22	Fringe - Other	1060	36,136	52,045	Budget	\$52,045	Inflation	53,140	54,260	55,400	56,560	57,750	2.1%	
23	All Other Expenses	1060	58,226	153,600	Budget	\$153,600	Inflation	156,830	160,120	163,480	166,910	170,420	2.1%	5
24	Human Resources	1070												
25	Salary - Full Time	1070	73,626	111,082	Budget	\$111,082	Inflation	113,410	115,790	118,220	120,700	123,230	2.1%	5
26	Salary - Other	1070	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
27	PERS	1070	15,788	26,892	Budget	\$26,892	PERS	30,050	32,880	35,700	38,620	39,430	8.0%	3
28	Fringe - Other	1070	13,220	26,177	Budget	\$26,177	Inflation	26,730	27,290	27,860	28,450	29,050	2.1%	
29	All Other Expenses	1070	17,908	32,400	Budget	\$32,400	Inflation	33,080	33,770	34,480	35,200	35,940	2.1%	
30	Finance	2010												
31	Salary - Full Time	2010	266,300	298,490	Budget	\$298,490	Inflation	304,760	311,160	317,690	324,360	331,170	2.1%	
32	Salary - Other	2010	100	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
33	PERS	2010	55,854	72,261	Budget	\$72,261	PERS	80,760	88,370	95,940	103,800	105,970	8.0%	3
34	Fringe - Other	2010	34,826	50,548	Budget	\$50,548	Inflation	51,610	52,690	53,800	54,930	56,080	2.1%	
35	All Other Expenses	2010	192,788	186,500	Budget	\$186,500	Inflation	190,420	194,420	198,500	202,670	206,930	2.1%	
36	Information Technology	2030												
37	Salary - Full Time	2030	213,064	258,542	Budget	\$258,542	Inflation	263,970	269,510	275,170	280,950	286,850	2.1%	
38	Salary - Other	2030	40	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
39	PERS	2030	44,640	62,591	Budget	\$62,591	PERS	69,950	76,540	83,100	89,900	91,790	8.0%	3
40	Fringe - Other	2030	37,266	57,845	Budget	\$57,845	Inflation	59,060	60,300	61,570	62,860	64,180	2.1%	
41	All Other Expenses	2030	538,392	473,300	Budget	\$473,300	Inflation	483,240	493,390	503,750	514,330	525,130	2.1%	
42	Purchasing, Warehouse & Fleet	2040												
43	Salary - Full Time	2040	144,078	186,724	Budget	\$186,724	Inflation	190,650	194,650	198,740	202,910	207,170	2.1%	5
44	Salary - Other	2040	186	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
45	PERS	2040	30,136	45,204	Budget	\$45,204	PERS	50,520	55,280	60,020	64,930	66,290	8.0%	3
46	Fringe - Other	2040	18,696	30,594	Budget	\$30,594	Inflation	31,240	31,900	32,570	33,250	33,950	2.1%	
47	All Other Expenses	2040	32,992	77,500	Budget	\$77,500	Inflation	79,130	80,790	82,490	84,220	85,990	2.1%	
48	Fleet	2045												
49	Salary - Full Time	2045	149,498	115,526	Budget	\$115,526	Inflation	117,950	120,430	122,960	125,540	128,180	2.1%	
50	Salary - Other	2045	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
51	PERS	2045	23,798	27,958	Budget	\$27,958	PERS	31,260	34,200	37,130	40,170	41,020	8.0%	3
52	Fringe - Other	2045	18,666	29,858	Budget	\$29,858	Inflation	30,490	31,130	31,780	32,450	33,130	2.1%	

TABLE A-4
 City of San Bernardino Municipal Water Department - Water Rate Model
 Historical and Projected Operation and Maintenance Expenses

Line	Section	Section Number	Proj. Actual	Budgeted	FY 15/16	Projected	Escalation (2)	Projected				FY 15/16 - FY 20/21	Notes	
			FY 14/15 (1)	FY 15/16 (1)	Basis	FY 15/16	Basis	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21		Annual Growth
53	All Other Expenses	2045	492,422	789,200	Budget	\$789,200	Inflation	805,770	822,690	839,970	857,610	875,620	2.1%	
54	Customer Relations	2050												
55	Salary - Full Time	2050	99,864	110,449	Budget	\$110,449	Infl, Cust Growth	113,900	117,450	121,120	124,900	128,800	3.1%	7
56	Salary - Other	2050	0	0	Budget	\$0	Infl, Cust Growth	0	0	0	0	0	n/a	7
57	PERS	2050	21,970	22,384	Budget	\$22,384	PERS	30,180	33,360	36,580	39,970	41,220	13.0%	3
58	Fringe - Other	2050	16,320	17,174	Budget	\$17,174	Infl, Cust Growth	17,710	18,260	18,830	19,420	20,030	3.1%	7
59	All Other Expenses	2050	11,234	37,100	Budget	\$37,100	Infl, Cust Growth	38,260	39,450	40,680	41,950	43,260	3.1%	7
60	Water Conservation	2055												
61	Salary - Full Time	2055	0	53,596	Budget	\$53,596	Inflation	54,720	55,870	57,040	58,240	59,460	2.1%	
62	Salary - Other	2055	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
63	PERS	2055	0	12,975	Budget	\$12,975	PERS	14,500	15,870	17,230	18,640	19,030	8.0%	3
64	Fringe - Other	2055	0	16,227	Budget	\$16,227	Inflation	16,570	16,920	17,280	17,640	18,010	2.1%	
65	All Other Expenses	2055	0	208,100	Budget	\$208,100	Inflation	212,470	216,930	221,490	226,140	230,890	2.1%	
66	Customer Service	2060												
67	Salary - Full Time	2060	464,764	485,985	Budget	\$485,985	Inflation	496,190	506,610	517,250	528,110	539,200	2.1%	5
68	Salary - Other	2060	20,158	20,373	Budget	\$20,373	Inflation	20,800	21,240	21,690	22,150	22,620	2.1%	
69	PERS	2060	99,720	117,652	Budget	\$117,652	PERS	131,490	143,880	156,210	169,000	172,540	8.0%	
70	Fringe - Other	2060	126,688	157,853	Budget	\$157,853	Inflation	161,170	164,550	168,010	171,540	175,140	2.1%	
71	All Other Expenses	2060	27,960	56,100	Budget	\$56,100	Inflation	57,280	58,480	59,710	60,960	62,240	2.1%	
72	Billing	2070												
73	Salary - Full Time	2070	111,426	130,183	Budget	\$130,183	Infl, Cust Growth	134,250	138,440	142,760	147,220	151,810	3.1%	7
74	Salary - Other	2070	22	5,815	Budget	\$5,815	Infl, Cust Growth	6,000	6,190	6,380	6,580	6,790	3.1%	7
75	PERS	2070	24,306	30,108	Budget	\$30,108	PERS	35,580	39,320	43,110	47,110	48,580	10.0%	3
76	Fringe - Other	2070	22,370	27,205	Budget	\$27,205	Infl, Cust Growth	28,050	28,930	29,830	30,760	31,720	3.1%	7
77	All Other Expenses	2070	518,666	599,400	Budget	\$599,400	Infl, Cust Growth	618,110	637,400	657,290	677,800	698,950	3.1%	7
78	Cashiering	2080												
79	Salary - Full Time	2080	177,132	193,922	Budget	\$193,922	Inflation	197,990	202,150	206,400	210,730	215,160	2.1%	
80	Salary - Other	2080	82	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
81	PERS	2080	37,052	46,946	Budget	\$46,946	PERS	52,470	57,410	62,330	67,430	68,850	8.0%	
82	Fringe - Other	2080	37,346	43,494	Budget	\$43,494	Inflation	44,410	45,340	46,290	47,260	48,250	2.1%	
83	All Other Expenses	2080	16,890	21,300	Budget	\$21,300	Inflation	21,750	22,210	22,680	23,160	23,650	2.1%	
84	Field and Meter Services	2090												
85	Salary - Full Time	2090	605,836	654,157	Budget	\$654,157	Inflation	667,890	681,920	696,240	710,860	725,790	2.1%	
86	Salary - Other	2090	5,834	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
87	PERS	2090	128,724	158,365	Budget	\$158,365	PERS	176,990	193,670	210,260	227,480	232,250	8.0%	
88	Fringe - Other	2090	170,276	210,119	Budget	\$210,119	Inflation	214,530	219,040	223,640	228,340	233,140	2.1%	
89	All Other Expenses	2090	25,924	30,700	Budget	\$30,700	Inflation	31,340	32,000	32,670	33,360	34,060	2.1%	
90	General Administration Expense	2510												
91	Salary - Full Time	2510	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
92	Fringe - Other	2510	1,686,135	1,840,000	Budget	\$1,840,000	Inflation	1,878,640	1,918,090	1,958,370	1,999,500	2,041,490	2.1%	
93	Office Rent/Expenses	2510	240,700	246,500	Budget	\$246,500	Inflation	251,680	256,970	262,370	267,880	273,510	2.1%	
94	Professional Services	2510	357,194	378,400	Budget	\$378,400	Inflation	386,350	394,460	402,740	411,200	419,840	2.1%	
95	Franchise Fees	2510		2,188,000	Budget	\$2,188,000	None	2,188,000	2,188,000	2,188,000	2,188,000	2,188,000	0.0%	
96	All Other Expenses	2510	2,636,949	1,352,600	Budget	\$1,352,600	Inflation	1,381,000	1,410,000	1,439,610	1,469,840	1,500,710	2.1%	8
97	Uncollectible Charge Offs	2510	0	150,000	Budget	\$150,000	Inflation	153,150	156,370	159,650	163,000	166,420	2.1%	
98	OH Property Plant, Equipment	2510		(270,000)	Budget	(\$270,000)	Inflation	(275,670)	(281,460)	(287,370)	(293,400)	(299,560)	n/a	
99	Capital Labor	2510		(512,000)	Budget	(\$512,000)	Inflation	(522,750)	(533,730)	(544,940)	(556,380)	(568,060)	n/a	
100	Subtotal Administrative Division		\$10,934,947	\$13,137,924	Budget	\$13,137,924	Inflation	\$13,457,880	\$13,767,720	\$14,082,410	\$14,405,450	\$14,673,620	2.2%	
101														
102	Water Utility Division													
103	Water Utility Administration	3010												
104	Salary - Full Time	3010	\$235,390	\$247,340	Budget	\$247,340	Inflation	\$252,530	\$257,830	\$263,240	\$268,770	\$274,410	2.1%	

TABLE A-4
 City of San Bernardino Municipal Water Department - Water Rate Model
 Historical and Projected Operation and Maintenance Expenses

