



JOSHUA BASIN WATER DISTRICT  
REGULAR WORKSHOP MEETING OF THE CITIZENS ADVISORY COMMITTEE  
WEDNESDAY, NOVEMBER 1, 2017 AT 1:00 PM  
61750 CHOLLITA ROAD, JOSHUA TREE, CA 92252

AGENDA

1. CALL TO ORDER
2. PLEDGE OF ALLEGIANCE
3. DETERMINATION OF QUORUM
4. APPROVAL OF AGENDA
5. PUBLIC COMMENTS  
This public comment portion of this agenda provides an opportunity for the public to address the Committee on items not listed on the agenda that *are of interest to the public at large* and are within the subject matter jurisdiction of this Committee. The Committee is prohibited by law from taking action on matters discussed that are not on the agenda, and no adverse conclusions should be drawn if the Board does not respond to public comments at this time.
6. CONSENT CALENDAR
  - A. Special Workshop Draft Minutes – October 18, 2017
7. WORKSHOP – RATE INCREASE – ONGOING RATE DISCUSSION
8. GENERAL MANAGER REPORT –
  - General update on District projects.
9. CONFIRM DATE FOR NEXT CITIZENS ADVISORY COMMITTEE MEETING
  - Combined BoD/CAC -November 14, 2017 from 1-4 p.m. Reserve Funding Workshop
10. ADJOURNMENT

Pages 2-4

Pages 5-61

INFORMATION: During "Public Comment", please use the podium microphone. State your name and have your information prepared and be ready to provide your comments to the Committee. The District is interested and appreciates your comments. A 3-minute time limit will be imposed. Thank you. Any person with a disability who requires accommodation in order to participate in this meeting should telephone Joshua Basin Water District at (760) 366-8438, at least 48 hours prior to the meeting to make a request for a disability-related accommodation.

Materials related to an item on this Agenda submitted to the Board of Directors after distribution of the agenda packet are available for public inspection in the District's office located at 61750 Chollita Road, Joshua Tree, California 92252 during normal business hours.

JOSHUA BASIN WATER DISTRICT  
Minutes of the  
SPECIAL WORKSHOP MEETING  
OF THE CITIZENS ADVISORY COMMITTEE  
October 18, 2017

- 1. CALL TO ORDER 1:07 pm.
- 2. PLEDGE OF ALLEGIANCE
- 3. DETERMINATION OF QUORUM:
  - Jeff Dongvillo Present
  - Tom Kayne Present
  - Shari Long Present
  - Karen Morton Present
  - Karyn Sernka Absent
  - Karen Tracy Present

STAFF PRESENT: Curt Sauer, General Manager  
Susan Greer, Assistant General Manager  
Keith Faul, GIS Coordinator

CONSULTANTS: Alex Handlers, Bartles Wells Associates  
Kathleen Radnich, Public Information and Outreach

GUESTS: 2

- 4. APPROVAL OF AGENDA  
MSC Tracy/Long 5/0/1 to approve the agenda for the October 18, 2017 the Special Workshop Meeting of the Citizens Advisory Committee.

- 5. PUBLIC COMMENT –  
Gayle Austin, Ink & Steel Tattoo, Joshua Tree introduced herself to the CAC.

- 6. WORKSHOP “RATE STUDY” -  
Alex Handlers gave a quick review of the three (3) scenarios for the rate increases, with focus on the following:
  - a. Which rate increase is acceptable (financial projections)
  - b. What structure to use for a rate increase (reference the San Juan Capistrano tier rates law suit)
  - c. Policy objectives

He reviewed rate comparisons with other Districts, with JBWD being in the lower middle range and in the 10-unit range. The gradual rate increases over the years are noted but were not kept up so that capital projects were deferred over the long term for lack of funds.

The following are considered JBWD “challenges”:

- a. Capital improvement needs for infrastructure upgrades to facilities and pipelines. \$2.5M per year for 5 years is a preliminary estimate.

- b. Ground water imports require additional funding.

Tom Kayne asked when MWA's water rates go up.  
GM Sauer replied that the cost for water goes up every year.

- c. Chromium 6

Gayle Austin asked about the imported water quality.  
GM Sauer stated that it was of good quality.

Karen Tracy asked about recharging enough water to keep up with the overdraft.

GM Sauer clarified how much we overdraft annually in comparison to what needs to be recharged to keep up.

Alex noted that he would "bump-out" the Chromium 6 number estimates by one year due to the delays caused by the State.

- d. Other considerations that come with rate increases are called elasticity, every 10% increase results in a 2% decrease in revenues caused by water use cutbacks.
- e. Operating costs go up every year and inflation drives an approximate increase of 4%. Staffing needs were not built in, but items like CAL PERS for existing staff is projected to cost more.

Below are the three increase strategies that Alex Handlers explained:

1. Scenario I: Best Management (fully funded rate increase to do everything now). This would result in a 40% increase in the first year then 10% increase each year for the next three years and then a 5% increase.
2. Scenario II: Deferred Approach (phased approach over a longer period of time). This is a gentler increase over five (5) years; however, the dollar value of the projects can go up due to inflation and delays. First year 25%, then each year thereafter would be 20%, 15%, 10% and 10%.

Karen Tracy asked if we could add another line to the household use structure for those who only use 1-2 units and how rate increases would affect them.

Alex Handlers replied that he would create these water use tables and add it to his next presentation so different low water users can see how they are impacted.

3. Scenario III: First year 25%, 2<sup>nd</sup> year 20%, 3<sup>rd</sup> year 15%, 4<sup>th</sup> year 10%, and fifth year 10%.

Water Rate Structure: Prop 218 keeps us from charging higher rates to commercial users.

Kathleen Radnich asked if commercial rates are based off the pipe size, then how you could charge commercial entities higher rates that are not on residential systems.

AGM Greer responded that JBWD can only charge for the water used.

You can have different costs of water use by tiers. Low water use customers can impact charges for cost of service. Tiers have been revamped to give a break to low water users with 43% of our water sales being in Tier 1.

GM Sauer asked for the comparison of our average use with that of metropolitan users.

Alex replied that JBWD is lower in use.

GM Sauer offered a scenario of adjusting the tiers, which then allows increased revenue streams to be applied to CIP (Capital Improvement Plan) needs.

Alex stated that we could increase the steepness of the cost of the four tiers, which would encourage users to cut back more. Because we already have tiered rates, uniform rates are not recommended. This was followed by a short discussion about putting rates by costs/gallons and most of the participants liked this idea.

GM Sauer suggested adjusting the fixed rate to 40/60% usage. A fixed monthly rate that is lower may better meet the needs of the fixed income families.

Karen Tracy asked about doing a “Best Management Plan but pushing the Chromium costs out of it.

Alex agreed that it could be left out.

Tom Kayne asked about raising rates for 5 years but budgeting for 10 years.

AGM Greer clarified that we can do less than what the Board adopts but we cannot do more.

GM Sauer explained that if we do less, then the following year (in lieu of giving a rebate) we should take the excess monies and apply them to catch up what did not get done the next year plus what that year’s improvements were budgeted for. He believes we can do two times more pipeline install using in house staff (hiring more) than if we use a consultant.

Tom Kayne asked how the ratepayers could protest this. The answer was  $50\% + 1 = 2,400$  written protests.

Fund Reserve Policy – An option to provide flexibility to respond to financial challenges (keeping six months reserves of operating and debt service expenses).

We also now have to have a “Debt Management Policy” due to a new CA Law 8855. This is required prior to issuing any new debt.

A discussion over the January rate increase vs. the one in March ensued. Everyone agreeable to **NOT** do the January increase and to establish the new increase in March.

Tom Kayne asked what the Staff’s priorities were.

GM Sauer replies 1<sup>st</sup> Infrastructure, 2<sup>nd</sup> Staffing, 3<sup>rd</sup> Recharging the Aquifer.

## 7. ADJOURNMENT:

MSC/Long/Tracy 5/0/1 to adjourn the October 18, 2017 Special Workshop Meeting of the Citizens Advisory Committee.

Respectfully submitted,

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Curt Sauer, General Manager

JOSHUA BASIN WATER DISTRICT  
MEETING AGENDA REPORT

Meeting of the Citizens Advisory Committee

November 1, 2017

Report to: President and Members of the CAC

Prepared by: Susan Greer

TOPIC:  
ONGOING RATE STUDY DISCUSSION

RECOMMENDATION:  
Receive information, provide direction for ongoing rate study

ANALYSIS:  
Our rate study consultant, Alex Handlers, will be at the meeting again to continue the rate study discussion. New scenarios discussed at the last meeting will be presented for your consideration as we continue to fine-tune the financial projections and rates. The CAC will receive a similar presentation earlier in the same day.

Alex will provide a presentation early next week and it will be forwarded as soon as received so there is time to preview before the meeting

FISCAL IMPACT:  
N/A

# Joshua Basin Water District



## Water Rate Study Revised Draft Findings

Revised Draft 10/30/17



**BARTLE WELLS ASSOCIATES**  
INDEPENDENT PUBLIC FINANCE ADVISORS



# Joshua Basin Water District

## Water Rate Study – Summary of Key Issues

### Background

- JBWD is a community-governed public agency
- JBWD provides water service to a 96-square-mile service area
- Facilities include roughly 310 miles of pipelines, 5 wells, 17 water tanks, 11 booster stations, and a groundwater recharge facility
- Historically, groundwater has been the sole source of water supply
- The groundwater basin is in overdraft with minimal natural recharge
- JBWD recently started importing water from Mojave Water Agency to help recharge the groundwater basin and reduce further depletion
- District serves over 4,500 active accounts, about 94% are single family homes; the District has roughly 1,000 additional inactive accounts

### Rates & Finances

- JBWD is a self-supporting enterprise
  - Rates are the main source of revenue
  - Revenues must be adequate to fund the cost of providing service including long-term operating and capital needs
- After a decade of minimal to no rate increases from 1996-2006, District provided good financial stewardship by implementing gradual rate increases to support financial stability and funding of ongoing capital needs
- Last water rate study completed 2013
  - District adopted 5 years of 7% rate increases
  - *Average annual increase since 2007 is roughly 4.5%*

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Adopted Rates</b>	6%	6%	6%	6%	0%	0%	0%	7%	7%	7%	7%	7%
<b>Implemented</b>	6%	6%	3%	6%	3%	0%	0%	7%	7%	7%	7%	tbd

- Water rates in lower-middle range compared to other regional agencies
  - Monthly Bill for a typical single family home with roughly average use of 9 hcf = \$54.78  
*(Note: 1 hcf = 100 cubic feet, or about 748 gallons; 9 hcf = about 220 gallons per day)*
  - Total monthly charge is equivalent to approximately \$0.81 per each 100 gallons of water use
  - Roughly 3/4<sup>ths</sup> of District’s residential bills are at or below this level
- JBWD currently has healthy fund reserves of roughly \$7.1 million (available), but will need to draw down reserves in upcoming years to help fund capital improvement needs
- JBWD has been successful at obtaining substantial grant funding
  - \$7.2 million grant funding received for recharge project (via DWR, CDPH, MWA grants) plus additional funding received from Mojave Water Agency
  - District pursuing grants and state-subsidized low-interest loans for Chromium 6 project.

## Financial Challenges

- **District facing substantial financial challenges that will require rate increases in upcoming years**
- **Long-Term Water Supply**
  - Groundwater provides 100% of District supply
  - Long-term problem: local aquifers receive minimal natural recharge resulting in significant decreases in groundwater levels; groundwater aquifer at risk
  - 71-mile Morongo Pipeline (funded largely by taxpayers) and grant-funded recharge facilities will help replenish aquifer (ultimately may need to import 100% of water supply)
  - Imported water purchased from MWA currently costs \$569 per acre-foot with rates expected to increase 5% per year; costs for Cal Water Fix to be funded via MWA property taxes
  - Total water sales down from about 1,650 acre-feet to 1,200 acre-feet per year
  - The cost of 1,000 AF is about \$570,000 per year (JBWD purchased about 500 AF last year)
- **Infrastructure Repair, Replacement, and Rehabilitation**
  - 175 miles of water pipelines were installed roughly 40 – 70 years ago and will be reaching the end of their useful lives in upcoming years
  - Many old pipelines are inadequately sized & no longer meet modern fire flow requirements
  - Tanks, wells and booster pump stations are aging and also will need rehab or replacement
  - Dudek (JBWD engineering consultant) evaluated the water system and developed a 30-Year Capital Improvement Program that identifies about \$2.5 million in annual funding needs for pipelines, tanks, and booster pump stations
  - Additional ongoing funding needed for equipment/technology/vehicle replacement, a wide range of studies and reports, building improvements, and meter replacements
  - JBWD anticipating an initial program to replace all older meters at a cost of \$2 million in about 5 years; subsequently would prefer to have an annual set-aside for future replacements
- **Chromium 6 Treatment**
  - Local groundwater contains levels of Chromium 6 that slightly exceed State's new stringent standards
    - Federal standard is 100 ppb (parts per billion), California's prior standard was 50 ppb but was revised to 10 ppb in recent years
  - JBWD awarded \$2 million, 5-year, 0% SRF Planning Loan with \$500,000 grant component
  - JBWD preliminary engineering cost estimates for construction and operation
    - Infrastructure/equipment: \$14 million (potential SRF grant funding may reduce JBWD's funding needs)
    - Annual operating costs: Latest estimate = \$632,000 (current \$)
  - Requirement to achieve compliance by 2020 has been deferred
    - In May 2017, Court struck down California's new 10 ppb standard since it failed to properly consider economic feasibility
    - Chromium 6 funding needs may be deferred
  - BWA can evaluate impact of potential future Chromium 6 funding needs



➤ **Ongoing Operating Cost Inflation**

- JBWD faces ongoing cost increases for everything from insurance to electricity to staffing, etc.
- CalPERS funding requirements are increasing
- Cost inflation for utilities tends to be higher than CPI for consumers
  - Utilities are capital & labor intensive industries
- Small annual rate increases needed just to keep up with operating cost inflation

**Financial Projections & Preliminary Scenarios**

➤ BWA developed 10-year financial projections to evaluate annual revenue requirements and project rate increases

➤ **Basic Assumptions:**

- Based on 2017/18 Budget
- Operating cost inflation projected at 4% per year
- Growth projected at 10 new single family homes or equivalents per year over next 5 years
- Water sales projected to decline by 2% for each 10% of rate increases (-0.2 elasticity)
- Recharge water purchases from MWA vary as shown for each financial scenario with a target of purchasing 1,000 acre-feet within 5 years
- Capital improvement funding varies as shown for each financial scenario with a target level of \$2.5 million per year within 5 years. Future funding escalates by 3%.
- Funding for Annual Project Funding/Meter Replacements including 5 years of funding for a District-wide meter replacement program as well as an estimate of average annual funding needs for other ongoing non-operating expenses including equipment/technology/vehicles, building improvements, studies and reports, and meter replacements. The level of funding decreases after 5 years, when the initial meter replacement program is complete.
- Chromium 6 treatment program costs
  - Planning
  - Capital facilities & equipment: \$14 million
  - Annual operating expenses: \$632,000 in current dollars or about \$800,000 when facility comes online on January 1, 2021.