Line	Section	Section Number	Proj. Actual	Budgeted	FY 15/16	Projected	Escalation (2)	Projected				FY 15/16 - FY 20/21	Notes	
			FY 14/15 (1)	FY 15/16 (1)	Basis	FY 15/16	Basis	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21		Annual Growth
105	Salary - Other	3010	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
106	PERS	3010	49,128	59,878	Budget	\$59,878	PERS	66,920	73,220	79,500	86,010	87,810	8.0%	
107	Fringe - Other	3010	23,494	27,686	Budget	\$27,686	Inflation	28,270	28,860	29,470	30,090	30,720	2.1%	
108	All Other Expenses	3010	260,748	274,000	Budget	\$274,000	Inflation	279,750	285,620	291,620	297,740	303,990	2.1%	9
109	Distribution Administration	3020												
110	Salary - Full Time	3020	237,372	280,186	Budget	\$280,186	Inflation	286,070	292,080	298,210	304,470	310,860	2.1%	
111	Salary - Other	3020	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
112	PERS	3020	49,832	67,830	Budget	\$67,830	PERS	75,810	82,950	90,060	97,430	99,480	8.0%	
113	Fringe - Other	3020	64,594	80,073	Budget	\$80,073	Inflation	81,750	83,470	85,220	87,010	88,840	2.1%	
114	All Other Expenses	3020	23,532	19,700	Budget	\$19,700	Inflation	20,110	20,530	20,960	21,400	21,850	2.1%	
115	Distribution Service and Repair	3021												
116	Salary - Full Time	3021	883,794	1,000,522	Budget	\$1,000,522	Inflation	1,021,530	1,042,980	1,064,880	1,087,240	1,110,070	2.1%	
117	Salary - Other	3021	131,800	100,000	Budget	\$100,000	Inflation	102,100	104,240	106,430	108,670	110,950	2.1%	
118	PERS	3021	187,242	242,216	Budget	\$242,216	PERS	270,710	296,210	321,590	347,920	355,220	8.0%	3
119	Fringe - Other	3021	212,966	280,276	Budget	\$280,276	Inflation	286,160	292,170	298,310	304,570	310,970	2.1%	
120	All Other Expenses	3021	846,091	803,600	Budget	\$803,600	Inflation	820,480	837,710	855,300	873,260	891,600	2.1%	
121	Distribution Maintenance	3023												
122	Salary - Full Time	3023	851,172	969,235	Budget	\$969,235	Inflation	989,590	1,010,370	1,031,590	1,053,250	1,075,370	2.1%	
123	Salary - Other	3023	41,800	30,000	Budget	\$30,000	Inflation	30,630	31,270	31,930	32,600	33,280	2.1%	
124	PERS	3023	183,168	234,642	Budget	\$234,642	PERS	262,240	286,950	311,540	337,040	344,120	8.0%	3
125	Fringe - Other	3023	176,434	237,172	Budget	\$237,172	Inflation	242,150	247,240	252,430	257,730	263,140	2.1%	
126	All Other Expenses	3023	682,234	673,300	Budget	\$673,300	Inflation	687,440	701,880	716,620	731,670	747,040	2.1%	
127	Water Loss Management	3024												
128	Salary - Full Time	3024	0	80,885	Budget	\$80,885	Inflation	82,580	84,310	86,080	87,890	89,740	2.1%	
129	Salary - Other	3024	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
130	PERS	3024	0	19,581	Budget	\$19,581	PERS	21,880	23,940	26,000	28,120	28,720	8.0%	3
131	Fringe - Other	3024	0	30,773	Budget	\$30,773	Inflation	31,420	32,080	32,750	33,440	34,140	2.1%	
132	All Other Expenses	3024	0	256,000	Budget	\$256,000	Inflation	10,000	10,000	10,000	10,000	10,000	-47.7%	6
133	Water Administration	3040												
134	Salary - Full Time	3040	216,140	215,606	Budget	\$215,606	Inflation	220,130	224,750	229,470	234,290	239,210	2.1%	
135	Salary - Other	3040	0	0	Budget	\$0	Inflation	0	0	0	0	0	n/a	
136	PERS	3040	44,718	52,196	Budget	\$52,196	PERS	58,330	63,830	69,300	74,970	76,550	8.0%	3
137	Fringe - Other	3040	38,474	56,876	Budget	\$56,876	Inflation	58,070	59,290	60,540	61,810	63,110	2.1%	
138	All Other Expenses	3040	12,940	22,500	Budget	\$22,500	Inflation	22,970	23,450	23,940	24,440	24,950	2.1%	
139	Production and Treatment	3041												
140	Utilities - Electric (Account)	3041	4,487,026	4,250,000	Budget	\$4,250,000	Infl. Consumption	4,382,640	4,519,420	4,660,470	4,805,920	4,955,910	3.1%	10
141	Granular Activated Carbon (Account)	3041	1,037,910	420,000	Budget	\$420,000	Cnsmtpt,CarbonInfl	436,930	454,540	472,860	491,920	511,740	4.0%	10, 11
142	Ion Exchange Resin	3041	40,000	0	Budget	\$0								
143	Supplemental Water	3041	250,000	1,100,000	Budget	\$1,100,000	Table A8	1,426,361	1,833,522	2,248,683	2,538,367	2,563,750	18.4%	12
144	Other Accounts	3041	496,786	484,200	Budget	\$484,200	Inflation	494,370	504,750	515,350	526,170	537,220	2.1%	
145	Salary - Full Time	3041	847,152	854,719	Budget	\$854,719	Inflation	872,670	891,000	909,710	928,810	948,320	2.1%	
146	Salary - Other	3041	24,106	20,000	Budget	\$20,000	Inflation	20,420	20,850	21,290	21,740	22,200	2.1%	
147	PERS	3041	182,642	206,919	Budget	\$206,919	PERS	231,260	253,040	274,730	297,220	303,460	8.0%	3
148	Fringe - Other	3041	209,230	249,943	Budget	\$249,943	Inflation	255,190	260,550	266,020	271,610	277,310	2.1%	
149	Plant and Facility Maintenance	3042												
150	Salary - Full Time	3042	343,662	425,921	Budget	\$425,921	Inflation	434,870	444,000	453,320	462,840	472,560	2.1%	
151	Salary - Other	3042	840	1,500	Budget	\$1,500	Inflation	1,530	1,560	1,590	1,620	1,650	1.9%	
152	PERS	3042	73,940	103,111	Budget	\$103,111	PERS	115,240	126,100	136,900	148,110	151,220	8.0%	3
153	Fringe - Other	3042	91,988	107,310	Budget	\$107,310	Inflation	109,560	111,860	114,210	116,610	119,060	2.1%	
154	Electrical Services	3042	205,030	250,000	Budget	\$250,000	Inflation	255,250	260,610	266,080	271,670	277,380	2.1%	
155	All Other Expenses	3042	142,264	274,500	Budget	\$274,500	Inflation	280,260	286,150	292,160	298,300	304,560	2.1%	
156	Specialty Construction	3043												

TABLE A-4
 City of San Bernardino Municipal Water Department - Water Rate Model
 Historical and Projected Operation and Maintenance Expenses

Line	Section	Section Number	Proj. Actual	Budgeted	FY 15/16	Projected	Escalation (2)	Projected				FY 15/16 - FY 20/21	Notes	
			FY 14/15 (1)	FY 15/16 (1)	Basis	FY 15/16	Basis	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21		Annual Growth
157	Salary - Full Time	3043	328,020	394,657	Budget	\$394,657	Inflation	402,940	411,400	420,040	428,860	437,870	2.1%	
158	Salary - Other	3043	226	1,500	Budget	\$1,500	Inflation	1,530	1,560	1,590	1,620	1,650	1.9%	
159	PERS	3043	68,702	95,543	Budget	\$95,543	PERS	106,780	116,840	126,850	137,240	140,120	8.0%	
160	Fringe - Other	3043	81,274	111,365	Budget	\$111,365	Inflation	113,700	116,090	118,530	121,020	123,560	2.1%	
161	All Other Expenses	3043	58,476	80,000	Budget	\$80,000	Inflation	81,680	83,400	85,150	86,940	88,770	2.1%	
162	Engineering	3060												
163	Salary - Full Time	3060	721,534	790,631	Budget	\$790,631	Inflation	807,230	824,180	841,490	859,160	877,200	2.1%	5
164	Salary - Other	3060	6,736	6,218	Budget	\$6,218	Inflation	6,350	6,480	6,620	6,760	6,900	2.1%	
165	PERS	3060	155,746	191,404	Budget	\$191,404	Inflation	195,420	199,520	203,710	207,990	212,360	2.1%	
166	Fringe - Other	3060	111,410	137,304	Budget	\$137,304	Inflation	140,190	143,130	146,140	149,210	152,340	2.1%	
167	All Other Expenses	3060	176,350	268,500	Budget	\$268,500	Inflation	274,140	279,900	285,780	291,780	297,910	2.1%	
168	Quality and Backflow	3063												
169	Salary - Full Time	3063	400,246	558,914	Budget	\$558,914	Inflation	570,650	582,630	594,870	607,360	620,110	2.1%	
170	Salary - Other	3063	3,334	4,600	Budget	\$4,600	Inflation	4,700	4,800	4,900	5,000	5,110	2.1%	
171	PERS	3063	81,260	135,307	Budget	\$135,307	PERS	151,220	165,470	179,650	194,360	198,440	8.0%	3
172	Fringe - Other	3063	83,456	142,346	Budget	\$142,346	Inflation	145,340	148,390	151,510	154,690	157,940	2.1%	
173	All Other Expenses	3063	423,794	416,300	Budget	\$416,300	Inflation	425,040	433,970	443,080	452,380	461,880	2.1%	
174	Subtotal, Water Utility Division		\$16,586,203	\$18,444,785		\$18,444,785		\$19,053,081	\$19,982,942	\$20,930,263	\$21,767,107	\$22,254,640	3.8%	
175														
176	Water Reclamation Division													
177	Electrical, Instrumentation, and SCADA	4042												
178	Salary - Full Time	4042	\$292,946	\$373,880	Budget	\$373,880	Inflation	\$381,730	\$389,750	\$397,930	\$406,290	\$414,820	2.1%	
179	Salary - Other	4042	7,952	12,383	Budget	\$12,383	Inflation	12,640	12,910	13,180	13,460	13,740	2.1%	
180	PERS	4042	61,998	90,513	Budget	\$90,513	PERS	101,160	110,690	120,170	130,010	132,740	8.0%	
181	Fringe - Other	4042	60,936	87,384	Budget	\$87,384	Inflation	89,220	91,090	93,000	94,950	96,940	2.1%	
182	All Other Expenses	4042	12,658	18,000	Budget	\$18,000	Inflation	18,380	18,770	19,160	19,560	19,970	2.1%	
183	Subtotal, Water Reclamation Division		\$436,490	\$582,160		\$582,160		\$603,130	\$623,210	\$643,440	\$664,270	\$678,210	3.1%	
184														
185	Adjustment for Vacancies					(\$1,480,000)		(\$1,110,000)	(\$600,000)	(\$600,000)	(\$600,000)	(\$600,000)	n/a	13
186														
187	Total, O&M Expenses		\$27,957,640	\$32,164,869		\$30,684,869		\$32,004,091	\$33,773,872	\$35,056,113	\$36,236,827	\$37,006,470	3.8%	
188														
189	Total O&M Expenses Less Supplemental Water Purchases							\$30,577,730	\$31,940,350	\$32,807,430	\$33,698,460	\$34,442,720	n/a	

Line	Section	Section Number	Proj. Actual	Budgeted	Projected	Projected				FY 15/16 - FY 20/21			
			FY 14/15 (1)	FY 15/16 (1)	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	Annual Growth		
190	Administration Division												
191	Board of Water Commissioners	1010	\$46,421	\$59,300	\$59,300	\$60,540	\$61,800	\$63,100	\$64,420	\$65,780	2.1%		
192	Administration	1050	236,562	516,297	\$516,297	530,280	544,080	558,080	572,420	584,440	2.5%		
193	Administration Services	1055	152,402	188,708	\$188,708	195,800	202,570	209,380	216,400	220,940	3.2%		
194	Environmental and Regulatory Compliance	1060	393,736	573,245	\$573,245	592,210	610,500	628,980	647,970	661,570	2.9%		
195	Human Resources	1070	120,542	196,551	\$196,551	203,270	209,730	216,260	222,970	227,650	3.0%		
196	Finance	2010	549,868	607,799	\$607,799	627,550	646,640	665,930	685,760	700,150	2.9%		
197	Information Technology	2030	833,402	852,278	\$852,278	876,220	899,740	923,590	948,040	967,950	2.6%		
198	Purchasing, Warehouse & Fleet	2040	226,088	340,022	\$340,022	351,540	362,620	373,820	385,310	393,400	3.0%		
199	Fleet	2045	684,384	962,542	\$962,542	985,470	1,008,450	1,031,840	1,055,770	1,077,950	2.3%		
200	Customer Relations	2050	149,388	187,107	\$187,107	200,050	208,520	217,210	226,240	233,310	4.5%		
201	Water Conservation	2055	0	290,898	\$290,898	298,260	305,590	313,040	320,660	327,390	2.4%		
202	Customer Service	2060	739,290	837,963	\$837,963	866,930	894,760	922,870	951,760	971,740	3.0%		
203	Billing	2070	676,790	792,711	\$792,711	821,990	850,280	879,370	909,470	937,850	3.4%		