➤ **Financial Scenarios:** Preliminary draft financial and rate projections were developed for 3 draft financial scenarios. A summary of each scenario, key financial assumptions, and rate impacts are included on the first attached table. Subsequent tables show detailed projections for each draft scenario.

- Scenario 1 – Best Management Practice with Deferred Chromium 6 Treatment
- Scenario 2 – Phased Approach with Deferred Chromium 6 Treatment
- Scenario 3 – \$15 Million of Debt for Capital Improvements & Meter Replacements
- Additional Scenario 4 shows projections shows Scenario 3 with No Chromium 6 Project

## Rate Projections

- Draft financial projections show need for substantial rate increases over the next 5 years.
- Lower rate increases in near term results in higher rate increases in longer term and vice versa
- Currently assuming 5 years of rate increases would be adopted via the Proposition 218 process
- Draft rate projections for each scenario are included in the attached tables
- Use of debt financing allows for lower rate increases over next 5 years...but also results in need for more rate increases in later years.

## Water Rate Structure

- Water rates include 2 components
  - Basic Monthly Fee: Fixed meter charge based on meter size (46% of rate revenues)
    - Higher charges for larger meters based on increased capacity needs in water system
  - Water Consumption Charge: Billed based on metered water use (54% of rate revenues)
    - Smallest meters (3/4" & 1") serve mostly single family homes and pay according to a 4-tier rate structure (*4<sup>th</sup> tier was added based on input from the CAC in a prior study*)
    - All others pay uniform charge (equal to the weighted average of tiers)
- Rate structure needs to comply with substantive requirements of Proposition 218

## Rate Structure Modifications

- Revised tables assume some modifications to rate structure
  - Fixed rate revenue recovery reset to 40% of total rate revenues (results in a little less rate increases to fixed charges and more increases to water consumption charges)
  - Increased tier steepness (less increases to lowest tiers & more increases to higher tiers)
  - Note: A suggestion was also made to revise the 3<sup>rd</sup> Tier breakpoint down to 15 hcf...but this current draft of tables does not yet reflect that potential revision

*Note: Rates must comply with the substantive provisions of Proposition 218 and reasonably reflect the cost of providing service to all customers. Rates will need to be supported by a reasonable rationale and calculations.*

## Fund Reserve Policy & Targets

- JBWD can adopt a flexible fund reserve target policy to support prudent financial management
- Fund reserves help mitigate financial risk and provide flexibility for responding to financial challenges
- Goal: identify target levels of fund reserves to maintain to provide a financial cushion for dealing with unanticipated fluctuations in revenues and/or expenses and emergencies
- Preliminary ideas:
  - Operating & Rate Stabilization Reserves: 6 months of operating & debt service expenses
  - Emergency Capital Reserves: \$1 - \$2 million
  - Target levels for average annual funding needs (roughly \$150,000 per year after initial 5-year meter replacement program)
    - Equipment/technology/vehicles
    - Studies & reports
    - Building improvements
    - Meter replacements
  - JBWD can also maintain other reserves that may not have target funding levels, such as
    - Opportunity Reserve
    - Restricted reserves for customer/project deposits, water & wastewater capacity charges, Copper Mountain Mesa Assessment District

## Debt Management Policy

- Pursuant to new requirements of California Government Code 8855, agencies must adopt a debt management policy prior to issuing future debt
- Policy must address a handful of issues (e.g. purposes for which debt may be used, policy goals, internal procedures, etc.)
- BWA recommends JBWD adopt a Debt Management Policy as part of the rate study process

## Project Schedule

- Oct-18 Present preliminary findings to CAC and Board & received initial input
  - Nov-1 Present revised finding to CAC and Board & receive additional input
  - Nov-14/15 Present honed finding to CAC and Board & receive additional input for development of draft recommendations
  - Nov/Dec Finalize rate recommendations & draft report
  - Dec Draft and mail Prop 218 notices
  - Jan/Feb Public Hearing on the proposed rates (at least 45 days after mailing Prop 218 notices)
  - Mar-1 Target date for new rates to become effective (January 1 in subsequent years)
-

## Summary of Preliminary Draft Financial Scenarios

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
<b>Scenario 1: Best Management Practice, Deferred Cr-6</b>										
<b>Key Assumptions</b>										
CIP Funding	\$700,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,600,000	\$2,700,000	\$2,800,000	\$2,900,000
Annual Project Funding	\$237,000	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000	\$400,000	\$412,000	\$424,000	\$437,000
Recharge Water Purchases	\$287,000	\$597,000	\$627,000	\$658,000	\$691,000	\$726,000	\$762,000	\$800,000	\$840,000	\$882,000
<i>Recharge (Acre-Feet)</i>	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Chrome 6 Operating Costs	\$0	\$0	\$0	\$0	\$0	\$500,000	\$800,000	\$832,000	\$865,000	\$900,000
Chrome 6 Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$275,000	\$275,000	\$275,000	\$275,000
<b>Rate Increases &amp; Bill Impacts</b>										
Effective Date of Rate Increase	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1
Rate Increase %	40%	30%	20%	10%	5%	7%	7%	4%	4%	4%
<i>Cumulative Increase %</i>		82%	118%	140%	152%	170%	189%	200%	212%	225%
Typical Residential Bill (9 hcf)	\$54.78	\$75.69	\$99.06	\$119.72	\$132.17	\$139.29	\$149.04	\$159.47	\$165.85	\$172.48
<b>Scenario 2: Phased Approach, Deferred Cr-6</b>										
<b>Key Assumptions</b>										
CIP Funding	\$700,000	\$1,000,000	\$1,250,000	\$1,500,000	\$2,000,000	\$2,000,000	\$2,250,000	\$2,500,000	\$2,750,000	\$3,000,000
Annual Project Funding	\$237,000	\$750,000	\$750,000	\$750,000	\$750,000	\$750,000	\$400,000	\$412,000	\$424,000	\$437,000
Recharge Water Purchases	\$287,000	\$358,000	\$439,000	\$526,000	\$622,000	\$726,000	\$762,000	\$800,000	\$840,000	\$882,000
<i>Recharge (Acre-Feet)</i>	500	600	700	800	900	1,000	1,000	1,000	1,000	1,000
Chrome 6 Operating Costs	\$0	\$0	\$0	\$0	\$0	\$500,000	\$800,000	\$832,000	\$865,000	\$900,000
Chrome 6 Debt Service	\$0	\$0	\$0	\$0	\$0	\$0	\$275,000	\$275,000	\$275,000	\$275,000
<b>Rate Increases &amp; Bill Impacts</b>										
Effective Date of Rate Increase	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1
Rate Increase %	25%	20%	18%	15%	10%	12%	12%	5%	5%	5%
<i>Cumulative Increase %</i>		50%	77%	104%	124%	151%	181%	195%	210%	225%
Typical Residential Bill (9 hcf)	\$54.78	\$67.10	\$80.88	\$96.09	\$111.09	\$122.59	\$137.30	\$153.78	\$161.47	\$169.54
<b>Scenario 3: \$15 Million Debt for CIP &amp; Meter Replacements</b>										
<b>Key Assumptions</b>										
CIP Funding	\$700,000	\$15,000,000	-	-	-	-	\$1,000,000	\$1,200,000	\$1,750,000	\$2,500,000
Annual Project Funding	\$237,000	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000	\$400,000	\$412,000	\$424,000	\$437,000
Recharge Water Purchases	\$287,000	\$597,000	\$627,000	\$658,000	\$691,000	\$726,000	\$762,000	\$800,000	\$840,000	\$882,000
<i>Recharge (Acre-Feet)</i>	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Chrome 6 Operating Costs	\$0	\$0	\$0	\$0	\$0	\$500,000	\$800,000	\$832,000	\$865,000	\$900,000
Chrome 6 Debt Service	\$0	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	\$1,325,000	\$1,325,000	\$1,325,000	\$1,325,000
<b>Rate Increases &amp; Bill Impacts</b>										
Effective Date of Rate Increase	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1
Rate Increase %	15%	15%	15%	12%	12%	15%	15%	15%	12%	12%
<i>Cumulative Increase %</i>		32%	52%	70%	91%	119%	152%	190%	225%	264%
Typical Residential Bill (9 hcf)	\$54.78	\$61.48	\$70.95	\$81.98	\$92.18	\$103.68	\$119.23	\$137.11	\$157.68	\$176.60

<b>Scenario 1: Best Management Practice, Deferred Cr-6</b>						
	2017/18	2018/19	2019/20	2020/21	2021/22	
<b>Key Assumptions</b>						
CIP Funding	\$700,000	\$2,500,000	\$2,500,000	\$2,500,000	\$2,500,000	
Annual Project Funding	\$237,000	\$750,000	\$750,000	\$750,000	\$750,000	
Recharge Water Purchases	\$287,000	\$597,000	\$627,000	\$658,000	\$691,000	
<i>Recharge (Acre-Feet)</i>	500	1,000	1,000	1,000	1,000	
Chrome 6 Operating Costs	\$0	\$0	\$0	\$0	\$0	
Chrome 6 Debt Service	\$0	\$0	\$0	\$0	\$0	
<b>Rate Increases &amp; Bill Impacts</b>						
Effective Date of Rate Increase	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1	
Rate Increase %	<b>40%</b>	<b>30%</b>	<b>20%</b>	<b>10%</b>	<b>5%</b>	
<i>Cumulative Increase %</i>	40%	82%	118%	140%	152%	
Typical Residential Bill (9 hcf)	\$54.78	\$75.69	\$99.06	\$119.72	\$132.17	\$139.29

<b>Scenario 2: Phased Approach, Deferred Cr-6</b>						
	2017/18	2018/19	2019/20	2020/21	2021/22	
<b>Key Assumptions</b>						
CIP Funding	\$700,000	\$1,000,000	\$1,250,000	\$1,500,000	\$2,000,000	
Annual Project Funding	\$237,000	\$750,000	\$750,000	\$750,000	\$750,000	
Recharge Water Purchases	\$287,000	\$358,000	\$439,000	\$526,000	\$622,000	
<i>Recharge (Acre-Feet)</i>	500	600	700	800	900	
Chrome 6 Operating Costs	\$0	\$0	\$0	\$0	\$0	
Chrome 6 Debt Service	\$0	\$0	\$0	\$0	\$0	
<b>Rate Increases &amp; Bill Impacts</b>						
Effective Date of Rate Increase	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1	
Rate Increase %	<b>25%</b>	<b>20%</b>	<b>18%</b>	<b>15%</b>	<b>10%</b>	
<i>Cumulative Increase %</i>	25%	50%	77%	104%	124%	
Typical Residential Bill (9 hcf)	\$54.78	\$67.10	\$80.88	\$96.09	\$111.09	\$122.59

<b>Scenario 3: \$15 Million Debt for CIP &amp; Meter Replacements</b>						
	2017/18	2018/19	2019/20	2020/21	2021/22	
<b>Key Assumptions</b>						
CIP Funding	\$700,000	\$15,000,000	-	-	-	
Annual Project Funding	\$237,000	\$250,000	\$250,000	\$250,000	\$250,000	
Recharge Water Purchases	\$287,000	\$597,000	\$627,000	\$658,000	\$691,000	
<i>Recharge (Acre-Feet)</i>	500	1,000	1,000	1,000	1,000	
Chrome 6 Operating Costs	\$0	\$0	\$0	\$0	\$0	
Chrome 6 Debt Service	\$0	\$1,050,000	\$1,050,000	\$1,050,000	\$1,050,000	
<b>Rate Increases &amp; Bill Impacts</b>						
Effective Date of Rate Increase	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1	
Rate Increase %	<b>15%</b>	<b>15%</b>	<b>15%</b>	<b>12%</b>	<b>12%</b>	
<i>Cumulative Increase %</i>	15%	32%	52%	70%	91%	
Typical Residential Bill (9 hcf)	\$54.78	\$61.48	\$70.95	\$81.98	\$92.18	\$103.68

# **Joshua Basin Water District**

## **Financial & Rate Projections**

### Scenario 1

Best Management Practice  
With Deferred Chrome 6 Treatment  
No Debt  
40% Fixed Rate Revenue Recovery  
Steeper Water Rate Tiers

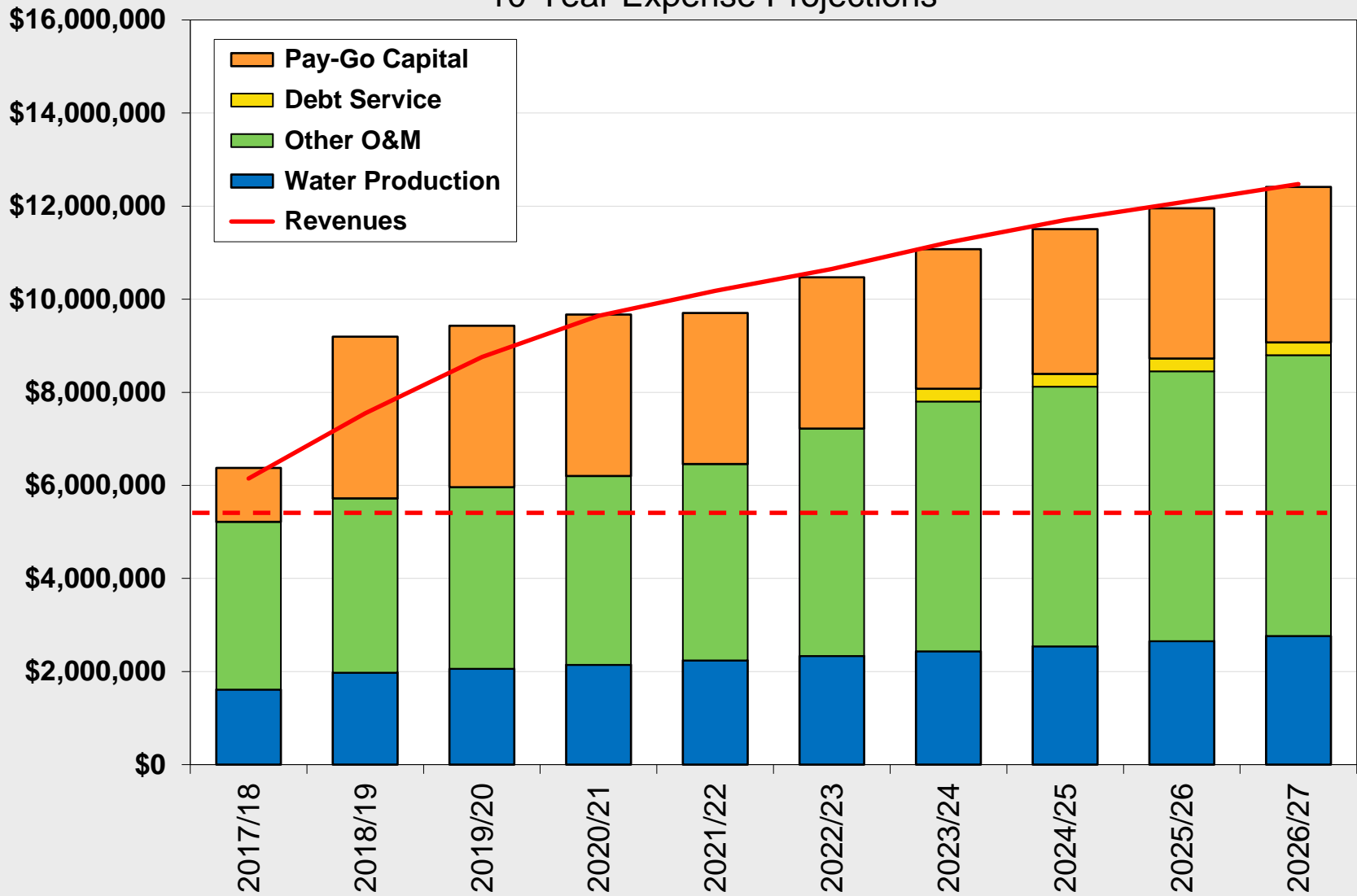
<b>Table 1</b>		<b>Cash Flow Projections: Best Management Practice</b>				<b>Years 0 - 5</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
		<b>Projected 2017/18</b>	<b>Projected 2018/19</b>	<b>Projected 2019/20</b>	<b>Projected 2020/21</b>	<b>Projected 2021/22</b>
1	Effective Date of Rate Adjustment	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1
2	Rate Adjustment %	40%	30%	20%	10%	5%
4	Growth: New EDUs	10	10	10	10	10
5	Growth in Billable EDUs %	0.2%	0.2%	0.2%	0.2%	0.2%
6	Wtr Demand Elasticity (Response to Rate Incr)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
7	Change in Water Use After Rate Increase	-8.0%	-6.0%	-4.0%	-2.0%	-1.0%
8	Water Purchases from MWA (AF)	500	1,000	1,000	1,000	1,000
9	MWA Rate per AF	\$569	\$597	\$627	\$658	\$691
10	Interest Earnings Rate	1.0%	1.5%	2.0%	2.0%	2.0%
11	Annual Cost Escalator	4.0%	4.0%	4.0%	4.0%	4.0%
12	<b>Beginning Fund Reserves</b>	\$7,151,000	\$6,926,000	\$5,281,000	\$4,609,000	\$4,580,000
13	<b>REVENUES</b>					
14	Basic Monthly Fees	1,770,000	2,404,000	2,996,000	3,439,000	3,700,000
15	Water Usage Charges	2,038,000	2,618,000	3,108,000	3,469,000	3,677,000
16	Locked Meter Charges	319,000	425,000	529,000	605,000	650,000
17	Standby Revenue	1,140,000	1,139,000	1,138,000	1,137,000	1,136,000
18	Property Taxes	428,000	437,000	446,000	455,000	464,000
19	Private Fire Svc & Special Services	137,000	140,000	143,000	146,000	149,000
20	Water Capacity & Meter Install Fees	53,000	53,000	54,000	55,000	56,000
21	Interest Earnings	50,000	104,000	106,000	92,000	92,000
22	HDMC WWTP Reimbs (+22%)	200,000	207,000	216,000	224,000	233,000
23	Other Revenues	12,000	20,000	20,000	20,000	20,000
24	<b>Total Revenues</b>	<b>6,147,000</b>	<b>7,547,000</b>	<b>8,756,000</b>	<b>9,642,000</b>	<b>10,177,000</b>
25	SRF Grants	100,000			200,000	10,000,000
26	SRF Loans				1,510,000	
27	Debt Proceeds					
28	<b>EXPENSES</b>					
29	<b>Operating &amp; Maintenance</b>					
30	Production	1,324,000	1,377,000	1,432,000	1,489,000	1,549,000
31	Recharge Water Purchases from MWA	287,000	597,000	627,000	658,000	691,000
32	Distribution	1,000,000	1,040,000	1,082,000	1,125,000	1,170,000
33	Customer Service	489,000	509,000	529,000	550,000	572,000
34	Administration	1,048,000	1,090,000	1,134,000	1,179,000	1,226,000
35	Engineering	237,000	246,000	256,000	266,000	277,000
36	Finance	533,000	554,000	576,000	599,000	623,000
37	Personnel & Legal	134,000	139,000	145,000	151,000	157,000
38	HDMC WWTP Operations (reimbursable)	163,000	170,000	177,000	184,000	191,000
39	Chrome 6 Operations	0	0	0	0	0
40	<b>Subtotal</b>	<b>5,215,000</b>	<b>5,722,000</b>	<b>5,958,000</b>	<b>6,201,000</b>	<b>6,456,000</b>
41	<b>Debt Service</b>					
42	Debt Service for Capital Improvements	-	-	-	-	-
43	Chrome 6 SRF Loan Repayment	-	-	-	-	-
44	<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
45	<b>Capital/Non-Operating</b>					
46	Capital Improvements	700,000	2,500,000	2,500,000	2,500,000	2,500,000
47	Annual Project Funding/Meter Repls	237,000	750,000	750,000	750,000	750,000
48	Chromium 6 Project	100,000	0	0	1,710,000	10,000,000
49	Morongo Basin Pipeline Debt Reimbs	220,000	220,000	220,000	220,000	0
50	<b>Subtotal</b>	<b>1,257,000</b>	<b>3,470,000</b>	<b>3,470,000</b>	<b>5,180,000</b>	<b>13,250,000</b>
51	<b>Total Expenses</b>	<b>6,472,000</b>	<b>9,192,000</b>	<b>9,428,000</b>	<b>11,381,000</b>	<b>19,706,000</b>
52	<b>Revenues Less Expenses</b>	<b>(225,000)</b>	<b>(1,645,000)</b>	<b>(672,000)</b>	<b>(29,000)</b>	<b>471,000</b>
53	<b>Ending Fund Reserves</b>	<b>6,926,000</b>	<b>5,281,000</b>	<b>4,609,000</b>	<b>4,580,000</b>	<b>5,051,000</b>
54	Debt Service Coverage	-	-	-	-	-
55	Min Fund Rsrv Target (50% O&M+Debt + \$1M)	3,607,500	3,861,000	3,979,000	4,100,500	4,228,000
56	Max Fund Rsrv Target (100% O&M+Debt + \$2M)	7,215,000	7,722,000	7,958,000	8,201,000	8,456,000
57	Annual pay-go funding generated for CIP	712,000	1,605,000	2,578,000	3,221,000	3,721,000

<b>Table 1</b>		<b>Cash Flow Projections: Best Management Practice</b>					<b>Year 6 - 10</b>
		<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	
		<b>Projected 2022/23</b>	<b>Projected 2023/24</b>	<b>Projected 2024/25</b>	<b>Projected 2025/26</b>	<b>Projected 2026/27</b>	<b>Esc Factor</b>
1	Effective Date of Rate Adjustment	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	
2	Rate Adjustment %	7%	7%	4%	4%	4%	
4	Growth: New EDUs	10	10	10	10	10	
5	Growth in Billable EDUs %	0.2%	0.2%	0.2%	0.2%	0.2%	
6	Wtr Demand Elasticity (Response to Rate Incr)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	
7	Change in Annual Water Consumption	-1.4%	-1.4%	-0.8%	-0.8%	-0.8%	
8	Water Purchases from MWA (AF)	1,000	1,000	1,000	1,000	1,000	
9	MWA Rate per AF	\$726	\$762	\$800	\$840	\$882	5.0%
10	Interest Earnings Rate	2.0%	2.0%	2.0%	2.0%	2.0%	
11	Annual Cost Escalator	4.0%	4.0%	4.0%	4.0%	4.0%	
12	<b>Beginning Fund Reserves</b>	\$5,051,000	\$5,228,000	\$5,373,000	\$5,568,000	\$5,699,000	
13	<b>REVENUES</b>						
14	Basic Monthly Fees	3,931,000	4,215,000	4,454,000	4,641,000	4,836,000	
15	Water Usage Charges	3,848,000	4,060,000	4,239,000	4,374,000	4,512,000	
16	Locked Meter Charges	689,000	738,000	778,000	809,000	841,000	
17	Standby Revenue	1,135,000	1,134,000	1,133,000	1,132,000	1,131,000	
18	Property Taxes	473,000	482,000	492,000	502,000	512,000	2.0%
19	Private Fire Svc & Special Services	152,000	155,000	158,000	161,000	164,000	2.0%
20	Water Capacity & Meter Install Fees	57,000	57,000	58,000	59,000	60,000	
21	Interest Earnings	101,000	105,000	107,000	111,000	114,000	
22	HDMC WWTP Reimbs (+22%)	243,000	253,000	262,000	273,000	284,000	
23	Other Revenues	20,000	20,000	20,000	20,000	20,000	
24	<b>Total Revenues</b>	<b>10,649,000</b>	<b>11,219,000</b>	<b>11,701,000</b>	<b>12,082,000</b>	<b>12,474,000</b>	
25	Grants						
26	SRF Planning & Construction Loan	4,000,000					
27	Debt Proceeds						
28	<b>EXPENSES</b>						
29	<b>Operating &amp; Maintenance</b>						
30	Production	1,611,000	1,675,000	1,742,000	1,812,000	1,884,000	
31	Recharge Water Purchases from MWA	726,000	762,000	800,000	840,000	882,000	
32	Distribution	1,217,000	1,266,000	1,317,000	1,370,000	1,425,000	
33	Customer Service	595,000	619,000	644,000	670,000	697,000	
34	Administration	1,275,000	1,326,000	1,379,000	1,434,000	1,491,000	
35	Engineering	288,000	300,000	312,000	324,000	337,000	
36	Finance	648,000	674,000	701,000	729,000	758,000	
37	Personnel & Legal	163,000	170,000	177,000	184,000	191,000	
38	HDMC WWTP Operations (reimburseable)	199,000	207,000	215,000	224,000	233,000	
39	Chrome 6 Operations	500,000	800,000	832,000	865,000	900,000	
40	<b>Subtotal</b>	<b>7,222,000</b>	<b>7,799,000</b>	<b>8,119,000</b>	<b>8,452,000</b>	<b>8,798,000</b>	
41	<b>Debt Service</b>						
42	Debt Service for Capital Improvements	-	-	-	-	-	
43	Chrome 6 SRF Loan Repayment	-	275,000	275,000	275,000	275,000	
44	<b>Subtotal</b>	<b>0</b>	<b>275,000</b>	<b>275,000</b>	<b>275,000</b>	<b>275,000</b>	
45	<b>Capital/Non-Operating</b>						
46	Capital Improvements (Pipes/Wells/Boosters)	2,500,000	2,600,000	2,700,000	2,800,000	2,900,000	
47	Annual Project Funding	750,000	400,000	412,000	424,000	437,000	3.0%
48	Chromium 6 Project	4,000,000	0	0	0	0	
49	Morongo Basin Pipeline Debt Reimbs	0	0	0	0	0	
50	<b>Subtotal</b>	<b>7,250,000</b>	<b>3,000,000</b>	<b>3,112,000</b>	<b>3,224,000</b>	<b>3,337,000</b>	
51	<b>Total Expenses</b>	<b>14,472,000</b>	<b>11,074,000</b>	<b>11,506,000</b>	<b>11,951,000</b>	<b>12,410,000</b>	
52	<b>Revenues Less Expenses</b>	<b>177,000</b>	<b>145,000</b>	<b>195,000</b>	<b>131,000</b>	<b>64,000</b>	
53	<b>Ending Fund Reserves</b>	<b>5,228,000</b>	<b>5,373,000</b>	<b>5,568,000</b>	<b>5,699,000</b>	<b>5,763,000</b>	
54	Debt Service Coverage	-	12.44	13.03	13.20	13.37	
55	Min Fund Rsrv Target (50% O&M+Debt + \$1M)	4,611,000	5,037,000	5,197,000	5,363,500	5,536,500	
56	Max Fund Rsrv Target (100% O&M+Debt + \$2M)	9,222,000	10,074,000	10,394,000	10,727,000	11,073,000	
57	Annual pay-go funding generated for CIP	3,427,000	3,145,000	3,307,000	3,355,000	3,401,000	