TABLE A-4
City of San Bernardino Municipal Water Department - Water Rate Model
Historical and Projected Operation and Maintenance Expenses

Line	Section	Section Number	Proj. Actual FY 14/15 (1)	Budgeted FY 15/16 (1)	FY 15/16 Basis	Projected FY 15/16	Escalation (2) Basis	Projected				FY 15/16 - FY 20/21 Annual Growth	Notes	
								FY 16/17	FY 17/18	FY 18/19	FY 19/20			FY 20/21
204	Cashiering	2080	268,502	305,662		\$305,662		316,620	327,110	337,700	348,580	355,910	3.1%	
205	Field and Meter Services	2090	936,594	1,053,341		\$1,053,341		1,090,750	1,126,630	1,162,810	1,200,040	1,225,240	3.1%	
206	General Administration Expense	2510	4,920,978	5,373,500		\$5,373,500		5,440,400	5,508,700	5,578,430	5,649,640	5,722,350	1.3%	
207	Subtotal Administration Division		\$10,934,947	\$13,137,924		\$13,137,924		\$13,457,880	\$13,767,720	\$14,082,410	\$14,405,450	\$14,673,620	2.2%	
208														
209	Water Utility Division													
210	Water Utility Administration	3010	\$568,760	\$608,904		\$608,904		\$627,470	\$645,530	\$663,830	\$682,610	\$696,930	2.7%	
211	Distribution Administration	3020	375,330	447,789		\$447,789		463,740	479,030	494,450	510,310	521,030	3.1%	
212	Distribution Service and Repair	3021	2,261,893	2,426,614		\$2,426,614		2,500,980	2,573,310	2,646,510	2,721,660	2,778,810	2.7%	
213	Distribution Maintenance	3023	1,934,808	2,144,349		\$2,144,349		2,212,050	2,277,710	2,344,110	2,412,290	2,462,950	2.8%	
214	Water Loss Management	3024	0	387,239		\$387,239		145,880	150,330	154,830	159,450	162,600	-15.9%	
215	Water Administration	3040	312,272	347,178		\$347,178		359,500	371,320	383,250	395,510	403,820	3.1%	
216	Production and Treatment	3041	7,574,852	7,585,781		\$7,585,781		8,119,841	8,737,672	9,369,113	9,881,757	10,119,910	5.9%	
217	Plant and Facility Maintenance	3042	857,724	1,162,342		\$1,162,342		1,196,710	1,230,280	1,264,260	1,299,150	1,326,430	2.7%	
218	Specialty Construction	3043	536,698	683,065		\$683,065		706,630	729,290	752,160	775,680	791,970	3.0%	
219	Engineering	3060	1,171,776	1,394,057		\$1,394,057		1,423,330	1,453,210	1,483,740	1,514,900	1,546,710	2.1%	
220	Quality and Backflow	3063	992,090	1,257,467		\$1,257,467		1,296,950	1,335,260	1,374,010	1,413,790	1,443,480	2.8%	
221	Subtotal, Water Utility Division		\$16,586,203	\$18,444,785		\$18,444,785		\$19,053,081	\$19,982,942	\$20,930,263	\$21,767,107	\$22,254,640	3.8%	
222														
223	Water Reclamation Division													
224	Electrical, Instrumentation, and SCADA	4042	\$436,490	\$582,160		\$582,160		\$603,130	\$623,210	\$643,440	\$664,270	\$678,210	3.1%	
225	Subtotal Water Reclamation Division		\$436,490	\$582,160		\$582,160		\$603,130	\$623,210	\$643,440	\$664,270	\$678,210	3.1%	
226														
227	Adjustment for Vacancies					(\$1,480,000)		(\$1,110,000)	(\$600,000)	(\$600,000)	(\$600,000)	(\$600,000)	n/a	
228														
229	Total, O&M Expenses					\$30,684,869		\$32,004,091	\$33,773,872	\$35,056,113	\$36,236,827	\$37,006,470	3.8%	

Notes:

- (1) Source: City of San Bernardino Municipal Water Department FY 14/15 Budget and FY 15/16 Budget
- (2) Based on discussions with Department staff. In general, the FY 15/16 budget is the basis for projections and most expenses are adjusted only for inflation unless otherwise noted.
- (3) PERS expenses are provided as a percentage of salaries, per CalPERS Actuarial Valuations. See Table A-1 for specific percentages.
- (4) The recent increase in expenses is for consulting and other professional services which Department staff believe will be ongoing.
- (5) Recent change and/or variability in expenses is primarily due to how expenses are allocated between water, sewer, and RIX funds.
- (6) FY 16/17 and beyond costs per Department staff, 03/09/16
- (7) Also escalated for changes in residential customer growth
- (13) FY 14/15 includes non-recurring capital project.
- (14) The majority of this is related to a consent decree and funded by others.
- (15) Expenses also proportional to water consumption
- (16) Activated carbon is expected to escalate at a different rate from the rate of general inflation. See Table A-1.
- (17) Refer to Table A8 for documentation of projected costs. These costs are fully recovered from the Replenishment Fee.
- (18) Vacancies are budgeted positions that are unfilled. As of Dec 2014, there were 41 vacancies out of 282 budgeted Department positions. For the purposes of this analysis, the same amount of vacancies exist as of March 2016. Salary + benefits + PERS costs of vacancies are excluded from the 15/16 projections. For FY 16/17, 25% of the vacancies are filled. In other years, there are assumed to always be eight vacant positions at \$75K/position/year.

TABLE A-5
City of San Bernardino Municipal Water Department - Water Rate Model
Capital Improvement Plan Funding

Line	Capital Expenditure Category	FY 15/16-20/21						Total	Notes
		FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21		
1	Total Capital Expenditures, FY 15/16 Dollars								1
2	Replacement/Rehabilitation Assets	\$4,142,000	\$7,352,000	\$11,312,000	\$9,047,000	\$5,537,000	\$2,047,000	\$39,437,000	
3	New System Assets	3,457,000	5,045,000	395,000	4,045,000	395,000	5,895,000	19,232,000	
4	Generators	0	300,000	300,000	300,000	300,000	0	1,200,000	
5	Rolling Stock	145,000	145,000	330,000	0	0	0	620,000	
6	Pipeline Construction Crew		500,000	500,000	500,000	500,000	500,000	2,500,000	2
7	Operating Budget Capital Expenditures								
8	Section 2030: Information Technology	400,000	400,000	400,000	400,000	400,000	400,000	2,400,000	3
9	Section 2045: Fleet	190,000	190,000	190,000	190,000	190,000	190,000	1,140,000	3
	Section 3024: Water Loss Management	26,500	26,500	26,500	26,500	26,500	26,500	159,000	
10	Section 2510: OH Property, Plant, Equipment	270,000	270,000	270,000	270,000	270,000	270,000	1,620,000	3
11	Section 2510: Capital Labor	512,000	512,000	512,000	512,000	512,000	512,000	3,072,000	3
12	Subtotal, Capital Expenditures, FY 15/16 Dollars	\$9,142,500	\$14,740,500	\$14,235,500	\$15,290,500	\$8,130,500	\$9,840,500	\$71,380,000	
13									
14	Total Capital Expenditures, Inflation Adjusted Dollars								
15	Replacement/Rehabilitation Assets	\$4,142,000	\$7,506,000	\$11,792,000	\$9,629,000	\$6,017,000	\$2,271,000	\$41,357,000	
16	New System Assets	3,457,000	5,151,000	412,000	4,305,000	429,000	6,541,000	20,295,000	
17	Generators	0	306,000	313,000	319,000	326,000	0	1,264,000	
18	Rolling Stock	145,000	148,000	344,000	0	0	0	637,000	
19	Pipeline Construction Crew	0	511,000	521,000	532,000	543,000	555,000	2,662,000	
20	Operating Budget Capital Expenditures								
21	Section 2030: Information Technology	400,000	408,000	417,000	426,000	435,000	444,000	2,530,000	3
22	Section 2045: Fleet	190,000	194,000	198,000	202,000	206,000	211,000	1,201,000	3
	Section 3024: Water Loss Management	26,500	27,000	28,000	28,000	29,000	29,000	167,500	
23	Section 2510: OH Property, Plant, Equipment	270,000	276,000	281,000	287,000	293,000	300,000	1,707,000	3
24	Section 2510: Capital Labor	512,000	523,000	534,000	545,000	556,000	568,000	3,238,000	3
25	Subtotal, Capital Expenditures, Inflation Adjusted Dollars	\$9,142,500	\$15,050,000	\$14,840,000	\$16,273,000	\$8,834,000	\$10,919,000	\$75,058,500	
26									
27	Debt Funded Capital								
28	CIEDB		\$10,000,000		\$10,000,000			\$20,000,000	4
29	Future Revenue Bond or Private Placement Debt	0	0	13,000,000	4,000,000	7,000,000	8,000,000	32,000,000	5
30	Subtotal: Debt Funded Capital	\$0	\$10,000,000	\$13,000,000	\$14,000,000	\$7,000,000	\$8,000,000	\$52,000,000	
31									
32	Rate/Reserve Funded Capital								
33	Capital Improvement Plan	\$7,744,000	\$3,622,000	\$382,000	\$785,000	\$315,000	\$1,367,000	\$14,215,000	
34	Operating Budget Capital Expenditures	\$1,398,500	\$1,428,000	\$1,458,000	\$1,488,000	\$1,519,000	\$1,552,000	\$8,843,500	
35									
36	Total Capital Improvement Funding	\$9,142,500	\$15,050,000	\$14,840,000	\$16,273,000	\$8,834,000	\$10,919,000	\$75,058,500	1

Notes:

- (1) Source: Department staff, provided 02/08/16. Excludes projects funded by other agencies and projects funded by developers.
Per direction from Department, also excludes certain Pipeline Replacement and Reservoir Seismic Upgrades which will be deferred from the schedule shown in the 2/8/16 CIP. No funding for the Administration Facility is included.
- (2) This is to hire an in-house construction crew of 7 FTEs to reduce construction costs for certain pipeline construction projects. Staff to be hired during FY 15/16.
- (3) There are capital outlays in the Department's Operating Budget that are separate, and in addition to, capital outlays in the Department's Capital Improvement Plan.
- (4) The Department anticipates being able to receive \$10,000,000 in CIEDB loans in FY 16/17 and FY 18/19.
- (5) Debt issuances are sized to balance rate increases, coverage requirements, and reserve requirements. 69% of CIP = debt funded

TABLE A-6
City of San Bernardino Municipal Water Department - Water Rate Model
Existing and Future Debt Service

Line	Existing Debt Service	Type of Payment	Projected					Notes	
			FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20		FY 20/21
1	2002 CIEDB	Principal	\$594,440	\$614,290	\$634,810	\$656,010	\$677,930	incl. in total	1
2	2007 CIEDB	Principal	492,780	506,130	519,850	533,940	548,400	incl. in total	1
3	2012 CIEDB	Principal	435,110	446,470	458,120	470,080	482,350	incl. in total	1
4	2002 CIEDB	Interest/Annual Fee	\$153,710	\$133,850	\$113,340	\$92,138	\$70,218	incl. in total	1
5	2007 CIEDB	Interest/Annual Fee	179,754	166,219	152,317	138,060	123,600	incl. in total	1
6	2012 CIEDB	Interest/Annual Fee	233,468	221,963	210,158	197,920	185,650	incl. in total	1
7	SBVMWD Note Payable	Principal and Interest	229,227	229,227	0	0	0	incl. in total	1
8	Total, Existing Debt Service		\$2,318,489	\$2,318,149	\$2,088,595	\$2,088,148	\$2,088,148		
9									
10	Debt Service For Use in DSCR Calculations		\$2,089,262	\$2,088,922	\$2,088,595	\$2,088,148	\$2,088,148		2