# Joshua Basin Water District 10-Year Expense Projections

Scenario 1  
Best Mgmt Practice



*Excludes capital projects funded by debt.*

Table 2  
 Joshua Basin Water District  
 Fixed Meter Charge Calculation

	Mar-1 2018	Jan-1 2019	Jan-1 2020	Jan-1 2021	Jan-1 2022	
<b>Water Rate Revenue Recovery</b>						
Annualized Revenues w/ Increase	\$4,467,000	\$5,627,000	\$6,619,000	\$7,215,000	\$7,546,000	
<b>Fixed Rate Recovery</b>						
Cost Recovery Allocation %	40%	40%	40%	40%	40%	
Cost Recovery Allocation \$	\$1,786,800	\$2,250,800	\$2,647,600	\$2,886,000	\$3,018,400	
<b>Meter Equivalents</b>						
Existing Meter Equivalents	4,764	4,774	4,784	4,794	4,804	
Projected Growth	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	
Total	4,774	4,784	4,794	4,804	4,814	
<b>Rate per Meter Equivalent</b>						
Annual	\$374.31	\$470.52	\$552.32	\$600.80	\$627.06	
Monthly	31.19	39.21	46.03	50.07	52.25	
<b>Projected Fixed Monthly Meter Charges</b>						
<u>Meter Size</u>	<u>Capacity (gpm)</u>					
3/4" & 1"	30	\$31.19	\$39.21	\$46.03	\$50.07	\$52.25
1-1/2"	100	103.97	130.70	153.43	166.90	174.17
2"	160	166.35	209.12	245.49	267.04	278.67
3"	300	311.90	392.10	460.30	500.70	522.50
<b>Variable Rate Recovery</b>						
Cost Recovery Allocation %	60%	60%	60%	60%	60%	
Cost Recovery Allocation \$	\$2,680,200	\$3,376,200	\$3,971,400	\$4,329,000	\$4,527,600	
<b>Projected Water Use</b>	484,600	456,200	439,100	431,000	427,100	
<b>Average Rate per Unit (\$/hcf)</b>	\$5.53	\$7.40	\$9.04	\$10.04	\$10.60	

Table 3  
 Joshua Basin Water District  
 Projected Water Use & Consumption Charges

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
<b>Projected Water Use</b>						
Change in Use After Rate Increase		-8.0%	-6.0%	-4.0%	-2.0%	-1.0%
Billed Use by Tier for 3/4" & 1" Meters (hcf)						
Tier 1	188,189	185,200	183,000	181,500	180,800	180,400
Tier 2	91,526	80,500	73,300	68,900	66,800	65,800
Tier 3	76,742	65,700	58,600	54,400	52,400	51,500
Tier 4	86,482	71,300	61,900	56,500	54,000	52,800
Subtotal	442,939	402,700	376,800	361,300	354,000	350,500
All Other Use (hcf)	85,275	81,900	79,400	77,800	77,000	76,600
Total (hcf)	528,214	484,600	456,200	439,100	431,000	427,100
Total (acre-feet)	1,213	1,112	1,047	1,008	989	980
Annual Change		-8.3%	-5.9%	-3.7%	-1.8%	-0.9%
Cumulative Change		-8.3%	-13.6%	-16.9%	-18.4%	-19.1%
<b>Projected Water Consumption Charges</b>						
Billed Use by Tier for 3/4" & 1" Meters (hcf)						
Tier 1	\$3.00	\$4.50	\$6.05	\$7.45	\$8.30	\$8.80
Tier 2	3.50	5.50	7.40	9.11	10.15	10.76
Tier 3	4.00	6.50	8.74	10.76	11.99	12.71
Tier 4	4.50	7.50	10.09	12.42	13.84	14.67
All Other Use (hcf)	\$3.79	\$5.56	\$7.39	\$9.04	\$10.04	\$10.63
Projected Revenues		\$2,693,098	\$3,373,440	\$3,970,407	\$4,327,406	\$4,538,677
Revenue Target		2,680,200	3,376,200	3,971,400	4,329,000	4,527,600
<i>Difference %</i>		0.5%	-0.1%	0.0%	0.0%	0.2%

Table 4  
 Joshua Basin Water District  
 Projected Water Rates

Scenario 1  
 Best Management Practice, No Debt  
 40% Fixed Rate Recovery with Steeper Tiers

Effective	Current	Projected Water Rates						
		2018	2019	2020	2021	2022		
<b>OVERALL RATE ADJUSTMENT</b>		<b>40%</b>	<b>30%</b>	<b>20%</b>	<b>10%</b>	<b>5%</b>		
<b>BASIC MONTHLY FEE</b>								
<u>Meter Size</u>	<u>Accounts</u>	<u>Capacity</u>	<u>Monthly Rate</u>					
3/4" & 1"	4,503	30 gpm	\$25.78	\$31.19	\$39.21	\$46.03	\$50.07	\$52.25
1-1/2"	28	100 gpm	85.93	103.97	130.70	153.43	166.90	174.17
2"	18	160 gpm	137.49	166.35	209.12	245.49	267.04	278.67
3"	7	300 gpm	257.79	311.90	392.10	460.30	500.70	522.50
<b>MONTHLY WATER FLOW CHARGES</b>								
<b>For 3/4" and 1" Meters</b>			<u>Rate Per Unit (\$/hcf)</u>					
Tier 1	0 - 5 units		\$3.00	\$4.50	\$6.05	\$7.45	\$8.30	\$8.80
Tier 2	5.01 - 10 units		3.50	5.50	7.40	9.11	10.15	10.76
Tier 3	10.01 - 20 units		4.00	6.50	8.74	10.76	11.99	12.71
Tier 4	20.01 + units		4.50	7.50	10.09	12.42	13.84	14.67
<i>1 unit = one hundred cubic feet = 748 gallons</i>								
<b>For 1-1/2", 2" and 3" Meters</b>			<u>Rate Per Unit (\$/hcf)</u>					
Unit rate for all water use			\$3.79	\$5.56	\$7.22	\$8.66	\$9.53	\$10.01
<i>1 unit = one hundred cubic feet = 748 gallons</i>								
<b>PRIVATE FIRE PROTECTION CHARGES</b>								
<u>Svc Size</u>	<u>Accounts</u>	<u>Capacity</u>	<u>Monthly Rate</u>					
2"	1	160 gpm	\$12.62	\$16.64	\$20.91	\$24.55	\$26.70	\$27.87
3"	0	300 gpm	25.25	31.20	39.21	46.03	50.06	52.26
4"	6	500 gpm	50.50	52.00	65.34	76.72	83.44	87.09
6"	4	1,000 gpm	75.76	104.00	130.69	153.44	166.88	174.19
8"	7	1,600 gpm	113.62	166.40	209.10	245.50	267.00	278.70

Table 5  
 Joshua Basin Water District  
 Bill Impacts (3/4" & 1" Meter)

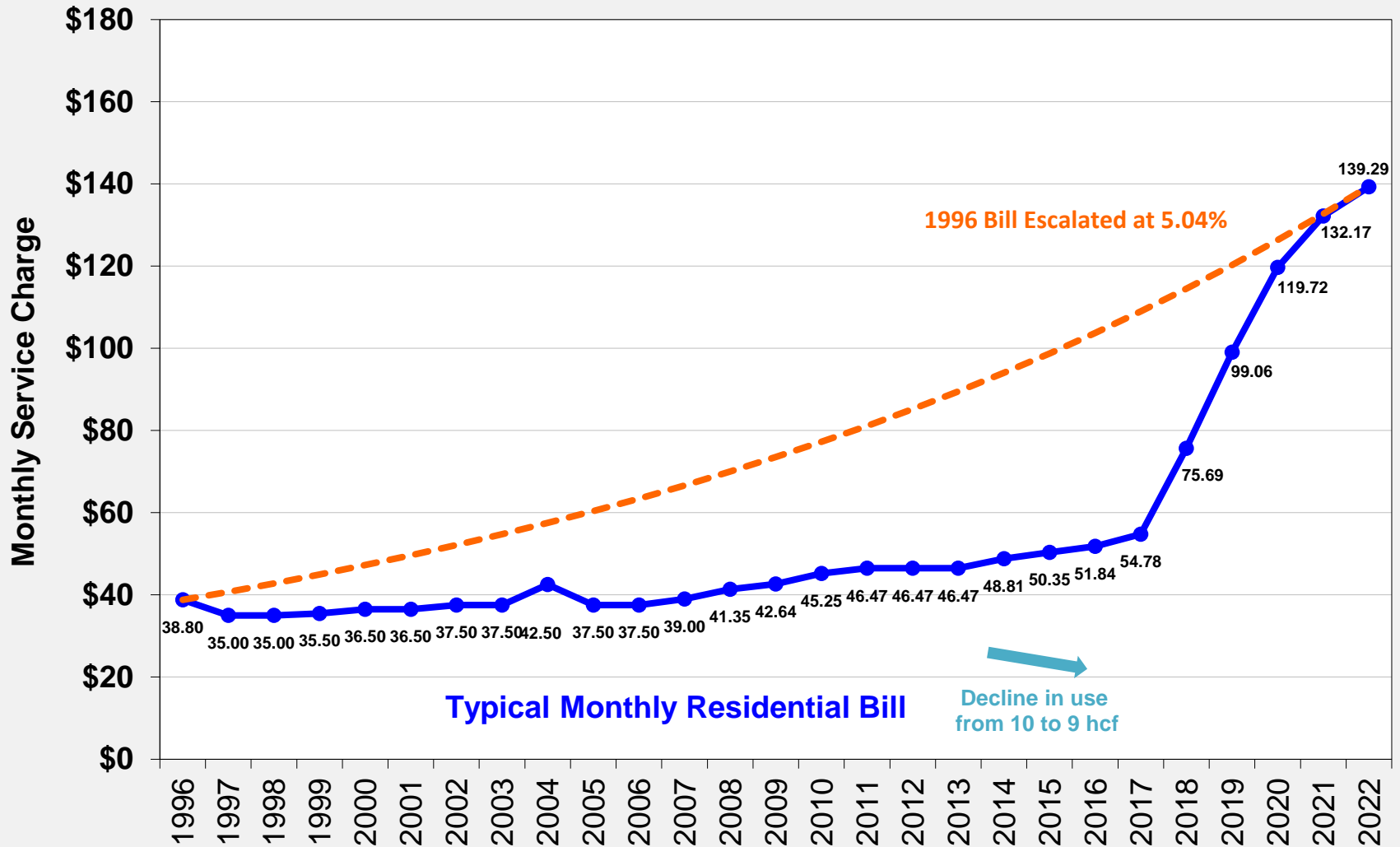
Scenario 1  
 Best Management Practice, No Debt  
 40% Fixed Rate Recovery with Steeper Tiers

Projected Rate Impacts										
Level of Use	Monthly Use	% of Bills at or Below	Current	Projected Monthly Water Bills					5-Year Avg Annual Impact	Avg Annual Impact
				2018	2019	2020	2021	2022		
<b>LOW</b>	<b>3 hcf</b>	<b>30%</b>	<b>\$34.78</b>	<b>\$44.69</b>	<b>\$57.36</b>	<b>\$68.38</b>	<b>\$74.97</b>	<b>\$78.65</b>		
			Increase \$	9.91	12.67	11.02	6.59	3.68	43.87	8.77
			Increase %	28.5%	28.4%	19.2%	9.6%	4.9%	126.1%	17.7%
<b>MEDIAN</b>	<b>6 hcf</b>	<b>55%</b>	<b>\$44.28</b>	<b>\$59.19</b>	<b>\$76.86</b>	<b>\$92.39</b>	<b>\$101.72</b>	<b>\$107.01</b>		
			Increase \$	14.91	17.67	15.53	9.33	5.29	62.73	12.55
			Increase %	33.7%	29.9%	20.2%	10.1%	5.2%	141.7%	19.3%
<b>AVERAGE</b>	<b>9 hcf</b>	<b>73%</b>	<b>\$58.28</b>	<b>\$81.19</b>	<b>\$106.46</b>	<b>\$128.83</b>	<b>\$142.32</b>	<b>\$150.05</b>		
			Increase \$	22.91	25.27	22.37	13.49	7.73	91.77	18.35
			Increase %	39.3%	31.1%	21.0%	10.5%	5.4%	157.5%	20.8%
<b>MOD-HIGH</b>	<b>20 hcf</b>	<b>90%</b>	<b>\$98.28</b>	<b>\$146.19</b>	<b>\$193.86</b>	<b>\$236.43</b>	<b>\$262.22</b>	<b>\$277.15</b>		
			Increase \$	47.91	47.67	42.57	25.79	14.93	178.87	35.77
			Increase %	48.7%	32.6%	22.0%	10.9%	5.7%	182.0%	23.0%
<b>HIGH</b>	<b>30 hcf</b>	<b>95%</b>	<b>\$188.28</b>	<b>\$296.19</b>	<b>\$395.66</b>	<b>\$484.83</b>	<b>\$539.02</b>	<b>\$570.55</b>		
			Increase \$	107.91	99.47	89.17	54.19	31.53	382.27	76.45
			Increase %	57.3%	33.6%	22.5%	11.2%	5.8%	203.0%	24.8%