Line	Proposed Debt Service	Issue Date	Amount	Interest Rate	Total Principal and Interest Payment							
					FY 14/15	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	
11	CIEDB	16/17	\$10,000,000	3.5%			773,200	773,200	773,200	773,200	773,200	3
12	CIEDB	18/19	\$10,000,000	3.5%					781,790	781,790	781,790	3
13	Revenue Bond/Private Placement	16/17	\$0	6.0%			0	0	0	0	0	3
14	Revenue Bond/Private Placement	17/18	\$13,000,000	6.0%			1,035,000	1,035,000	1,035,000	1,035,000	1,035,000	3
15	Revenue Bond/Private Placement	18/19	\$4,000,000	6.0%				318,460	318,460	318,460	318,460	3
16	Revenue Bond/Private Placement	19/20	\$7,000,000	6.0%					557,310	557,310	557,310	3
17	Revenue Bond/Private Placement	20/21	\$8,000,000	6.0%							636,920	3
18	Total				\$0	\$773,200	\$1,808,200	\$2,908,450	\$3,465,760	\$4,102,680		

TABLE A-7
City of San Bernardino Municipal Water Department - Water Rate Model
Projected Operating Statement - Cash Basis

Line	Projected						Notes	
	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21		
1	SOURCES OF FUNDS							
2	Beginning Fund Balance (Restricted and Unrestricted)						1	
3		\$3,783,070	\$3,945,710	\$4,163,900	\$4,321,990	\$4,467,550		
4		360,759	0	0	0	0	2	
5	17,789,720	2,257,772	672,715	845,338	1,697,383	3,695,496	3	
6		1,519,600	0	0	0	0	4	
7		30,146	2,289	12,037	35,990	42,411	5	
8		\$17,789,720	\$7,951,348	\$4,620,713	\$5,021,275	\$6,055,363	\$8,205,457	
9								
10		\$22,873,518	\$23,096,773	\$23,322,263	\$23,550,003	\$23,780,026	\$24,012,347	
11								
12	Revenues from Water Rate Increases						6	
13								
14	Year	% of Regular Water Sales Rev.	Months Effective					
15	FY 15/16	0.0%	12.0	\$0	\$0	\$0	\$0	
16	FY 16/17	9.5%	12.0	\$2,194,190	\$2,215,610	\$2,237,250	\$2,259,100	
17	FY 17/18	9.5%	12.0		\$2,426,100	\$2,449,790	\$2,473,720	
18	FY 18/19	9.5%	12.0			\$2,682,520	\$2,708,720	
19	FY 19/20	5.5%	12.0				\$1,717,190	
20	FY 20/21	5.5%	12.0				\$1,829,330	
21	Subtotal, Revenues from Water Rate Increases			\$0	\$2,194,190	\$4,641,710	\$7,369,560	
22								
23	Other Water Sales Revenues							
24	Conservation Charge	1,140,000	1,613,053	1,629,180	1,645,470	1,661,920	1,678,540	7
25	Elevation Charge	2,036,160	2,056,522	2,077,085	2,097,857	2,118,838	2,140,027	8
26	Replenishment Fee	1,155,468	1,426,361	1,833,522	2,248,683	2,538,367	2,563,750	9
27	Other	674,600	729,250	733,940	738,680	743,470	748,300	10
28	Other Operating Revenue	1,591,950	1,991,080	2,000,410	2,009,930	2,019,650	2,029,580	10
29	Other Non-Operating Revenue, Excluding Interest	2,480,000	3,571,500	3,603,660	3,636,500	3,670,030	3,704,260	10
30	Interest Income	355,790	159,030	92,410	100,430	121,110	164,110	11
31								
32	Total Revenue	\$32,307,486	\$36,837,758	\$39,934,179	\$43,397,113	\$45,812,140	\$48,118,434	
33								
34	Debt Proceeds	0	10,000,000	13,000,000	14,000,000	7,000,000	8,000,000	12
35								
36	Total Sources of Funds	\$50,097,206	\$54,789,105	\$57,554,893	\$62,418,388	\$58,867,503	\$64,323,891	

TABLE A-7
City of San Bernardino Municipal Water Department - Water Rate Model
Projected Operating Statement - Cash Basis

Notes:

- (1) FY 15/16 beginning of year Fund Balance from FY 14/15 CAFR, page 14.
- (2) This reserve is funded as funds allow. In this rate study, it is given the lowest priority among the various reserve accounts.
- (3) Accumulation of this reserve phased in over a ten-year period. FY 15/16 is year 4 of 10. In this rate study, reserves are funded as funds allow and given the highest priority for funding other than the operating reserve
- (4) This reserve is funded as funds allow but is not funded in the course of this rate study.
- (5) Unencumbered Reserves are used in this rate study to show reserves that remain after all four reserve accounts are funded
- (6) Includes Regular Water Sales (Minimum Monthly Charge and Commodity Charge) and Municipal Water Sales
- (7) Projected Conservation Charge revenues include the proposed increased charge shown in Table A-ξ
- (8) No change in the Elevation Charges are proposed.
- (9) Refer to Table A-8 for recalculated Replenishment Fee.
- (10) Refer to Table A-3 for more detail on these revenues.
- (11) For rate setting purposes, assumed to be 2% per year on the beginning year fund balance.
- (12) Refer to Table A-5 and Table A-6. Debt financed amounts calculated by FG Solutions to minimize rate increases while meeting reserve and coverage requirements
All new debt assumed to be issued on par with existing debt.

TABLE A-7
City of San Bernardino Municipal Water Department - Water Rate Model
Projected Operating Statement - Cash Basis

Line	Projected						Notes
	FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	
37	USES OF FUNDS						
38	\$30,684,869	\$32,004,091	\$33,773,872	\$35,056,113	\$36,236,827	\$37,006,470	
39	Debt Service						
40	\$2,318,489	\$2,318,149	\$2,088,595	\$2,088,148	\$2,088,148	\$2,088,148	
41	\$0	\$796,152	\$1,831,151	\$2,945,764	\$3,503,071	\$4,139,993	
42							
43	\$9,142,500	\$15,050,000	\$14,840,000	\$16,273,000	\$8,834,000	\$10,919,000	
44							
45	\$42,145,858	\$50,168,392	\$52,533,617	\$56,363,026	\$50,662,046	\$54,153,611	
46							
47							
48	FINANCIAL PERFORMANCE INDICATORS						
49	EOY Reserve Balance (Target in Parentheses)						
50	\$3,783,070	\$3,945,710	\$4,163,900	\$4,321,990	\$4,467,550	\$4,562,440	1
51	360,759	0	0	0	0	0	2
52	2,257,772	672,715	845,338	1,697,383	3,695,496	5,566,475	3
53	1,519,600	0	0	0	0	0	4
54	30,146	2,289	12,037	35,990	42,411	41,366	5
55	\$7,951,348	\$4,620,713	\$5,021,275	\$6,055,363	\$8,205,457	\$10,170,280	
56							
57	Debt Service Coverage Ratio						
58	\$32,307,486	\$36,837,758	\$39,934,179	\$43,397,113	\$45,812,140	\$48,118,434	
59	(30,684,869)	(32,004,091)	(33,773,872)	(35,056,113)	(36,236,827)	(37,006,470)	
60	\$1,622,617	\$4,833,667	\$6,160,307	\$8,341,000	\$9,575,313	\$11,111,964	
61							
62	\$2,089,262	\$2,885,074	\$3,919,746	\$5,033,912	\$5,591,219	\$6,228,141	
63							
64	0.78	1.68	1.57	1.66	1.71	1.78	
65	1.75	1.75	1.75	1.75	1.75	1.75	

TABLE A-8
City of San Bernardino Municipal Water Department - Water Rate Model
Rate Design Calculations

Proposed Rate Design Change: Adjust Conservation Charge

1
2 Methodology: compile costs associated with providing seasonal peaking water as listed below. Divide by 2nd tier water use to generate the
3 Conservation Charge. The calculation is based on FY 13/14 water use patterns. This is
4 conservative - meaning that the \$/hcf Conservation Charge is lower than it would be if it were based on FY 15/16
5 water use patterns. Therefore, the Conservation Charge would be defensible even if water use returned to the patterns
6 observed during FY 13/14. Note that in this analysis, the terms Conservation Charge and 2nd Tier Charge are used interchangeably.
7
8

9 **Step 1. Compile Water Use Data**

10 **FY 13/14 Detail, 2nd Tier hcf (Compiled by FG Solutions based analysis of Department's FY 13/14 water consumption data)**

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
13 ASSESSMENT DIST	0	0	0	0	0	0	0	0	0	0	0	0
14 CAP REBATE	0	0	0	0	0	0	0	0	0	0	0	0
15 COLTON-INTERTIE	0	0	0	0	0	0	0	0	0	0	0	0
16 COMMERCIAL/LAND/LT. INDST	67,440	63,309	66,197	46,705	23,839	11,842	18,791	16,431	8,147	16,345	28,541	42,656
17 EDUCATION-PUBLIC	43,168	53,568	48,872	42,562	21,387	9,318	7,610	10,580	7,637	10,223	27,033	41,619
18 GOLF COURSE	28,472	26,726	22,246	18,976	11,158	3,851	12,044	7,308	8,288	10,532	19,240	24,491
19 HYDRANT	0	0	0	0	0	0	0	0	0	0	0	0
20 INTERTIE-NO CONSUMPTION	0	0	0	0	0	0	0	0	0	0	0	0
21 INTERTIE-WITH CONSUMPTION	0	0	0	0	0	0	0	0	0	0	0	0
22 MULTI-FAMILY	31,582	33,467	35,303	23,386	14,904	7,525	11,207	8,970	6,634	7,302	13,043	23,515
23 MULTI-FAMILY 2 UNIT (WA)	5,524	6,060	7,925	4,219	3,258	2,037	3,080	2,271	1,964	1,791	2,498	4,490
24 MUNICIPAL	0	0	0	0	0	0	0	0	0	0	0	0
25 NON RESIDENTIAL	93,132	87,356	100,436	74,084	123,723	98,422	65,299	56,603	53,621	50,098	62,348	76,501
26 RESIDENTIAL-SINGLE FAMILY	214,919	198,468	205,270	117,886	70,599	36,013	74,406	43,224	28,655	43,116	96,450	162,434
27 WATER DEPARTMENT RATE	0	0	0	0	0	0	0	0	0	0	0	0
28 WATER-COUNTY HOSPITAL	0	0	0	0	0	0	0	0	0	0	0	0
29 WEST VALLEY INTERTIE	0	0	0	0	0	0	0	0	0	0	0	0
30 Total	484,237	468,954	486,249	327,818	268,868	169,008	192,437	145,387	114,946	139,407	249,153	375,706

32 **Projected FY 15/16, 2nd Tier hcf (Calculated by FG Solutions based on an analysis of Department's FY 13/14 water consumption data)**

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
34 ASSESSMENT DIST	0	0	0	0	0	0	0	0	0	0	0	0
35 CAP REBATE	0	0	0	0	0	0	0	0	0	0	0	0
36 COLTON-INTERTIE	0	0	0	0	0	0	0	0	0	0	0	0
37 COMMERCIAL/LAND/LT. INDST	35,049	31,655	34,474	22,092	9,558	4,531	7,737	6,942	2,965	6,737	13,061	20,168
38 EDUCATION-PUBLIC	26,603	33,498	29,509	25,501	12,791	5,510	4,525	6,716	4,663	6,118	15,485	24,245
39 GOLF COURSE	20,085	18,828	15,603	13,248	7,619	2,358	8,257	4,847	5,553	7,169	13,438	17,219
40 HYDRANT	0	0	0	0	0	0	0	0	0	0	0	0
41 INTERTIE-NO CONSUMPTION	0	0	0	0	0	0	0	0	0	0	0	0
42 INTERTIE-WITH CONSUMPTION	0	0	0	0	0	0	0	0	0	0	0	0
43 MULTI-FAMILY	13,091	14,729	15,125	9,030	4,246	2,164	3,592	2,533	2,166	2,298	3,903	7,913
44 MULTI-FAMILY 2 UNIT (WA)	1,925	2,301	3,197	1,719	1,363	846	1,267	920	768	657	770	1,498
45 MUNICIPAL	0	0	0	0	0	0	0	0	0	0	0	0
46 NON RESIDENTIAL	52,809	48,808	56,566	40,751	77,201	61,342	36,025	31,133	29,429	28,049	34,013	42,567
47 RESIDENTIAL-SINGLE FAMILY	80,066	73,188	75,194	41,971	25,371	12,126	26,767	14,778	9,436	13,932	32,404	58,349
48 WATER DEPARTMENT RATE	0	0	0	0	0	0	0	0	0	0	0	0
49 WATER-COUNTY HOSPITAL	0	0	0	0	0	0	0	0	0	0	0	0
50 WEST VALLEY INTERTIE	0	0	0	0	0	0	0	0	0	0	0	0
51 Total	229,629	223,006	229,668	154,313	138,149	88,878	88,170	67,870	54,980	64,959	113,074	171,959