# Joshua Basin Water District

## Historical Monthly Charges for a Typical Home

Scenario 1  
Best Mgmt Practice



**Scenario 1 - Best Management Practice with No Debt**  
**Summary of Cash Flow Projections (\$ millions)**

<b>Fiscal Year</b>	<b>17/18</b>	<b>18/19</b>	<b>19/20</b>	<b>20/21</b>	<b>21/22</b>	<b>22/23</b>	<b>23/24</b>	<b>24/25</b>	<b>25/26</b>	<b>26/27</b>
<b>Overall Rate Increases</b> Effective January 1	<b>40%</b>	<b>30%</b>	<b>20%</b>	<b>10%</b>	<b>5%</b>	<b>7%</b>	<b>7%</b>	<b>4%</b>	<b>4%</b>	<b>4%</b>
<b>Beginning Fund Reserves</b>	<b>\$7.2</b>	<b>\$6.9</b>	<b>\$5.3</b>	<b>\$4.6</b>	<b>\$4.6</b>	<b>\$5.1</b>	<b>\$5.2</b>	<b>\$5.4</b>	<b>\$5.6</b>	<b>\$5.7</b>
<b>REVENUES</b>										
Water Rate Revenues	4.1	5.4	6.6	7.5	8.0	8.5	9.0	9.5	9.8	10.2
Standby Revs/Prop Taxes	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Other Revenues	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Subtotal	6.1	7.5	8.8	9.6	10.2	10.6	11.2	11.7	12.1	12.5
SRF Grant Proceeds	0.1	0.0	0.0	0.2	10.0	0.0	0.0	0.0	0.0	0.0
SRF Loan Proceeds	0.0	0.0	0.0	1.5	0.0	4.0	0.0	0.0	0.0	0.0
Debt Proceeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	0.1	-	-	1.7	10.0	4.0	-	-	-	-
<b>Total</b>	<b>6.2</b>	<b>7.5</b>	<b>8.8</b>	<b>11.4</b>	<b>20.2</b>	<b>14.6</b>	<b>11.2</b>	<b>11.7</b>	<b>12.1</b>	<b>12.5</b>
<b>EXPENSES</b>										
Operating Expenses	5.2	5.7	6.0	6.2	6.5	7.2	7.8	8.1	8.5	8.8
Debt Service	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3
Total Capital Expenses	1.3	3.5	3.5	5.2	13.3	7.3	3.0	3.1	3.2	3.3
<b>Total</b>	<b>6.5</b>	<b>9.2</b>	<b>9.4</b>	<b>11.4</b>	<b>19.7</b>	<b>14.5</b>	<b>11.1</b>	<b>11.5</b>	<b>12.0</b>	<b>12.4</b>
<b>Revenues Less Expenses</b>	<b>(0.2)</b>	<b>(1.6)</b>	<b>(0.7)</b>	<b>(0.0)</b>	<b>0.5</b>	<b>0.2</b>	<b>0.1</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>
<b>Ending Fund Reserves</b>	<b>6.9</b>	<b>5.3</b>	<b>4.6</b>	<b>4.6</b>	<b>5.1</b>	<b>5.2</b>	<b>5.4</b>	<b>5.6</b>	<b>5.7</b>	<b>5.8</b>
Min Fund Reserve Target	3.6	3.9	4.0	4.1	4.2	4.6	5.0	5.2	5.4	5.5
Max Fund Reserve Target	7.2	7.7	8.0	8.2	8.5	9.2	10.1	10.4	10.7	11.1
Debt Service Coverage	-	-	-	-	-	-	12.44	13.03	13.20	13.37

# **Joshua Basin Water District**

## **Financial & Rate Projections**

### Scenario 2

Phased Approach

With Deferred Chrome 6 Treatment

No Debt

40% Fixed Rate Revenue Recovery

Steeper Water Rate Tiers

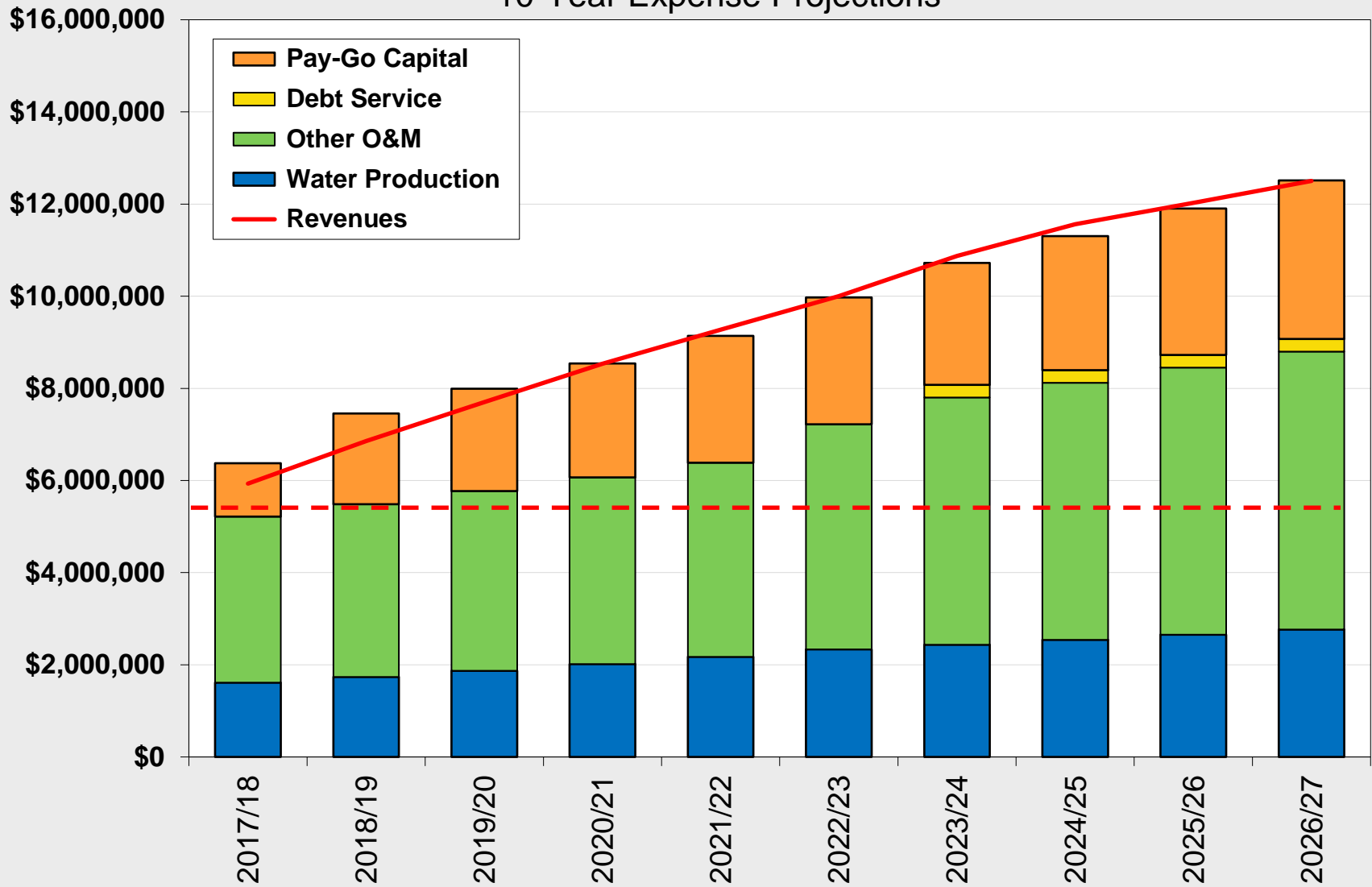


<b>Table 1</b>		<b>Cash Flow Projections: Phased Approach</b>				<b>Years 0 - 5</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
		<b>Projected 2017/18</b>	<b>Projected 2018/19</b>	<b>Projected 2019/20</b>	<b>Projected 2020/21</b>	<b>Projected 2021/22</b>
1	Effective Date of Rate Adjustment	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1
2	Rate Adjustment %	25%	20%	18%	15%	10%
4	Growth: New EDUs	10	10	10	10	10
5	Growth in Billable EDUs %	0.2%	0.2%	0.2%	0.2%	0.2%
6	Wtr Demand Elasticity (Response to Rate Incr)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
7	Change in Water Use After Rate Increase	-5.0%	-4.0%	-3.6%	-3.0%	-2.0%
8	Water Purchases from MWA (AF)	500	600	700	800	900
9	MWA Rate per AF	\$569	\$597	\$627	\$658	\$691
10	Interest Earnings Rate	1.0%	1.5%	2.0%	2.0%	2.0%
11	Annual Cost Escalator	4.0%	4.0%	4.0%	4.0%	4.0%
12	<b>Beginning Fund Reserves</b>	\$7,151,000	\$6,711,000	\$6,116,000	\$5,829,000	\$5,824,000
13	<b>REVENUES</b>					
14	Basic Monthly Fees	1,659,000	2,053,000	2,447,000	2,853,000	3,212,000
15	Water Usage Charges	1,954,000	2,345,000	2,685,000	3,025,000	3,321,000
16	Locked Meter Charges	299,000	363,000	432,000	502,000	564,000
17	Standby Revenue	1,140,000	1,139,000	1,138,000	1,137,000	1,136,000
18	Property Taxes	428,000	437,000	446,000	455,000	464,000
19	Private Fire Svc & Special Services	137,000	140,000	143,000	146,000	149,000
20	Water Capacity & Meter Install Fees	53,000	53,000	54,000	55,000	56,000
21	Interest Earnings	50,000	101,000	122,000	117,000	116,000
22	HDMC WWTP Reimbs (+22%)	200,000	207,000	216,000	224,000	233,000
23	Other Revenues	12,000	20,000	20,000	20,000	20,000
24	<b>Total Revenues</b>	<b>5,932,000</b>	<b>6,858,000</b>	<b>7,703,000</b>	<b>8,534,000</b>	<b>9,271,000</b>
25	SRF Grants	100,000			200,000	10,000,000
26	SRF Loans				1,510,000	
27	Debt Proceeds					
28	<b>EXPENSES</b>					
29	<b>Operating &amp; Maintenance</b>					
30	Production	1,324,000	1,377,000	1,432,000	1,489,000	1,549,000
31	Recharge Water Purchases from MWA	287,000	358,000	439,000	526,000	622,000
32	Distribution	1,000,000	1,040,000	1,082,000	1,125,000	1,170,000
33	Customer Service	489,000	509,000	529,000	550,000	572,000
34	Administration	1,048,000	1,090,000	1,134,000	1,179,000	1,226,000
35	Engineering	237,000	246,000	256,000	266,000	277,000
36	Finance	533,000	554,000	576,000	599,000	623,000
37	Personnel & Legal	134,000	139,000	145,000	151,000	157,000
38	HDMC WWTP Operations (reimbursable)	163,000	170,000	177,000	184,000	191,000
39	Chrome 6 Operations	0	0	0	0	0
40	<b>Subtotal</b>	<b>5,215,000</b>	<b>5,483,000</b>	<b>5,770,000</b>	<b>6,069,000</b>	<b>6,387,000</b>
41	<b>Debt Service</b>					
42	Debt Service for Capital Improvements	-	-	-	-	-
43	Chrome 6 SRF Loan Repayment	-	-	-	-	-
44	<b>Subtotal</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
45	<b>Capital/Non-Operating</b>					
	Capital Improvements	700,000	1,000,000	1,250,000	1,500,000	2,000,000
1	Annual Project Funding/Meter Repls	237,000	750,000	750,000	750,000	750,000
2	Chromium 6 Project	100,000	0	0	1,710,000	10,000,000
3	Morongo Basin Pipeline Debt Reimbs	220,000	220,000	220,000	220,000	0
4	<b>Subtotal</b>	<b>1,257,000</b>	<b>1,970,000</b>	<b>2,220,000</b>	<b>4,180,000</b>	<b>12,750,000</b>
5	<b>Total Expenses</b>	<b>6,472,000</b>	<b>7,453,000</b>	<b>7,990,000</b>	<b>10,249,000</b>	<b>19,137,000</b>
6	<b>Revenues Less Expenses</b>	<b>(440,000)</b>	<b>(595,000)</b>	<b>(287,000)</b>	<b>(5,000)</b>	<b>134,000</b>
7	<b>Ending Fund Reserves</b>	<b>6,711,000</b>	<b>6,116,000</b>	<b>5,829,000</b>	<b>5,824,000</b>	<b>5,958,000</b>
8	Debt Service Coverage	-	-	-	-	-
9	Min Fund Rsrv Target (50% O&M+Debt + \$1M)	3,607,500	3,741,500	3,885,000	4,034,500	4,193,500
10	Max Fund Rsrv Target (100% O&M+Debt + \$2M)	7,215,000	7,483,000	7,770,000	8,069,000	8,387,000
11	Annual pay-go funding generated for CIP	497,000	1,155,000	1,713,000	2,245,000	2,884,000

<b>Table 1</b>		<b>Cash Flow Projections: Phased Approach</b>					<b>Year 6 - 10</b>
		<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	
		<b>Projected 2022/23</b>	<b>Projected 2023/24</b>	<b>Projected 2024/25</b>	<b>Projected 2025/26</b>	<b>Projected 2026/27</b>	<b>Esc Factor</b>
1	Effective Date of Rate Adjustment	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	
2	Rate Adjustment %	12%	12%	5%	5%	5%	
4	Growth: New EDUs	10	10	10	10	10	
5	Growth in Billable EDUs %	0.2%	0.2%	0.2%	0.2%	0.2%	
6	Wtr Demand Elasticity (Response to Rate Incr)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	
7	Change in Annual Water Consumption	-2.4%	-2.4%	-1.0%	-1.0%	-1.0%	
8	Water Purchases from MWA (AF)	1,000	1,000	1,000	1,000	1,000	
9	MWA Rate per AF	\$726	\$762	\$800	\$840	\$882	5.0%
10	Interest Earnings Rate	2.0%	2.0%	2.0%	2.0%	2.0%	
11	Annual Cost Escalator	4.0%	4.0%	4.0%	4.0%	4.0%	
12	<b>Beginning Fund Reserves</b>	\$5,958,000	\$5,989,000	\$6,138,000	\$6,396,000	\$6,519,000	
13	<b>REVENUES</b>						
14	Basic Monthly Fees	3,574,000	4,011,000	4,352,000	4,579,000	4,818,000	
15	Water Usage Charges	3,603,000	3,939,000	4,206,000	4,372,000	4,545,000	
16	Locked Meter Charges	627,000	702,000	760,000	798,000	838,000	
17	Standby Revenue	1,135,000	1,134,000	1,133,000	1,132,000	1,131,000	
18	Property Taxes	473,000	482,000	492,000	502,000	512,000	2.0%
19	Private Fire Svc & Special Services	152,000	155,000	158,000	161,000	164,000	2.0%
20	Water Capacity & Meter Install Fees	57,000	57,000	58,000	59,000	60,000	
21	Interest Earnings	119,000	120,000	123,000	128,000	130,000	
22	HDMC WWTP Reimbs (+22%)	243,000	253,000	262,000	273,000	284,000	
23	Other Revenues	20,000	20,000	20,000	20,000	20,000	
24	<b>Total Revenues</b>	<b>10,003,000</b>	<b>10,873,000</b>	<b>11,564,000</b>	<b>12,024,000</b>	<b>12,502,000</b>	
25	Grants						
26	SRF Planning & Construction Loan	4,000,000					
27	Debt Proceeds						
28	<b>EXPENSES</b>						
29	<b>Operating &amp; Maintenance</b>						
30	Production	1,611,000	1,675,000	1,742,000	1,812,000	1,884,000	
31	Recharge Water Purchases from MWA	726,000	762,000	800,000	840,000	882,000	
32	Distribution	1,217,000	1,266,000	1,317,000	1,370,000	1,425,000	
33	Customer Service	595,000	619,000	644,000	670,000	697,000	
34	Administration	1,275,000	1,326,000	1,379,000	1,434,000	1,491,000	
35	Engineering	288,000	300,000	312,000	324,000	337,000	
36	Finance	648,000	674,000	701,000	729,000	758,000	
37	Personnel & Legal	163,000	170,000	177,000	184,000	191,000	
38	HDMC WWTP Operations (reimbursable)	199,000	207,000	215,000	224,000	233,000	
39	Chrome 6 Operations	500,000	800,000	832,000	865,000	900,000	
40	<b>Subtotal</b>	<b>7,222,000</b>	<b>7,799,000</b>	<b>8,119,000</b>	<b>8,452,000</b>	<b>8,798,000</b>	
41	<b>Debt Service</b>						
42	Debt Service for Capital Improvements	-	-	-	-	-	
43	Chrome 6 SRF Loan Repayment	-	275,000	275,000	275,000	275,000	
44	<b>Subtotal</b>	<b>0</b>	<b>275,000</b>	<b>275,000</b>	<b>275,000</b>	<b>275,000</b>	
45	<b>Capital/Non-Operating</b>						
	Capital Improvements (Pipes/Wells/Boosters)	2,000,000	2,250,000	2,500,000	2,750,000	3,000,000	
1	Annual Project Funding	750,000	400,000	412,000	424,000	437,000	3.0%
2	Chromium 6 Project	4,000,000	0	0	0	0	
3	Morongo Basin Pipeline Debt Reimbs	0	0	0	0	0	
4	<b>Subtotal</b>	<b>6,750,000</b>	<b>2,650,000</b>	<b>2,912,000</b>	<b>3,174,000</b>	<b>3,437,000</b>	
5	<b>Total Expenses</b>	<b>13,972,000</b>	<b>10,724,000</b>	<b>11,306,000</b>	<b>11,901,000</b>	<b>12,510,000</b>	
6	<b>Revenues Less Expenses</b>	<b>31,000</b>	<b>149,000</b>	<b>258,000</b>	<b>123,000</b>	<b>(8,000)</b>	
7	<b>Ending Fund Reserves</b>	<b>5,989,000</b>	<b>6,138,000</b>	<b>6,396,000</b>	<b>6,519,000</b>	<b>6,511,000</b>	
8	Debt Service Coverage	-	11.18	12.53	12.99	13.47	
9	Min Fund Rsrv Target (50% O&M+Debt + \$1M)	4,611,000	5,037,000	5,197,000	5,363,500	5,536,500	
10	Max Fund Rsrv Target (100% O&M+Debt + \$2M)	9,222,000	10,074,000	10,394,000	10,727,000	11,073,000	
11	Annual pay-go funding generated for CIP	2,781,000	2,799,000	3,170,000	3,297,000	3,429,000	

# Joshua Basin Water District 10-Year Expense Projections

Scenario 2  
Phased Approach



Excludes capital projects funded by debt.

Table 2  
 Joshua Basin Water District  
 Fixed Meter Charge Calculation

	Mar-1 2018	Jan-1 2019	Jan-1 2020	Jan-1 2021	Jan-1 2022	
<b>Water Rate Revenue Recovery</b>						
Annualized Revenues w/ Increase	\$4,058,000	\$4,768,000	\$5,525,000	\$6,261,000	\$6,823,000	
<b>Fixed Rate Recovery</b>						
Cost Recovery Allocation %	40%	40%	40%	40%	40%	
Cost Recovery Allocation \$	\$1,623,200	\$1,907,200	\$2,210,000	\$2,504,400	\$2,729,200	
<b>Meter Equivalents</b>						
Existing Meter Equivalents	4,764	4,774	4,784	4,794	4,804	
Projected Growth	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	
Total	4,774	4,784	4,794	4,804	4,814	
<b>Rate per Meter Equivalent</b>						
Annual	\$340.04	\$398.69	\$461.03	\$521.36	\$566.98	
Monthly	28.34	33.22	38.42	43.45	47.25	
<b>Projected Fixed Monthly Meter Charges</b>						
<u>Meter Size</u>	<u>Capacity (gpm)</u>					
3/4" & 1"	30	\$28.34	\$33.22	\$38.42	\$43.45	\$47.25
1-1/2"	100	94.47	110.73	128.07	144.83	157.50
2"	160	151.15	177.17	204.91	231.73	252.00
3"	300	283.40	332.20	384.20	434.50	472.50
<b>Variable Rate Recovery</b>						
Cost Recovery Allocation %	60%	60%	60%	60%	60%	
Cost Recovery Allocation \$	\$2,434,800	\$2,860,800	\$3,315,000	\$3,756,600	\$4,093,800	
<b>Projected Water Use</b>	500,900	480,800	463,900	450,600	442,100	
<b>Average Rate per Unit (\$/hcf)</b>	\$4.86	\$5.95	\$7.15	\$8.34	\$9.26	

Table 3  
 Joshua Basin Water District  
 Projected Water Use & Consumption Charges

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
<b>Projected Water Use</b>						
Change in Use After Rate Increase		-5.0%	-4.0%	-3.6%	-3.0%	-2.0%
Billed Use by Tier for 3/4" & 1" Meters (hcf)						
Tier 1	188,189	186,300	184,800	183,500	182,400	181,700
Tier 2	91,526	84,700	79,600	75,300	71,900	69,700
Tier 3	76,742	69,800	64,800	60,600	57,300	55,200
Tier 4	86,482	77,000	70,200	64,600	60,300	57,600
Subtotal	442,939	417,800	399,400	384,000	371,900	364,200
All Other Use (hcf)	85,275	83,100	81,400	79,900	78,700	77,900
Total (hcf)	528,214	500,900	480,800	463,900	450,600	442,100
Total (acre-feet)	1,213	1,150	1,104	1,065	1,034	1,015
Annual Change		-5.2%	-4.0%	-3.5%	-2.9%	-1.9%
Cumulative Change		-5.2%	-9.0%	-12.2%	-14.7%	-16.3%
<b>Projected Water Consumption Charges</b>						
Billed Use by Tier for 3/4" & 1" Meters (hcf)						
Tier 1	\$3.00	\$3.92	\$4.82	\$5.83	\$6.84	\$7.62
Tier 2	3.50	4.79	5.89	7.13	8.36	9.31
Tier 3	4.00	5.66	6.96	8.42	9.88	11.01
Tier 4	4.50	6.53	8.03	9.72	11.40	12.70
All Other Use (hcf)	\$3.79	\$4.87	\$5.94	\$7.15	\$8.34	\$9.26
Projected Revenues		\$2,438,425	\$2,858,189	\$3,315,989	\$3,758,729	\$4,094,139
Revenue Target		2,434,800	2,860,800	3,315,000	3,756,600	4,093,800
<i>Difference %</i>		0.1%	-0.1%	0.0%	0.1%	0.0%

Table 4  
 Joshua Basin Water District  
 Projected Water Rates

Scenario 2  
 Phased Approach, No Debt  
 40% Fixed Rate Recovery with Steeper Tiers

Effective	Current	Projected Water Rates				
		2018	2019	2020	2021	2022
<b>OVERALL RATE ADJUSTMENT</b>		<b>25%</b>	<b>20%</b>	<b>18%</b>	<b>15%</b>	<b>10%</b>

**BASIC MONTHLY FEE**

Meter Size	Accounts	Capacity	Monthly Rate					
3/4" & 1"	4,503	30 gpm	\$25.78	\$28.34	\$33.22	\$38.42	\$43.45	\$47.25
1-1/2"	28	100 gpm	85.93	94.47	110.73	128.07	144.83	157.50
2"	18	160 gpm	137.49	151.15	177.17	204.91	231.73	252.00
3"	7	300 gpm	257.79	283.40	332.20	384.20	434.50	472.50

**MONTHLY WATER FLOW CHARGES**

**For 3/4" and 1" Meters**

			Rate Per Unit (\$/hcf)					
Tier 1	0 - 5 units		\$3.00	\$3.92	\$4.82	\$5.83	\$6.84	\$7.62
Tier 2	5.01 - 10 units		3.50	4.79	5.89	7.13	8.36	9.31
Tier 3	10.01 - 20 units		4.00	5.66	6.96	8.42	9.88	11.01
Tier 4	20.01 + units		4.50	6.53	8.03	9.72	11.40	12.70

1 unit = one hundred cubic feet = 748 gallons

**For 1-1/2", 2" and 3" Meters**

			Rate Per Unit (\$/hcf)					
Unit rate for all water use			\$3.79	\$4.87	\$5.84	\$6.89	\$7.92	\$8.71

1 unit = one hundred cubic feet = 748 gallons

**PRIVATE FIRE PROTECTION CHARGES**

Svc Size	Accounts	Capacity	Monthly Rate					
2"	1	160 gpm	\$12.62	\$15.12	\$17.72	\$20.49	\$23.17	\$25.20
3"	0	300 gpm	25.25	28.35	33.23	38.42	43.44	47.25
4"	6	500 gpm	50.50	47.25	55.38	64.03	72.41	78.75
6"	4	1,000 gpm	75.76	94.50	110.75	128.06	144.81	157.50
8"	7	1,600 gpm	113.62	151.20	177.20	204.90	231.70	252.00

Table 5  
 Joshua Basin Water District  
 Bill Impacts (3/4" & 1" Meter)

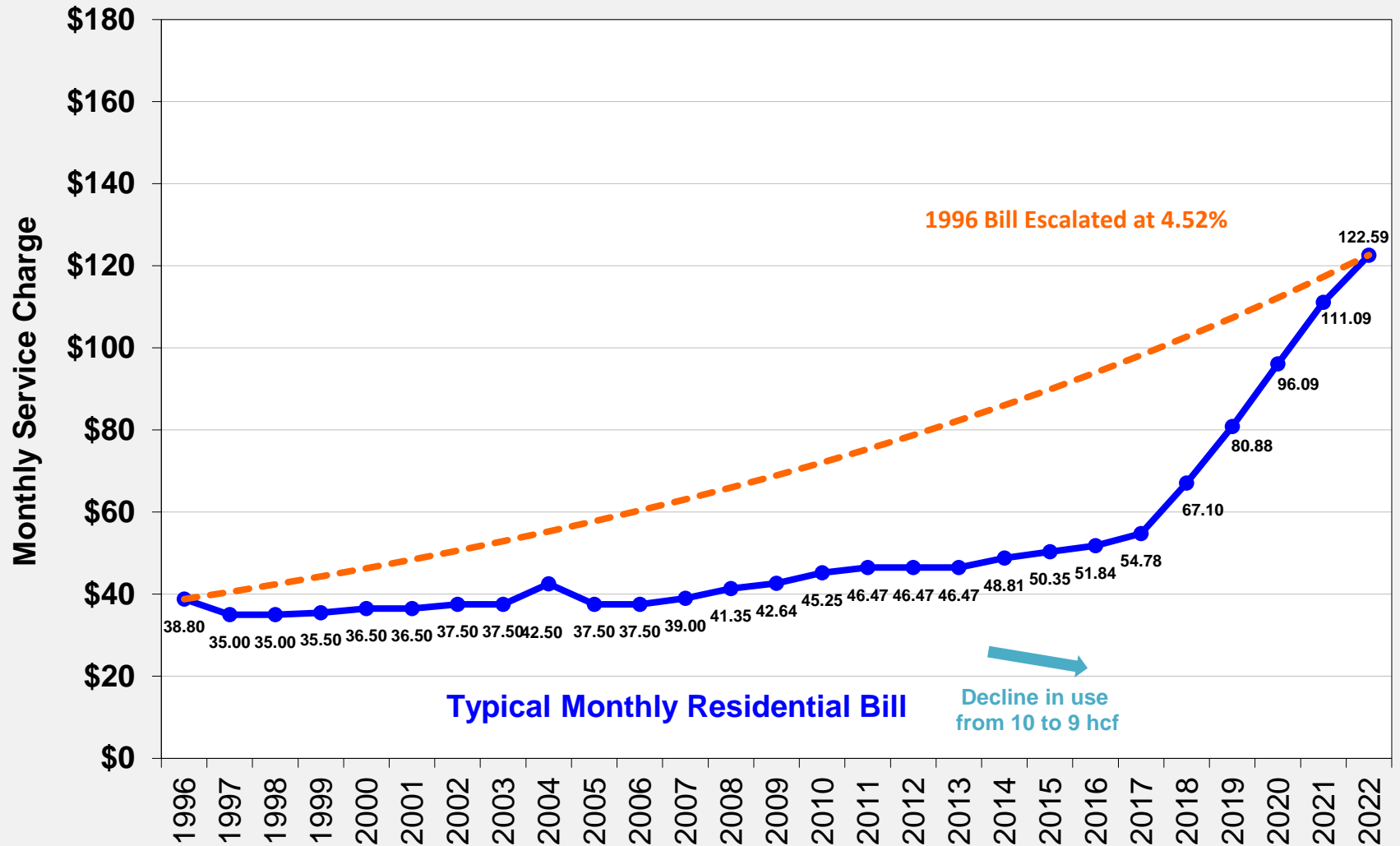
Scenario 2  
 Phased Approach, No Debt  
 40% Fixed Rate Recovery with Steeper Tiers