52

TABLE A-8
City of San Bernardino Municipal Water Department - Water Rate Model
Rate Design Calculations

FY 13/14 Detail, Total (Compiled by FG Solutions based analysis of Department's FY 13/14 water consumption data)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
ASSESSMENT DIST	35,997	36,132	37,845	33,293	27,728	16,708	19,066	20,361	12,279	15,977	21,257	26,833
CAP REBATE	9,934	9,475	10,009	7,712	6,349	4,663	6,140	5,579	5,260	5,522	7,354	9,238
COLTON-INTERTIE		0	0		0	0	15		0		0	0
COMMERCIAL/LAND/LT. INDST	187,009	186,515	189,753	160,758	123,341	87,101	95,433	94,885	71,546	92,255	123,080	152,705
EDUCATION-PUBLIC	76,260	89,041	85,544	77,870	49,774	31,199	28,145	30,116	25,767	31,665	59,522	77,837
GOLF COURSE	29,952	28,206	23,726	20,456	12,638	5,331	13,524	8,788	9,768	12,012	20,720	25,971
HYDRANT	9,165	8,916	26,958	14,315	6,597	11,059	11,237	7,050	7,067	5,272	7,186	6,011
INTERTIE-NO CONSUMPTION	23,761	23,573	22,618	19,690	13,996	14,193	12,096	14,223	13,070	6,228	1,781	925
INTERTIE-WITH CONSUMPTION	17	5	55	6	14	15	18	17	15	5	12	20
MULTI-FAMILY	218,200	224,780	224,012	199,810	183,326	152,367	181,101	163,764	154,972	155,317	179,897	207,930
MULTI-FAMILY 2 UNIT (WA)	42,262	42,081	45,563	35,545	31,454	25,713	30,144	28,276	26,463	26,467	32,516	39,212
MUNICIPAL	79,155	74,522	76,978	72,126	53,519	35,359	38,728	32,988	28,719	33,104	57,692	67,122
NON RESIDENTIAL	236,594	231,624	249,802	211,727	252,854	215,334	187,162	176,576	170,016	165,006	190,084	212,714
RESIDENTIAL-SINGLE FAMILY	1,011,023	978,137	997,447	800,937	659,603	497,502	642,249	560,865	502,830	576,964	758,075	914,093
WATER DEPARTMENT RATE	974	1,250	1,492	1,373	1,000	1,033	1,306	1,154	1,125	1,220	1,399	1,438
WATER-COUNTY HOSPITAL	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY INTERTIE	0	0	0	0	0	0	0	0	0	0	0	0
(blank)												
Grand Total	1,960,303	1,934,257	1,991,802	1,655,618	1,422,193	1,097,577	1,266,364	1,144,642	1,028,897	1,127,014	1,460,575	1,742,049

Projected FY 15/16, Total (Calculated by FG Solutions based on an analysis of Department's FY 13/14 water consumption data)	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
ASSESSMENT DIST	25,918	26,015	27,248	23,971	19,964	12,030	13,728	14,660	8,841	11,503	15,305	19,320
CAP REBATE	7,152	6,822	7,206	5,553	4,571	3,357	4,421	4,017	3,787	3,976	5,295	6,651
COLTON-INTERTIE	0	0	0	0	0	0	11	0	0	0	0	0
COMMERCIAL/LAND/LT. INDST	134,646	134,291	136,622	115,746	88,806	62,713	68,712	68,317	51,513	66,424	88,618	109,948
EDUCATION-PUBLIC	54,907	64,110	61,592	56,066	35,837	22,463	20,264	21,684	18,552	22,799	42,856	56,043
GOLF COURSE	21,565	20,308	17,083	14,728	9,099	3,838	9,737	6,327	7,033	8,649	14,918	18,699
HYDRANT	6,599	6,420	19,410	10,307	4,750	7,962	8,091	5,076	5,088	3,796	5,174	4,328
INTERTIE-NO CONSUMPTION	17,108	16,973	16,285	14,177	10,077	10,219	8,709	10,241	9,410	4,484	1,282	666
INTERTIE-WITH CONSUMPTION	12	4	40	4	10	11	13	12	11	4	9	14
MULTI-FAMILY	157,104	161,842	161,289	143,863	131,995	109,704	130,393	117,910	111,580	111,828	129,526	149,710
MULTI-FAMILY 2 UNIT (WA)	30,429	30,298	32,805	25,592	22,647	18,513	21,704	20,359	19,053	19,056	23,412	28,233
MUNICIPAL	56,992	53,656	55,424	51,931	38,534	25,458	27,884	23,751	20,678	23,835	41,538	48,328
NON RESIDENTIAL	170,348	166,769	179,857	152,443	182,055	155,040	134,757	127,135	122,412	118,804	136,860	153,154
RESIDENTIAL-SINGLE FAMILY	727,937	704,259	718,162	576,675	474,914	358,201	462,419	403,823	362,038	415,414	545,814	658,147
WATER DEPARTMENT RATE	701	900	1,074	989	720	744	940	831	810	878	1,007	1,035
WATER-COUNTY HOSPITAL	0	0	0	0	0	0	0	0	0	0	0	0
WEST VALLEY INTERTIE	0	0	0	0	0	0	0	0	0	0	0	0
(blank)	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1,411,418	1,392,665	1,434,097	1,192,045	1,023,979	790,255	911,782	824,142	740,806	811,450	1,051,614	1,254,275

Step 2. Summarize Water Consumption

	Total hcf	Consumption Chg hcf	2nd Tier Hcf
FY 13/14	17,831,291	17,316,723	3,422,170
Projected FY 15/16	12,838,530	12,468,041	1,624,655

Note: Assessment Districts and certain golf courses have water rates established by contract and pay a reduced consumption charge (not the current \$1.15/hcf) and aren't included in Consumption Charge calculation.

TABLE A-8
City of San Bernardino Municipal Water Department - Water Rate Model
Rate Design Calculations

105	Step 3. Identify Costs that are Related to 2nd Tier Water Use		
106			
107	Item 3.1. Conservation Program Costs.		
108	Billing Unit 2055, Water Conservation, FY 15/16 Budget	\$290,898	Note that FY 14/15 Budget was \$191,000 and projected FY 14/15 actual (as reported in FY 15/16 budget) was \$86,506
109			
110	Item 3.2 Water Loss Management Costs		
111	Billing Unit 3024, Water Loss Management, FY 15/16 Budget	\$413,739	Note that FY 14/15 Budget was \$150,200 and projected FY 14/15 actual (as reported in FY 15/16 budget) was \$6,000
112			
113	Item 3.3 Well Rehabilitation to Lower Pumps in Response to Declining Aquifer Levels		
114	Total Cost Identified by Department	\$4,426,550	Source: Department staff, well rehab costs.xls, June 2015. Incl 7% for Dept labor and overhead, and 15% contingency
115	Number of Sites Identified by Department	56	Source: Department staff, well rehab costs.xls, June 2015.
116	Average Cost per Site	\$79,046	
117	Number of Sites per Year Completed	10	Source: Department staff, 06/25/15 email
118	Estimated Annual Cost for Well Rehabilitation	\$790,460	Equals average cost per site times the number of sites per year
119			
120	Item 3.4 Include Additional Electricity Associated with Pumping Additional 50 feet of Head		
121	Methodology: calculate cost per hour; multiply cost per hour by hcf/hour to get cost/hcf; multiply cost/hcf times 2nd tier consumption to get additional electricity cost		
122	<u>3.4.a. Calculation of cost per hour</u>		
123	Cost per hour (formula: $C = 0.746 Q h c / (3960 \mu_p \mu_m)$)		
124	where		
125	$C = \text{cost per hour}$	Calculated result of formula	
126	$Q = \text{volume flow (gpm)}$	Use 1,000 gpm as typical well capacity per Department well rehab cost.xls	1,133 = calculated avg/well rehab cost.xls
127	$h = \text{head (ft)}$	Use 50 feet; that's the increased well/pump depth the Department is planning for.	
128	$c = \text{cost rate per kWh}$	Use \$0.0869/kWh, see below	
129	$\mu_p = \text{pump efficiency}; \mu_m = \text{motor efficiency}$	(Use 60%, the ~ avg of well pump tests done in 2015, excluding EPA wells and wells producing < 200 AFY)	
130		Source: Department), combining motor and pump efficiency	calc ==> 60%
131			
132	<u>Supporting Calc: \$/kWh derivation</u>		
133	This calculation recognizes that some wells are baseline and operate all seasons; some wells are peak and operate summer only, and Southern California Edison (SCE) rate schedules are seasonal		
134	Baseline	\$0.079465	SCE TOU PA-3, Option B (Sheet 2). Average summer and winter, all times
135			Formula showing specific numbers pulled from SCE tariff sheets=0.0281+average(0.06109,0.04164)
136			\$0.0281/kWh is the delivery service energy charge. The other two numbers are winter season mid-peak and non-peak
137			generation energy charges.
138	Peak	\$0.094433	SCE TOU PA-3, Option B (Sheet 2). Summer only, all times
139			Formula showing specific numbers pulled from SCE tariff sheets=0.0281+average(0.10644,0.05671,0.03585)
140			\$0.0281/kWh is the delivery service energy charge. The other three numbers are summer season on-peak,
141			mid-peak, and non-peak generation energy charges.
142	Average	\$0.0869	Rounded to nearest \$0.0001
143			
144	Cost per hour	\$1.318687	$C = 0.746 Q h c / (3960 \mu_p \mu_m)$
145			
146	<u>3.4.b. Calculation of cost per hcf</u>		
147	Volume pumped per hour		
148	gallons	60,000	= 60 minutes * 1000 gpm
149	hcf	80	= 60 minutes * 1000 gpm / 748 gal/hcf
150	Cost per hcf	\$0.01644	= cost per hour divided by hcf/hour
151			
152	<u>3.4.c. Calculation additional electricity cost</u>		
153	Estimated Additional Electricity from Pumping from Deeper Wells	\$56,259	= cost/hcf times 2nd Tier consumption hcf before conservation adjustment
154			
155	Backcheck comparison. For this cost to be valid to include in the Conservation Charge, the production from the deeper wells needs to exceed the amount of 2nd Tier consumption.		
156	The amount of 2nd Tier consumption is	3,422,170	hcf, FY 13/14 consumption
157	The amount of 2nd Tier consumption is	7,856	afy, FY 13/14 consumption
158	From inspection of the Department's proposed well rehab projects, the capacity of the wells where rehabs are planned for exceeds 7,856 afy.		
159			

TABLE A-8
City of San Bernardino Municipal Water Department - Water Rate Model
Rate Design Calculations

160	Item 3.5. Higher Costs of Peaking Wells vs Baseline Wells	
161	Average \$/AF for peaking wells	\$48.01
162	Average \$/AF for baseline wells including EPA wells	\$48.47
163	Average \$/AF for baseline wells excluding EPA wells	\$25.15
164		
165	Delta, \$/AF peaking less \$/AF baseline excluding EPA wells	\$22.86
166		
167	2nd Tier Summer hcf (June - November)	June - November billing data approximately is May - October use
168	FY 13/14, hcf	2,411,832
169	FY 13/14, af	5,537
170	Projected FY 15/16, hcf	1,146,724
171	Projected FY 15/16, af	2,633
172		
173	Estimated Additional Costs from Using Peaking Wells	\$126,563 = \$/AF times 2nd tier summer hcf, before conservation adjustment
174		
175	Backcheck numbers to make sure collecting some peaking wells power costs through the Conservation Charge (Item 4.5) does not double-recover electricity costs, some of which	
176	are recovered through Zone Charges	
177	Zone Charge Revenue, FY 13/14	\$2,828,000
178	Compare with electricity costs (FY 14/15 actual)	\$4,487,026
179	So, the zone charge doesn't cover all electricity costs, and the total energy costs associated with the \$/AF costs is low. So applying this delta does not double count revenue	
180		
181		
182	Step 4. Summarize Total Costs to be Included in Conservation Charge	
183	Component of Conservation Charge	Amount
184	Billing Unit 2055, Water Conservation, FY 15/16 Budget	\$291,000
185	Billing Unit 3024, Water Loss Management, FY 15/16 Budget	\$414,000
186	Estimated Annual Cost for Well Rehabilitation	\$790,000
187	Estimated Additional Electricity from Pumping from Deeper Wells	\$56,000
188	Estimated Additional Costs from Using Peaking Wells	\$127,000
189	Total	\$1,678,000 Each item is rounded to the nearest \$1,000.
190		
191	Step 5. Calculate the Conservation Charge	
192	Costs Included in Conservation Charge	\$1,678,000
193	Projected 2nd Tier Consumption, hcf	3,422,170
194	Conservation Charge, \$/hcf	\$0.49
195		
196		
197	Proposed Rate Design Change: Recalculate Replenishment Fee	
198	The Department is proposing to adjust the Replenishment Fee to accommodate projected increases in the cost of regional water.	
199	In FY 14/15, the Department's budget was \$1.5 million, which at current Table A rates from Valley District,	
200	would purchase approximately 12,669 acre-feet of water.	
201		
202	The intent of the revised Replenishment Fee schedule is to, by the end of the rate study planning period,	
203	collect sufficient revenues to purchase 12,000 to 13,000 acre-feet per year, given anticipated increases in Table A	
204	rates from Valley District.	
205		
206	Step 1. Calculate FY 14/15 Anticipated AF/year	
207	Current Supplemental Water Purchase Amount	\$1,500,000 Amount to be spent on supplemental water provided water is available
208	Current Table A Unit Cost (FY 14/15)	\$118.40 Source: Department, 8/12/15
209	Current AF/year Supplemental Water Purchases	12,669 Calculated
210		
211	Step 2. Calculate Anticipated FY 15/16 Replenishment Fee Revenue Given Conservation Adjustment	
212	Current Replenishment Fee, \$/hcf	\$0.09
213	hcf/year Water Sales (FY 15/16)	12,838,530
214	Anticipated FY 15/16 Replenishment Fee Revenue	\$1,155,468
215		

TABLE A-8
City of San Bernardino Municipal Water Department - Water Rate Model
Rate Design Calculations

	Proposed Replenishment Fee, \$/hcf	Projected Water Sales hcf/year	Projected Purchased Water \$	Table A \$/AF (Dept. 8/12/15)	Projected AF/Year Purchased	
216 Step 3. Given Proposed Increase in Replenishment Fee, Calculate Amount and Cost of Replenishment Water Purchased						
217						
218						
219						
220	FY 15/16	\$0.09	12,838,530	\$1,155,468	\$118.40	9,759
221	FY 16/17	\$0.11	12,966,915	\$1,426,361	\$150.00	9,509
222	FY 17/18	\$0.14	13,096,584	\$1,833,522	\$175.00	10,477
223	FY 18/19	\$0.17	13,227,550	\$2,248,683	\$200.00	11,243
224	FY 19/20	\$0.19	13,359,825	\$2,538,367	\$200.00	12,692
225	FY 20/21	\$0.19	13,493,424	\$2,563,750	\$200.00	12,819

226
227 The Projected Purchased Water \$ are inputs into the O&M expense table in this Rate Model and are inputs to the Replenishment Fee
228 Revenues in this Rate Model. If water isn't available for purchase from Valley District, it is FG Solutions's understanding that Replenishment Fee
229 Funds would accumulate in a reserve account (not shown in the Operating Statement) dedicated for future water purchases.
230
231

232 Revised Minimum Monthly Charge and Commodity Charge Calculation. No Commodity Charge Increase

233
234
235 Step 1. Backcalculate Regular Water Sales Revenues Based on Customers and Projected Consumption

236 <u>Minimum Monthly Charge Revenues</u>					
	Meter Size	FY 15/16, # of Connections	Existing Rate	Minimum Monthly	Charge Rev. Annual
237	1/2" & 5/8"	39,218	\$12.90	\$505,912	\$6,070,946
240	3/4"	2,795	\$16.15	\$45,139	\$541,671
241	1"	2,241	\$22.60	\$50,647	\$607,759
242	1 1/2"	1,052	\$38.80	\$40,818	\$489,811
243	2"	617	\$58.20	\$35,909	\$430,913
244	3"	234	\$103.50	\$24,219	\$290,628
245	4"	149	\$158.20	\$23,572	\$282,862
246	6"	32	\$330.00	\$10,560	\$126,720
247	8"	14	\$524.15	\$7,338	\$88,057
248	10"	2	\$750.65	\$1,501	\$18,016
249		46,354		\$745,615	\$8,947,383

250 (Number of Connections excludes fire services, Colton Intertie, West Valley Intertie, and Golf Courses paying rates established by contract)

251
252 Commodity Charge (at \$1.15/hcf) Revenues

253					
254	Consumption, Projected FY 15/16, hcf			12,468,041	
255	Commodity Charge, \$/hcf			\$1.15	
256	Commodity Charge Revenues, Projected FY 15/16			\$14,338,247	
257					
258	Total Projected Regular Water Sales Revenues (Includes Municipal Sales)			\$23,285,630	
259					
260	Check:			\$22,873,518	
261	% Difference:			1.80%	

262

TABLE A-8
City of San Bernardino Municipal Water Department - Water Rate Model
Rate Design Calculations

263 Step 2. Adjust Number of Connections to Result in Calculated Revenues that Equal Projected Revenues

264 For the purposes of this calculation, the number of connections and consumption is adjusted by -1.8%

265 Minimum Monthly Charge Revenues

266 267 268 269 270 271 272 273 274 275 276 277 278 279	Meter Size	Adjusted		Minimum Monthly Charge Rev.	
		FY 15/16 # of Connections	Existing Rate	Monthly	Annual
	1/2" & 5/8"	38,511	\$12.90	\$496,792	\$5,961,503
	3/4"	2,745	\$16.15	\$44,332	\$531,981
	1"	2,201	\$22.60	\$49,743	\$596,911
	1 1/2"	1,033	\$38.80	\$40,080	\$480,965
	2"	606	\$58.20	\$35,269	\$423,230
	3"	230	\$103.50	\$23,805	\$285,660
	4"	146	\$158.20	\$23,097	\$277,166
	6"	31	\$330.00	\$10,230	\$122,760
	8"	14	\$524.15	\$7,338	\$88,057
	10"	2	\$750.65	\$1,501	\$18,016
				\$732,187	\$8,786,249

280 (Number of Connections excludes fire services, Colton Intertie, West Valley Intertie, and Golf Courses paying rates established by contract)

281 282 283 284 285 286 287 288 289 290 291	Commodity Charge (at \$1.15/hcf) Revenues	
	Consumption, Projected FY 15/16, hcf, Adjusted	12,243,404
	Commodity Charge, \$/hcf	\$1.15
	Commodity Charge Revenues, Projected FY 15/16	\$14,079,915
	Total Projected Regular Water Sales Revenues (Includes Municipal Sales)	\$22,866,164
	Check:	\$22,873,518
	% Difference:	-0.03%

292 Step 3. Define Transition Years Commodity Charges and Revenues from Commodity Charges

293 294 295 296 297 298 299 300 301		FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
	Commodity Charge, \$/hcf	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15	\$1.15
	Projected Water Sales, hcf/year, Adjusted	12,243,404	12,365,838	12,489,497	12,614,391	12,740,535	12,867,941
	Projected Commodity Charge Revenues	\$14,079,915	\$14,220,714	\$14,362,921	\$14,506,550	\$14,651,616	\$14,798,132

302 Step 4. Project the Number of Customers in Each Year Through FY 20/21

303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318	Meter Size	Adjusted	Projected	Projected	Projected	Projected	Projected
FY 15/16, # of Connections		Adjusted Connections					
	1/2" & 5/8"	38,511	38,896	39,285	39,678	40,075	40,476
	3/4"	2,745	2,772	2,800	2,828	2,856	2,885
	1"	2,201	2,223	2,245	2,267	2,290	2,313
	1 1/2"	1,033	1,043	1,053	1,064	1,075	1,086
	2"	606	612	618	624	630	636
	3"	230	232	234	236	238	240
	4"	146	147	148	149	150	152
	6"	31	31	31	31	31	31
	8"	14	14	14	14	14	14
	10"	2	2	2	2	2	2

TABLE A-8
City of San Bernardino Municipal Water Department - Water Rate Model
Rate Design Calculations

319 Step 5. Define the Meter Equivalent Ratio For Each Meter Size Using the Ratio of Existing Minimum Monthly Charges

320		Meter Equivalent	
321		Existing	Ratio,
322	Meter Size	Rate	5/8x3/4 = 1.0
323	1/2" & 5/8"	\$12.90	1.0
324	3/4"	\$16.15	1.3
325	1"	\$22.60	1.8
326	1 1/2"	\$38.80	3.0
327	2"	\$58.20	4.5
328	3"	\$103.50	8.0
329	4"	\$158.20	12.3
330	6"	\$330.00	25.6
331	8"	\$524.15	40.6
332	10"	\$750.65	58.2

335 Step 6. Project the Number of Meter Equivalents in Each Year Through FY 20/21

336		Projected					
337		FY 15/16, # of	FY 16/17, # of	FY 17/18, # of	FY 18/19, # of	FY 19/20, # of	FY 20/21, # of
338	Meter Size	Meter Equiv.					
339	1/2" & 5/8"	38,511	38,896	39,285	39,678	40,075	40,476
340	3/4"	3,437	3,471	3,506	3,541	3,576	3,612
341	1"	3,856	3,895	3,934	3,973	4,013	4,053
342	1 1/2"	3,107	3,138	3,169	3,201	3,233	3,265
343	2"	2,734	2,761	2,789	2,817	2,845	2,873
344	3"	1,845	1,863	1,882	1,901	1,920	1,939
345	4"	1,790	1,808	1,826	1,844	1,862	1,881
346	6"	793	801	809	817	825	833
347	8"	569	575	581	587	593	599
348	10"	116	117	118	119	120	121
349	Total	56,758	57,325	57,899	58,478	59,062	59,652

352 Step 7. Calculate the Revenue Requirement from Minimum Monthly Charges in Each Year and The Minimum Monthly Charge in \$/mo/Meter Equivalent

353		Projected					
354		FY 15/16	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
355	Rev Req: Monthly Service Chg + Commodity Chg	\$22,873,518	\$25,290,963	\$27,963,973	\$30,919,563	\$32,938,756	\$35,089,867
356	Less Commodity Charge Revenues	(\$14,079,915)	(\$14,220,714)	(\$14,362,921)	(\$14,506,550)	(\$14,651,616)	(\$14,798,132)
357	Revenue Requirement from Minimum Monthly Charges	\$8,793,603	\$11,070,249	\$13,601,052	\$16,413,013	\$18,287,140	\$20,291,735
358							
359							
360	Number of Meter Equivalents	56,758	57,325	57,899	58,478	59,062	59,652
361	Minimum Monthly Charge, \$/Meter Equivalents	\$12.91	\$16.09	\$19.58	\$23.39	\$25.80	\$28.35