Projected Rate Impacts										
Level of Use	Monthly Use	% of Bills at or Below	Current	Projected Monthly Water Bills					5-Year Avg Annual Impact	Avg Annual Impact
				2018	2019	2020	2021	2022		
<b>LOW</b>	<b>3 hcf</b>	<b>30%</b>	<b>\$34.78</b>	<b>\$40.10</b>	<b>\$47.68</b>	<b>\$55.91</b>	<b>\$63.97</b>	<b>\$70.11</b>		
			Increase \$	5.32	7.58	8.23	8.06	6.14	35.33	7.07
			Increase %	15.3%	18.9%	17.3%	14.4%	9.6%	101.6%	15.1%
<b>MEDIAN</b>	<b>6 hcf</b>	<b>55%</b>	<b>\$44.28</b>	<b>\$52.73</b>	<b>\$63.21</b>	<b>\$74.70</b>	<b>\$86.01</b>	<b>\$94.66</b>		
			Increase \$	8.45	10.48	11.49	11.31	8.65	50.38	10.08
			Increase %	19.1%	19.9%	18.2%	15.1%	10.1%	113.8%	16.4%
<b>AVERAGE</b>	<b>9 hcf</b>	<b>73%</b>	<b>\$58.28</b>	<b>\$71.89</b>	<b>\$86.77</b>	<b>\$103.22</b>	<b>\$119.45</b>	<b>\$131.90</b>		
			Increase \$	13.61	14.88	16.45	16.23	12.45	73.62	14.72
			Increase %	23.4%	20.7%	19.0%	15.7%	10.4%	126.3%	17.7%
<b>MOD-HIGH</b>	<b>20 hcf</b>	<b>90%</b>	<b>\$98.28</b>	<b>\$128.49</b>	<b>\$156.37</b>	<b>\$187.42</b>	<b>\$218.25</b>	<b>\$242.00</b>		
			Increase \$	30.21	27.88	31.05	30.83	23.75	143.72	28.74
			Increase %	30.7%	21.7%	19.9%	16.4%	10.9%	146.2%	19.7%
<b>HIGH</b>	<b>30 hcf</b>	<b>95%</b>	<b>\$188.28</b>	<b>\$259.09</b>	<b>\$316.97</b>	<b>\$381.82</b>	<b>\$446.25</b>	<b>\$496.00</b>		
			Increase \$	70.81	57.88	64.85	64.43	49.75	307.72	61.54
			Increase %	37.6%	22.3%	20.5%	16.9%	11.1%	163.4%	21.4%

# Joshua Basin Water District

## Historical Monthly Charges for a Typical Home

Scenario 2  
Phased Approach





**Scenario 2 - Phased Approach with No Debt**  
**Summary of Cash Flow Projections (\$ millions)**

<b>Fiscal Year</b>	<b>17/18</b>	<b>18/19</b>	<b>19/20</b>	<b>20/21</b>	<b>21/22</b>	<b>22/23</b>	<b>23/24</b>	<b>24/25</b>	<b>25/26</b>	<b>26/27</b>
<b>Overall Rate Increases</b> Effective January 1	<b>25%</b>	<b>20%</b>	<b>18%</b>	<b>15%</b>	<b>10%</b>	<b>12%</b>	<b>12%</b>	<b>5%</b>	<b>5%</b>	<b>5%</b>
<b>Beginning Fund Reserves</b>	<b>\$7.2</b>	<b>\$6.7</b>	<b>\$6.1</b>	<b>\$5.8</b>	<b>\$5.8</b>	<b>\$6.0</b>	<b>\$6.0</b>	<b>\$6.1</b>	<b>\$6.4</b>	<b>\$6.5</b>
<b>REVENUES</b>										
Water Rate Revenues	3.9	4.8	5.6	6.4	7.1	7.8	8.7	9.3	9.7	10.2
Standby Revs/Prop Taxes	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Other Revenues	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7
Subtotal	5.9	6.9	7.7	8.5	9.3	10.0	10.9	11.6	12.0	12.5
SRF Grant Proceeds	0.1	0.0	0.0	0.2	10.0	0.0	0.0	0.0	0.0	0.0
SRF Loan Proceeds	0.0	0.0	0.0	1.5	0.0	4.0	0.0	0.0	0.0	0.0
Debt Proceeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	0.1	-	-	1.7	10.0	4.0	-	-	-	-
<b>Total</b>	<b>6.0</b>	<b>6.9</b>	<b>7.7</b>	<b>10.2</b>	<b>19.3</b>	<b>14.0</b>	<b>10.9</b>	<b>11.6</b>	<b>12.0</b>	<b>12.5</b>
<b>EXPENSES</b>										
Operating Expenses	5.2	5.5	5.8	6.1	6.4	7.2	7.8	8.1	8.5	8.8
Debt Service	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.3	0.3
Total Capital Expenses	1.3	2.0	2.2	4.2	12.8	6.8	2.7	2.9	3.2	3.4
<b>Total</b>	<b>6.5</b>	<b>7.5</b>	<b>8.0</b>	<b>10.2</b>	<b>19.1</b>	<b>14.0</b>	<b>10.7</b>	<b>11.3</b>	<b>11.9</b>	<b>12.5</b>
<b>Revenues Less Expenses</b>	<b>(0.4)</b>	<b>(0.6)</b>	<b>(0.3)</b>	<b>(0.0)</b>	<b>0.1</b>	<b>0.0</b>	<b>0.1</b>	<b>0.3</b>	<b>0.1</b>	<b>(0.0)</b>
<b>Ending Fund Reserves</b>	<b>6.7</b>	<b>6.1</b>	<b>5.8</b>	<b>5.8</b>	<b>6.0</b>	<b>6.0</b>	<b>6.1</b>	<b>6.4</b>	<b>6.5</b>	<b>6.5</b>
Min Fund Reserve Target	3.6	3.7	3.9	4.0	4.2	4.6	5.0	5.2	5.4	5.5
Max Fund Reserve Target	7.2	7.5	7.8	8.1	8.4	9.2	10.1	10.4	10.7	11.1
Debt Service Coverage	-	-	-	-	-	-	11.18	12.53	12.99	13.47

# **Joshua Basin Water District**

## **Financial & Rate Projections**

### Scenario 3

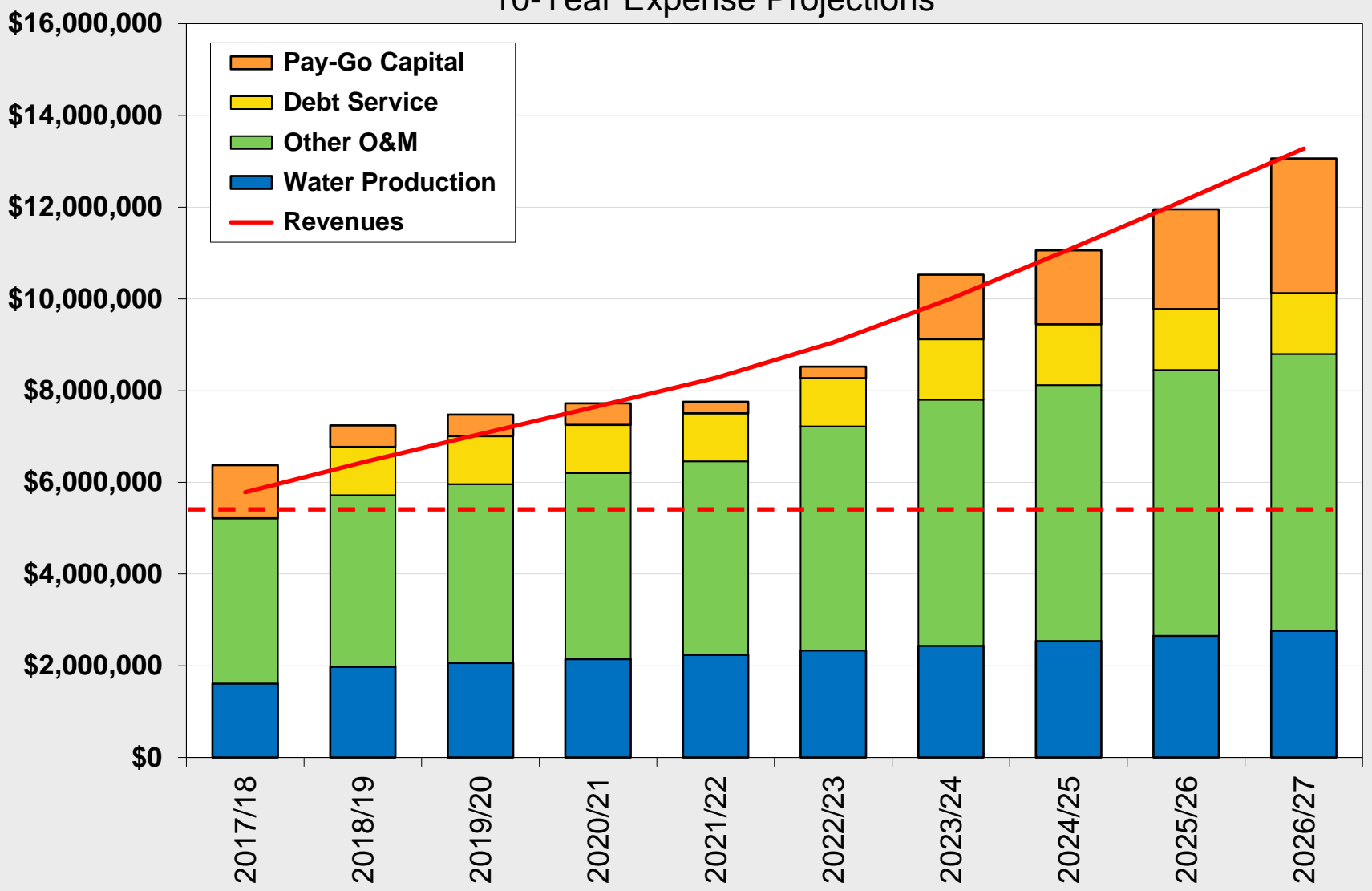
\$15 Million Debt for CIP & Meter Replacements  
With Deferred Chrome 6 Treatment  
40% Fixed Rate Revenue Recovery  
Steeper Water Rate Tiers

<b>Table 1</b>		<b>Cash Flow Projections: With \$15 Million Debt</b>				<b>Years 0 - 5</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
		<b>Projected 2017/18</b>	<b>Projected 2018/19</b>	<b>Projected 2019/20</b>	<b>Projected 2020/21</b>	<b>Projected 2021/22</b>
1	Effective Date of Rate Adjustment	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1
2	Rate Adjustment %	15%	15%	15%	12%	12%
4	Growth: New EDUs	10	10	10	10	10
5	Growth in Billable EDUs %	0.2%	0.2%	0.2%	0.2%	0.2%
6	Wtr Demand Elasticity (Response to Rate Incr)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
7	Change in Water Use After Rate Increase	-3.0%	-3.0%	-3.0%	-2.4%	-2.4%
8	Water Purchases from MWA (AF)	500	1,000	1,000	1,000	1,000
9	MWA Rate per AF	\$569	\$597	\$627	\$658	\$691
10	Interest Earnings Rate	1.0%	1.5%	2.0%	2.0%	2.0%
11	Annual Cost Escalator	4.0%	4.0%	4.0%	4.0%	4.0%
12	<b>Beginning Fund Reserves</b>	\$7,151,000	\$6,563,000	\$5,756,000	\$5,332,000	\$5,271,000
13	<b>REVENUES</b>					
14	Basic Monthly Fees	1,584,000	1,846,000	2,128,000	2,417,000	2,713,000
15	Water Usage Charges	1,894,000	2,169,000	2,419,000	2,673,000	2,922,000
16	Locked Meter Charges	286,000	326,000	375,000	426,000	477,000
17	Standby Revenue	1,140,000	1,139,000	1,138,000	1,137,000	1,136,000
18	Property Taxes	428,000	437,000	446,000	455,000	464,000
19	Private Fire Svc & Special Services	137,000	140,000	143,000	146,000	149,000
20	Water Capacity & Meter Install Fees	53,000	53,000	54,000	55,000	56,000
21	Interest Earnings	50,000	98,000	115,000	107,000	105,000
22	HDMC WWTP Reimbs (+22%)	200,000	207,000	216,000	224,000	233,000
23	Other Revenues	12,000	20,000	20,000	20,000	20,000
24	<b>Total Revenues</b>	<b>5,784,000</b>	<b>6,435,000</b>	<b>7,054,000</b>	<b>7,660,000</b>	<b>8,275,000</b>
25	SRF Grants	100,000			200,000	10,000,000
26	SRF Loans				1,510,000	
27	Debt Proceeds		15,000,000			
28	<b>EXPENSES</b>					
29	<b>Operating &amp; Maintenance</b>					
30	Production	1,324,000	1,377,000	1,432,000	1,489,000	1,549,000
31	Recharge Water Purchases from MWA	287,000	597,000	627,000	658,000	691,000
32	Distribution	1,000,000	1,040,000	1,082,000	1,125,000	1,170,000
33	Customer Service	489,000	509,000	529,000	550,000	572,000
34	Administration	1,048,000	1,090,000	1,134,000	1,179,000	1,226,000
35	Engineering	237,000	246,000	256,000	266,000	277,000
36	Finance	533,000	554,000	576,000	599,000	623,000
37	Personnel & Legal	134,000	139,000	145,000	151,000	157,000
38	HDMC WWTP Operations (reimbursable)	163,000	170,000	177,000	184,000	191,000
39	Chrome 6 Operations	0	0	0	0	0
40	<b>Subtotal</b>	<b>5,215,000</b>	<b>5,722,000</b>	<b>5,958,000</b>	<b>6,201,000</b>	<b>6,456,000</b>
41	<b>Debt Service</b>					
42	Projected Debt Service	-	1,050,000	1,050,000	1,050,000	1,050,000
43	Chrome 6 SRF Loan Repayment	-	-	-	-	-
44	<b>Subtotal</b>	<b>0</b>	<b>1,050,000</b>	<b>1,050,000</b>	<b>1,050,000</b>	<b>1,050,000</b>
45	<b>Capital/Non-Operating</b>					
46	Capital Improvements	700,000	15,000,000	-	-	-
47	Annual Project Funding	237,000	250,000	250,000	250,000	250,000
48	Chromium 6 Project	100,000	0	0	1,710,000	10,000,000
49	Morongo Basin Pipeline Debt Reimbs	220,000	220,000	220,000	220,000	0
50	<b>Subtotal</b>	<b>1,257,000</b>	<b>15,470,000</b>	<b>470,000</b>	<b>2,180,000</b>	<b>10,250,000</b>
51	<b>Total Expenses</b>	<b>6,472,000</b>	<b>22,242,000</b>	<b>7,478,000</b>	<b>9,431,000</b>	<b>17,756,000</b>
52	<b>Revenues Less Expenses</b>	<b>(588,000)</b>	<b>(807,000)</b>	<b>(424,000)</b>	<b>(61,000)</b>	<b>519,000</b>
53	<b>Ending Fund Reserves</b>	<b>6,563,000</b>	<b>5,756,000</b>	<b>5,332,000</b>	<b>5,271,000</b>	<b>5,790,000</b>
54	Debt Service Coverage	-	0.68	1.04	1.39	1.73
55	Min Fund Rsrv Target (50% O&M+Debt + \$1M)	3,607,500	4,386,000	4,504,000	4,625,500	4,753,000
56	Max Fund Rsrv Target (100% O&M+Debt + \$2M)	7,215,000	8,772,000	9,008,000	9,251,000	9,506,000
57	Annual pay-go funding generated for CIP	349,000	(557,000)	(174,000)	189,000	769,000