365 Step 8. Calculate Monthly Water Bills and % Increase in Monthly Water Bills

366		Proposed					
367	Hcf/month	Current	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21
368	5	\$19.99	\$23.28	\$26.92	\$30.88	\$33.39	\$35.94
369	10	\$27.08	\$30.48	\$34.26	\$38.37	\$40.99	\$43.53
370	15	\$34.18	\$37.67	\$41.60	\$45.86	\$48.58	\$51.12
371	16	\$35.59	\$39.11	\$43.07	\$47.36	\$50.10	\$52.64
372	20	\$41.27	\$44.86	\$48.94	\$53.36	\$56.17	\$58.71
373	25	\$48.36	\$52.05	\$56.28	\$60.85	\$63.76	\$66.31
374	30	\$55.45	\$59.24	\$63.63	\$68.34	\$71.35	\$73.90
375	50	\$90.12	\$94.31	\$99.29	\$104.61	\$108.02	\$110.56
376	100	\$178.53	\$183.73	\$190.21	\$197.02	\$201.44	\$203.98

TABLE A-8
City of San Bernardino Municipal Water Department - Water Rate Model
Rate Design Calculations

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Hcf/month	FY 16/17	FY 17/18	Proposed			Cumulative	Cumulative
			FY 18/19	FY 19/20	FY 20/21	1st 3 Incr.	All 5 Incr.
5	16%	16%	15%	8%	8%	54%	80%
10	13%	12%	12%	7%	6%	42%	61%
15	10%	10%	10%	6%	5%	34%	50%
16	10%	10%	10%	6%	5%	33%	48%
20	9%	9%	9%	5%	5%	29%	42%
25	8%	8%	8%	5%	4%	26%	37%
30	7%	7%	7%	4%	4%	23%	33%
50	5%	5%	5%	3%	2%	16%	23%
100	3%	4%	4%	2%	1%	10%	14%

CHECK: PERCENTAGE OF WATER RATE REVENUES FROM FIXED CHARGES

Alternative 2: No Commodity Charge Increase

Type of Revenue	FY 15/16	FY 16/17	Projected			
			FY 17/18	FY 18/19	FY 19/20	FY 20/21
Minimum Monthly Charge	\$8,793,603	\$11,070,249	\$13,601,052	\$16,413,013	\$18,287,140	\$20,291,735
Commodity Charge	14,079,915	14,220,714	14,362,921	14,506,550	14,651,616	14,798,132
Elevation Charge	2,036,160	2,056,522	2,077,085	2,097,857	2,118,838	2,140,027
Conservation Charge	1,140,000	1,613,053	1,629,180	1,645,470	1,661,920	1,678,540
Replenishment Fee	1,155,468	1,426,361	1,833,522	2,248,683	2,538,367	2,563,750
Total	\$27,205,146	\$30,386,898	\$33,503,759	\$36,911,573	\$39,257,880	\$41,472,184
% from Minimum Monthly Charge	32%	36%	41%	44%	47%	49%

ADDITIONAL TABLES SUPPORTING TABLE A-3
 City of San Bernardino Municipal Water Department - Water Rate Model
 Additional Revenue Calculations Supporting Table A-3

1 Table A-3B: Comparison of Actual FY 13/14 Revenues with Calculated Revenues from Consumption Data

6 Type of Water Sales Revenues	5 Calculated From FY 13/14 Customer Data (See Below)	Actual	Difference		Notes
			Dollars	Percent	
7 Monthly Charge	\$8,168,182	\$28,476,858	\$201,619	0.7%	1, 4
8 Consumption Charge	\$20,107,057				1, 4
9 Conservation Charge					
10 Multi-Unit	\$75,893	\$1,192,046	(\$5,713)	-0.5%	2, 5
11 All Other Customers	\$1,121,866				3
12 Replenishment Charge	\$1,604,816	1,701,462	\$96,646	5.7%	3
13 Zone Charge	\$2,772,659	2,820,407	\$47,748	1.7%	3
14 Fire Service Charges	\$449,745	461,679	\$11,934	2.6%	1
15 Total	\$34,300,219	\$34,652,452	\$352,233	1.0%	

- 16
 17 Notes:
 18 (1) Source: Data in Table 8 of this model
 19 (2) Source: Data in revised dataset sent by Department staff in May 2015 that includes # of units in multi-unit connections
 20 (3) Source: Data in >100 mb dataset sent by Department staff in May 2015
 21 (4) Actual data is not disaggregated and includes municipal sales
 22 (5) Billing data shows consumption of 216,838 hcf/year in the 2nd tier, for multi-unit customers. With a 28% reduction in water use for
 23 this customer class, consumption in the 2nd tier would be reduced to 80,789 hcf/year
 24 (6) Billing data shows consumption of 3,205,332 hcf/year in the 2nd tier. With a 28% reduction in water use for
 25 this customer class, consumption in the 2nd tier would be reduced to 1,543,866 hcf/year
 26

27 Supporting Calculation, Table A-3C: Estimate Commodity Charge Revenues Based on FY 13/14 Water Consumption and Rates

29 Customer Type and Service Type	28 Consumption per Customer Class, hcf/month											2014 Commodity Charge \$/hcf	2014 Calculated Value			
	2013 7	2013 8	2013 9	2013 10	2013 11	2013 12	2014 1	2014 2	2014 3	2014 4	2014 5		2014 6	Reg. Sales	Fire Service	
31 ASSESSMENT DIST																
32 LS	35,997	36,132	37,845	33,293	27,728	16,708	19,066	20,361	12,279	15,977	21,257	26,833	\$0.45	\$136,564		
33 CAP REBATE																
34 WA	9,934	9,475	10,009	7,712	6,349	4,663	6,140	5,579	5,260	5,522	7,354	9,238	\$1.15	\$100,320		
35 COLTON-INTERTIE																
36 WA		0	0		0	0	15		0		0	0	\$1.15	\$17		
37 COMMERCIAL/LAND/LT. INDST																
38 LS	187,009	186,515	189,753	160,758	123,341	87,101	95,433	94,885	71,541	92,255	123,080	152,705	\$1.15	\$1,799,032		
39 WA									5				\$1.15	\$6		
40 EDUCATION-PUBLIC																
41 LS	32,666	37,770	30,812	34,348	18,339	10,946	10,122	9,075	7,279	11,962	28,435	38,345	\$1.15	\$310,614		
42 WA	43,594	51,271	54,732	43,522	31,435	20,253	18,023	21,041	18,488	19,703	31,087	39,492	\$1.15	\$451,537		
43 GOLF COURSE																
44 LS	29,952	28,206	23,726	20,456	12,638	5,331	13,524	8,788	9,768	12,012	20,720	25,971	\$0.37	\$78,104		
45 HYDRANT																
46 WA	9,165	8,916	26,958	14,315	6,597	11,059	11,237	7,050	7,067	5,272	7,186	6,011	\$1.15	\$138,958		
47 INTERTIE-NO CONSUMPTION																
48 FS	22	14	67	135	129	118	6	156	136	40	96	80	\$1.15		\$1,149	
49 LS	0	0	0	0	0	0	0	0	0	0	0	0	\$1.15	\$0		
50 WA	23,739	23,559	22,551	19,555	13,867	14,075	12,090	14,067	12,934	6,188	1,685	845	\$1.15	\$189,928		
51 INTERTIE-WITH CONSUMPTION																
52 WA	17	5	55	6	14	15	18	17	15	5	12	20	\$1.15	\$229		
53 MULTI-FAMILY																
54 WA	218,200	224,780	224,012	199,810	183,326	152,367	181,101	163,764	154,972	155,317	179,897	207,930	\$1.15	\$2,582,297		
55 MULTI-FAMILY 2 UNIT (WA)																
56 WA	42,262	42,081	45,563	35,545	31,454	25,713	30,144	28,276	26,463	26,467	32,516	39,212	\$1.15	\$466,550		
57 MUNICIPAL																
58 FS	0	3	19	5	4	1	2	2	2	0	2	0	\$1.15		\$46	
59 LS	68,631	63,907	65,922	64,376	47,681	31,500	33,757	29,027	23,760	27,830	48,143	57,283	\$1.15	\$646,090		
60 WA	10,524	10,612	11,037	7,745	5,834	3,858	4,969	3,959	4,957	5,274	9,547	9,839	\$1.15	\$101,378		
61 NON RESIDENTIAL																
62 FS	549	907	891	624	704	815	893	753	685	643	523	529	\$1.15		\$9,793	
63 LS	3,989	1,405	1,482	1,909	2,231	774	1,343	1,496	1,515	2,207	2,912	5,167	\$1.15	\$30,395		
64 WA	232,056	229,312	247,429	209,194	249,919	213,745	184,926	174,327	167,816	162,156	186,649	207,018	\$1.15	\$2,834,229		
65 RESIDENTIAL-SINGLE FAMILY																
66 FS	48	45	39	66	27	47	21	25	14	30	53	37	\$1.15		\$520	
67 LS	4,452	4,831	4,359	3,968	3,201	1,949	3,228	2,394	1,975	2,571	4,054	4,441	\$1.15	\$47,636		
68 WA	1,006,523	973,261	993,049	796,903	656,375	495,506	639,000	558,446	500,841	574,363	753,968	909,615	\$1.15	\$10,186,528		
69 WATER DEPARTMENT RATE																
70 LS	283	295	279	312	273	249	622	342	299	385	398	419	\$0.45	\$1,870		
71 WA	691	955	1,213	1,061	727	784	684	812	826	835	1,001	1,019	\$0.45	\$4,774		
72 WATER-COUNTY HOSPITAL																
73 WA	0	0	0	0	0	0	0	0	0	0	0	0	\$1.15	\$0		
74 WEST VALLEY INTERTIE																
75 WA	0	0	0	0	0	0	0	0	0	0	0	0	\$0.149219	\$0		
76 Total	1,960,303	1,934,257	1,991,802	1,655,618	1,422,193	1,097,577	1,266,364	1,144,642	1,028,897	1,127,014	1,460,575	1,742,049		\$20,107,057	\$11,508	

79 Supporting Calculation, Table A-3D: Show 13-Month Total Number of Connections (June 2013 through June 2014)

80 Customer Type and Service Type	00	01	02	03	04	05	06	07	08	09	10	11
81	1/2-inch	5/8-inch	3/4-inch	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch	8-inch	10-inch	12-inch
82 ASSESSMENT DIST												
83 LS		52	52	554	454	426	26					

ADDITIONAL TABLES SUPPORTING TABLE A-3
 City of San Bernardino Municipal Water Department - Water Rate Model
 Additional Revenue Calculations Supporting Table A-3

84	CAP REBATE																			
85	WA	506	5,005	241	140															
86	COLTON-INTERTIE																			
87	WA																			9
88	COMMERCIAL/LAND/LT. INDST																			
89	LS	89	1,113	478	2,281	2,320	2,507	195	130	26										
90	WA		1																	
91	EDUCATION-PUBLIC																			
92	LS			13		13	58	208	117											
93	WA				52	26	130	294	304	39										13
94	GOLF COURSE																			
95	LS																			26
96	HYDRANT																			
97	WA						655		33											
98	INTERTIE-NO CONSUMPTION																			
99	FS																			13
100	LS																			13
101	WA							26	26	26										13
102	INTERTIE-WITH CONSUMPTION																			13
103	WA						4													26
104	MULTI-FAMILY																			
105	WA	652	6,683	3,135	3,553	2,807	993	442	245	140	156									
106	MULTI-FAMILY 2 UNIT (WA)																			
107	WA	1,581	12,636	3,336	373	26														
108	MUNICIPAL																			
109	FS									52	78									52
110	LS		156	23	294	369	590	195	104	13										13
111	WA	13	63	13	90	173	163	130	26	13										
112	NON RESIDENTIAL																			
113	FS				51	13	91	52	3,245	4,801	3,793	1,223								77
114	LS		22	54	65	97	67													
115	WA	1,331	12,953	3,849	7,809	5,171	4,879	1,236	599	90	26									
116	RESIDENTIAL-SINGLE FAMILY																			
117	FS				7,257	13														
118	LS	78	619	287	207	39														
119	WA	28,278	387,413	20,477	9,412	233														
120	WATER DEPARTMENT RATE																			
121	LS		39	13	38		24													
122	WA	16	74	13	39		39		13		13									
123	WATER-COUNTY HOSPITAL																			
124	WA		13																	
125	WEST VALLEY INTERTIE																			13
126	WA																			13
127	Grand Total	32,544	426,842	31,984	32,215	11,754	10,626	2,804	4,894	5,226	4,140	1,262	116							

129 Supporting Calculation, Table A-3E: Calculate Minimum Monthly Charge Revenues

131	132 Customer Type and Service Type	130 Unit Costs: Minimum Monthly Charge											131 Calculated Value		
		00	01	02	03	04	05	06	07	08	09	10	11	12	13
133		1/2-inch	5/8-inch	3/4-inch	1-inch	1.5-inch	2-inch	3-inch	4-inch	6-inch	8-inch	10-inch	12-inch	Reg. Sales	Fire Service
134	ASSESSMENT DIST				1-inch										
135	LS	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$54,582	
136	CAP REBATE														
137	WA	\$7.90	\$7.90	\$11.15	\$17.60	\$33.80	\$53.20	\$98.50	\$153.20	\$325.00	\$519.15	\$745.65	\$0.00	\$44,943	
138	COLTON-INTERTIE														
139	WA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	
140	COMMERCIAL/LAND/LT. INDST														
141	LS	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$332,334	
142	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$12	
143	EDUCATION-PUBLIC														
144	LS	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$40,733	
145	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$102,369	
146	GOLF COURSE														
147	LS	\$140.46	\$140.46	\$140.46	\$140.46	\$140.46	\$140.46	\$140.46	\$140.46	\$140.46	\$140.46	\$140.46	\$0.00	\$3,371	
148	HYDRANT														
149	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$40,008	
150	INTERTIE-NO CONSUMPTION														
151	FS				\$2.70	\$10.75	\$10.75	\$16.15	\$21.49	\$32.24	\$42.99	\$53.74	\$64.48		\$516
152	LS	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$6,290	
153	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$29,498	
154	INTERTIE-WITH CONSUMPTION														
155	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$12,794	
156	MULTI-FAMILY														
157	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$558,210	
158	MULTI-FAMILY 2 UNIT (WA)														
159	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$227,736	
160	MUNICIPAL														
161	FS				\$2.70	\$10.75	\$10.75	\$16.15	\$21.49	\$32.24	\$42.99	\$53.74	\$64.48		\$6,061
162	LS	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$91,023	
163	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$38,106	
164	NON RESIDENTIAL														
165	FS				\$2.70	\$10.75	\$10.75	\$16.15	\$21.49	\$32.24	\$42.99	\$53.74	\$64.48		\$424,952
166	LS	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$9,497	
167	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$1,083,246	
167	RESIDENTIAL-SINGLE FAMILY														

ADDITIONAL TABLES SUPPORTING TABLE A-3
City of San Bernardino Municipal Water Department - Water Rate Model
Additional Revenue Calculations Supporting Table A-3

168	FS				\$2.70	\$10.75	\$10.75	\$16.15	\$21.49	\$32.24	\$42.99	\$53.74	\$64.48		\$18,216
169	LS	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$18,293	
170	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$5,459,879	
171	WATER DEPARTMENT RATE														
172	LS	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$2,740	
173	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$12,362	
174	WATER-COUNTY HOSPITAL														
175	WA	\$12.90	\$12.90	\$16.15	\$22.60	\$38.80	\$58.20	\$103.50	\$158.20	\$330.00	\$524.15	\$750.65	\$0.00	\$155	
176	WEST VALLEY INTERTIE														
177	WA	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	
178	Total Estimated FY 13/14 Minimum Monthly Charge \$													\$8,168,182	\$449,745

180 Analysis of Year-to-Date FY 15/16 Revenues to Check Previously Made Revenue Projections

182	183	Actual	Actual	Actual	FY 15/16	Dept. FY 15/16	Dept. FY 15/16	FG Estimate	Proj. FY 15/16	Variance from Rate Study		Comments
										Alt 1:	Variance if	
184	Revenues: Feb2016 = Most Recent	Jan-16	Feb-16	FY to date	Budget	Estimate	Estimate =	Estimate =	Actual YTD *	15/16 = YTD	15/16 = YTD +	
185	Operating Revenues											
186	Regular Water Sales Revenues	\$1,669,097	\$1,596,545	\$15,310,768	\$27,006,600	\$15,753,850	Yes	\$22,325,518	\$22,966,153	\$640,635	(\$338,360)	Do not adjust upward. Possibly right on target. Mar-June likely to be more > Feb
187	Fire Service	\$34,988	44,806	\$317,303	\$464,600	\$271,012	Yes	\$464,600	\$475,954	\$11,354	(\$7,347)	No Adjustment Necessary
188	Municipal	\$35,321	32,356	\$404,054	\$855,000	\$498,750	Yes	\$548,000	\$606,081	\$58,081	(\$2,661)	Decrease FY 15/16 and beyond by \$100K
189	Other	\$12,804	10,468	\$75,633	\$600,000	\$350,000	Yes	\$120,000	\$113,450	(\$6,550)	\$6,849	Must adjust downward per comment from Miguel Guerrero. Use \$120,000 per yr
190	Replenishment	\$80,432	72,775	\$816,280	\$1,615,000	\$942,081	Yes	\$1,155,468	\$1,224,421	\$68,953	(\$17,460)	No adjustment necessary
191	Elevation	\$138,406	127,216	\$1,405,146	\$2,660,000	\$1,551,662	Yes	\$2,036,160	\$2,107,719	\$71,559	(\$77,390)	No adjustment necessary
192	Conservation	\$92,117	77,224	\$838,729	\$1,140,000	\$665,000	Yes	\$1,140,000	\$1,258,093	\$118,093	\$67,198	Conservation \$ is much higher than projected. Adjust upward. Suggest using F
193	Service Charges	\$72,544	79,957	\$592,674	\$950,000	\$554,162	Yes	\$890,000	\$889,010	(\$990)	(\$7,152)	Decrease FY 15/16 only by \$60K
194	Broken Lock Charges	\$2,975	4,650	\$29,605	\$75,000	\$43,750	Yes	\$75,000	\$44,408	(\$30,593)	(\$33,495)	Decrease FY 15/16 only by \$30K
195	Returned Check Charges	\$1,066	962	\$7,748	\$15,000	\$8,750	Yes	\$15,000	\$11,622	(\$3,378)	(\$2,988)	No adjustment necessary
196	Fire Hydrant Flow Test Charge	\$680	1,040	\$4,280	\$5,000	\$2,912	Yes	\$5,000	\$6,420	\$1,420	\$2,000	No adjustment necessary
197	Application Charge	\$1,080	720	\$7,510	\$20,000	\$11,662	Yes	\$20,000	\$11,265	(\$8,735)	(\$8,170)	No adjustment necessary
198	Will Serve Letter Charge	\$540	720	\$2,700	\$2,000	\$1,162	Yes	\$2,000	\$4,050	\$2,050	\$2,860	No adjustment necessary

202	203	Actual	Actual	Actual	FY 15/16	Dept. FY 15/16	Dept. FY 15/16	FG Estimate	Proj. FY 15/16	Variance from Rate Study		Comments
										Alt 1:	Variance if	
204	Revenues: Jan2016 = Most Recent	Jan-16	Feb-16	FY to date	Budget	Estimate	Estimate =	Estimate =	Actual YTD *	15/16 = YTD	15/16 = YTD +	
205	Operating Revenues											
206	Income from Services	(\$466)		\$40,701	\$95,000	\$55,412	Yes	\$45,000	\$69,772	\$24,772	(\$6,628)	Decrease FY 15/16 only by \$50K
207	Backflow Admin Fees	\$7,027		\$52,332	\$85,000	\$49,581	Yes	\$85,000	\$89,713	\$4,713	\$2,465	No adjustment necessary
208	Plan Check and Other Fees	\$0		\$1,421	\$250,000	\$145,831	Yes	\$10,000	\$2,436	(\$7,564)	(\$8,579)	Decrease FY 15/16 only by \$240K
209	Hydrogeneration	\$31		\$4,323	\$50,000	\$29,162	Yes	\$10,000	\$7,412	(\$2,588)	(\$5,521)	Decrease FY 15/16 only by \$40K
210	Administrative Services	\$35,812		\$250,430	\$434,950	\$253,715	Yes	\$434,950	\$429,308	(\$5,642)	(\$5,458)	No adjustment necessary
211												
212	Geothermal Heat Sales	\$2,434		\$51,066	\$140,000	\$81,662	Yes	\$90,000	\$87,541	(\$2,459)	(\$26,766)	Decrease FY 15/16 only by \$50K
213												
214	Contributed Capital											
215	Service Installation Fees	\$11,008		\$179,524	\$500,000	\$291,662	Yes	\$300,000	\$307,755	\$7,755	(\$65,436)	Decrease FY 15/16 only by \$200K
216	Water Acquisition Fees	\$0		\$164,370	\$1,200,000	\$700,000	Yes	\$200,000	\$281,777	\$81,777	(\$35,630)	Decrease FY 15/16 only by \$1MK
217	Developer, EPA, and AIG Capital	not included in this comparison - doesn't affect our financial model										
218												
219	Operating Grants											
220	AIG O&M CD Implementation	\$111,026		\$488,294	\$1,500,000	\$875,000	Yes	\$1,500,000	\$837,076	(\$662,924)	(\$456,575)	No adjustment. If revenues are lower then expenses are too. We haven't adjust
221												
222	Other Revenue											
223	Cash Funds	(\$4,648)		\$59,700	\$42,000	\$24,500	Yes	\$0	\$102,343	\$102,343	\$36,460	No adjustment necessary. This helps offset some of the negative variances four
224	Local Agency Invest Fund	\$490		\$916	\$2,000	\$1,162	Yes	\$0	\$1,570	\$1,570	\$3,367	No adjustment necessary
225	Rental Income	\$0		\$42,277	\$150,000	\$87,500	Yes	\$150,000	\$72,475	(\$77,525)	(\$107,723)	Much lower than budgeted; are these expenses uniform throughout the year?
226												
227	Non-Operating Revenue											
228	Refunds Received	\$26,332		\$55,266	\$150,000	\$87,500	Yes	\$150,000	\$94,742	(\$55,258)	\$36,928	No adjustment necessary
229	Discounts Earned	\$386		\$3,343	\$10,000	\$5,831	Yes	\$10,000	\$5,731	(\$4,269)	(\$4,727)	No adjustment necessary
230	Energy Rebates	\$113,132		\$137,635	\$0	\$0	Yes	\$0	\$235,946	\$235,946	\$703,296	Add FY 15/16 one-time revenues of \$140K under Miscellaneous to avoid creatin
231	Cashier Overage/Short	\$0		(\$40)	\$0	\$0	Yes	\$0	(\$69)	(\$69)	(\$40)	No adjustment necessary
232	Miscellaneous	\$206		\$4,769	\$5,000	\$2,912	Yes	\$5,000	\$8,175	\$3,175	\$801	No adjustment necessary
233	Scrap Materials	\$0		\$2,582	\$25,000	\$14,581	Yes	\$25,000	\$4,426	(\$20,574)	(\$22,418)	No adjustment necessary

236 Fixed Cost Calculations for Report Discussion

237												
238	Electricity	\$4,250,000	Table 4									
239	Granular Activated Carbon	\$420,000	Table 4									
240	Supplemental Water Purchases	\$1,100,000	Table 4									
241	Chemicals	\$150,000	Table 4, embedded with Other Accounts in Section 3041									
242	Total	\$5,920,000										
243												
244	Total O&M Expenditures	\$30,684,869										
245	% Variable	19%										