<b>Table 1</b>		<b>Cash Flow Projections: With \$15 Million Debt</b>					<b>Year 6 - 10</b>
		<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	
		<b>Projected 2022/23</b>	<b>Projected 2023/24</b>	<b>Projected 2024/25</b>	<b>Projected 2025/26</b>	<b>Projected 2026/27</b>	<b>Esc Factor</b>
1	Effective Date of Rate Adjustment	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	
2	Rate Adjustment %	15%	15%	15%	12%	12%	
4	Growth: New EDUs	10	10	10	10	10	
5	Growth in Billable EDUs %	0.2%	0.2%	0.2%	0.2%	0.2%	
6	Wtr Demand Elasticity (Response to Rate Incr)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	
7	Change in Annual Water Consumption	-3.0%	-3.0%	-3.0%	-2.4%	-2.4%	
8	Water Purchases from MWA (AF)	1,000	1,000	1,000	1,000	1,000	
9	MWA Rate per AF	\$726	\$762	\$800	\$840	\$882	5.0%
10	Interest Earnings Rate	2.0%	2.0%	2.0%	2.0%	2.0%	
11	Annual Cost Escalator	4.0%	4.0%	4.0%	4.0%	4.0%	
12	<b>Beginning Fund Reserves</b>	\$5,790,000	\$6,318,000	\$5,799,000	\$5,812,000	\$6,028,000	
13	<b>REVENUES</b>						
14	Basic Monthly Fees	3,088,000	3,558,000	4,101,000	4,659,000	5,229,000	
15	Water Usage Charges	3,225,000	3,597,000	4,013,000	4,433,000	4,846,000	
16	Locked Meter Charges	541,000	623,000	716,000	812,000	909,000	
17	Standby Revenue	1,135,000	1,134,000	1,133,000	1,132,000	1,131,000	
18	Property Taxes	473,000	482,000	492,000	502,000	512,000	2.0%
19	Private Fire Svc & Special Services	152,000	155,000	158,000	161,000	164,000	2.0%
20	Water Capacity & Meter Install Fees	57,000	57,000	58,000	59,000	60,000	
21	Interest Earnings	116,000	126,000	116,000	116,000	121,000	
22	HDMC WWTP Reimbs (+22%)	243,000	253,000	262,000	273,000	284,000	
23	Other Revenues	20,000	20,000	20,000	20,000	20,000	
24	<b>Total Revenues</b>	<b>9,050,000</b>	<b>10,005,000</b>	<b>11,069,000</b>	<b>12,167,000</b>	<b>13,276,000</b>	
25	Grants						
26	SRF Planning & Construction Loan	4,000,000					
27	Debt Proceeds						
28	<b>EXPENSES</b>						
29	<b>Operating &amp; Maintenance</b>						
30	Production	1,611,000	1,675,000	1,742,000	1,812,000	1,884,000	
31	Recharge Water Purchases from MWA	726,000	762,000	800,000	840,000	882,000	
32	Distribution	1,217,000	1,266,000	1,317,000	1,370,000	1,425,000	
33	Customer Service	595,000	619,000	644,000	670,000	697,000	
34	Administration	1,275,000	1,326,000	1,379,000	1,434,000	1,491,000	
35	Engineering	288,000	300,000	312,000	324,000	337,000	
36	Finance	648,000	674,000	701,000	729,000	758,000	
37	Personnel & Legal	163,000	170,000	177,000	184,000	191,000	
38	HDMC WWTP Operations (reimbursable)	199,000	207,000	215,000	224,000	233,000	
39	Chrome 6 Operations	500,000	800,000	832,000	865,000	900,000	
40	<b>Subtotal</b>	<b>7,222,000</b>	<b>7,799,000</b>	<b>8,119,000</b>	<b>8,452,000</b>	<b>8,798,000</b>	
41	<b>Debt Service</b>						
42	Projected Debt Service	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	
43	Chrome 6 SRF Loan Repayment	-	275,000	275,000	275,000	275,000	
44	<b>Subtotal</b>	<b>1,050,000</b>	<b>1,325,000</b>	<b>1,325,000</b>	<b>1,325,000</b>	<b>1,325,000</b>	
45	<b>Capital/Non-Operating</b>						
46	Capital Improvements (Pipes/Wells/Boosters)	-	1,000,000	1,200,000	1,750,000	2,500,000	
47	Annual Project Funding	250,000	400,000	412,000	424,000	437,000	3.0%
48	Chromium 6 Project	4,000,000	0	0	0	0	
49	Morongo Basin Pipeline Debt Reimbs	0	0	0	0	0	
50	<b>Subtotal</b>	<b>4,250,000</b>	<b>1,400,000</b>	<b>1,612,000</b>	<b>2,174,000</b>	<b>2,937,000</b>	
51	<b>Total Expenses</b>	<b>12,522,000</b>	<b>10,524,000</b>	<b>11,056,000</b>	<b>11,951,000</b>	<b>13,060,000</b>	
52	<b>Revenues Less Expenses</b>	<b>528,000</b>	<b>(519,000)</b>	<b>13,000</b>	<b>216,000</b>	<b>216,000</b>	
53	<b>Ending Fund Reserves</b>	<b>6,318,000</b>	<b>5,799,000</b>	<b>5,812,000</b>	<b>6,028,000</b>	<b>6,244,000</b>	
54	Debt Service Coverage	1.74	1.66	2.23	2.80	3.38	
55	Min Fund Rsrv Target (50% O&M+Debt + \$1M)	5,136,000	5,562,000	5,722,000	5,888,500	6,061,500	
56	Max Fund Rsrv Target (100% O&M+Debt + \$2M)	10,272,000	11,124,000	11,444,000	11,777,000	12,123,000	
57	Annual pay-go funding generated for CIP	778,000	881,000	1,625,000	2,390,000	3,153,000	

# Joshua Basin Water District 10-Year Expense Projections

Scenario 3  
\$15M Debt for CIP & Meter Repls



Excludes capital projects funded by debt.

Table 2  
 Joshua Basin Water District  
 Fixed Meter Charge Calculation

	Mar-1 2018	Jan-1 2019	Jan-1 2020	Jan-1 2021	Jan-1 2022	
<b>Water Rate Revenue Recovery</b>						
Annualized Revenues w/ Increase	\$3,776,000	\$4,275,000	\$4,841,000	\$5,359,000	\$5,932,000	
<b>Fixed Rate Recovery</b>						
Cost Recovery Allocation %	40%	40%	40%	40%	40%	
Cost Recovery Allocation \$	\$1,510,400	\$1,710,000	\$1,936,400	\$2,143,600	\$2,372,800	
<b>Meter Equivalents</b>						
Existing Meter Equivalents	4,764	4,774	4,784	4,794	4,804	
Projected Growth	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	
Total	4,774	4,784	4,794	4,804	4,814	
<b>Rate per Meter Equivalent</b>						
Annual	\$316.41	\$357.47	\$403.95	\$446.25	\$492.94	
Monthly	26.37	29.79	33.66	37.19	41.08	
<b>Projected Fixed Monthly Meter Charges</b>						
<u>Meter Size</u>	<u>Capacity (gpm)</u>					
3/4" & 1"	30	\$26.37	\$29.79	\$33.66	\$37.19	\$41.08
1-1/2"	100	87.90	99.30	112.20	123.97	136.93
2"	160	140.64	158.88	179.52	198.35	219.09
3"	300	263.70	297.90	336.60	371.90	410.80
<b>Variable Rate Recovery</b>						
Cost Recovery Allocation %	60%	60%	60%	60%	60%	
Cost Recovery Allocation \$	\$2,265,600	\$2,565,000	\$2,904,600	\$3,215,400	\$3,559,200	
<b>Projected Water Use</b>	511,900	496,400	481,600	470,300	459,400	
<b>Average Rate per Unit (\$/hcf)</b>	\$4.43	\$5.17	\$6.03	\$6.84	\$7.75	

Table 3  
 Joshua Basin Water District  
 Projected Water Use & Consumption Charges

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
<b>Projected Water Use</b>						
Change in Use After Rate Increase		-3.0%	-3.0%	-3.0%	-2.4%	-2.4%
Billed Use by Tier for 3/4" & 1" Meters (hcf)						
Tier 1	188,189	187,100	186,000	184,900	184,000	183,100
Tier 2	91,526	87,400	83,500	79,700	76,800	74,000
Tier 3	76,742	72,600	68,700	65,000	62,200	59,500
Tier 4	86,482	80,800	75,500	70,500	66,800	63,300
Subtotal	442,939	427,900	413,700	400,100	389,800	379,900
All Other Use (hcf)	85,275	84,000	82,700	81,500	80,500	79,500
Total (hcf)	528,214	511,900	496,400	481,600	470,300	459,400
Total (acre-feet)	1,213	1,175	1,140	1,106	1,080	1,055
Annual Change		-3.1%	-3.0%	-3.0%	-2.3%	-2.3%
Cumulative Change		-3.1%	-6.0%	-8.8%	-11.0%	-13.0%
<b>Projected Water Consumption Charges</b>						
Billed Use by Tier for 3/4" & 1" Meters (hcf)						
Tier 1	\$3.00	\$3.55	\$4.16	\$4.88	\$5.55	\$6.32
Tier 2	3.50	4.34	5.09	5.98	6.81	7.75
Tier 3	4.00	5.13	6.02	7.07	8.05	9.16
Tier 4	4.50	5.92	6.94	8.15	9.27	10.55
All Other Use (hcf)	\$3.79	\$4.43	\$5.16	\$6.03	\$6.83	\$7.75
Projected Revenues		\$2,266,159	\$2,563,376	\$2,904,578	\$3,214,345	\$3,559,506
Revenue Target		2,265,600	2,565,000	2,904,600	3,215,400	3,559,200
Difference %		0.0%	-0.1%	0.0%	0.0%	0.0%

Table 4

Scenario 3

Joshua Basin Water District  
Projected Water Rates

\$15M Debt for CIP & Meter Replacements  
40% Fixed Rate Recovery with Steeper Tiers

Effective	Current	Projected Water Rates						
		2018	2019	2020	2021	2022		
<b>OVERALL RATE ADJUSTMENT</b>		<b>15%</b>	<b>15%</b>	<b>15%</b>	<b>12%</b>	<b>12%</b>		
<b>BASIC MONTHLY FEE</b>								
<u>Meter Size</u>	<u>Accounts</u>	<u>Capacity</u>	<u>Monthly Rate</u>					
3/4" & 1"	4,503	30 gpm	\$25.78	\$26.37	\$29.79	\$33.66	\$37.19	\$41.08
1-1/2"	28	100 gpm	85.93	87.90	99.30	112.20	123.97	136.93
2"	18	160 gpm	137.49	140.64	158.88	179.52	198.35	219.09
3"	7	300 gpm	257.79	263.70	297.90	336.60	371.90	410.80
<b>MONTHLY WATER FLOW CHARGES</b>								
<b>For 3/4" and 1" Meters</b>			<u>Rate Per Unit (\$/hcf)</u>					
Tier 1	0 - 5 units		\$3.00	\$3.55	\$4.16	\$4.88	\$5.55	\$6.32
Tier 2	5.01 - 10 units		3.50	4.34	5.09	5.98	6.81	7.75
Tier 3	10.01 - 20 units		4.00	5.13	6.02	7.07	8.05	9.16
Tier 4	20.01 + units		4.50	5.92	6.94	8.15	9.27	10.55
<i>1 unit = one hundred cubic feet = 748 gallons</i>								
<b>For 1-1/2", 2" and 3" Meters</b>			<u>Rate Per Unit (\$/hcf)</u>					
Unit rate for all water use			\$3.79	\$4.43	\$5.09	\$5.85	\$6.55	\$7.34
<i>1 unit = one hundred cubic feet = 748 gallons</i>								
<b>PRIVATE FIRE PROTECTION CHARGES</b>								
<u>Svc Size</u>	<u>Accounts</u>	<u>Capacity</u>	<u>Monthly Rate</u>					
2"	1	160 gpm	\$12.62	\$14.06	\$15.89	\$17.95	\$19.84	\$21.91
3"	0	300 gpm	25.25	26.36	29.79	33.66	37.20	41.08
4"	6	500 gpm	50.50	43.94	49.66	56.09	62.00	68.47
6"	4	1,000 gpm	75.76	87.88	99.31	112.19	124.00	136.94
8"	7	1,600 gpm	113.62	140.60	158.90	179.50	198.40	219.10



Table 5  
 Joshua Basin Water District  
 Bill Impacts (3/4" & 1" Meter)

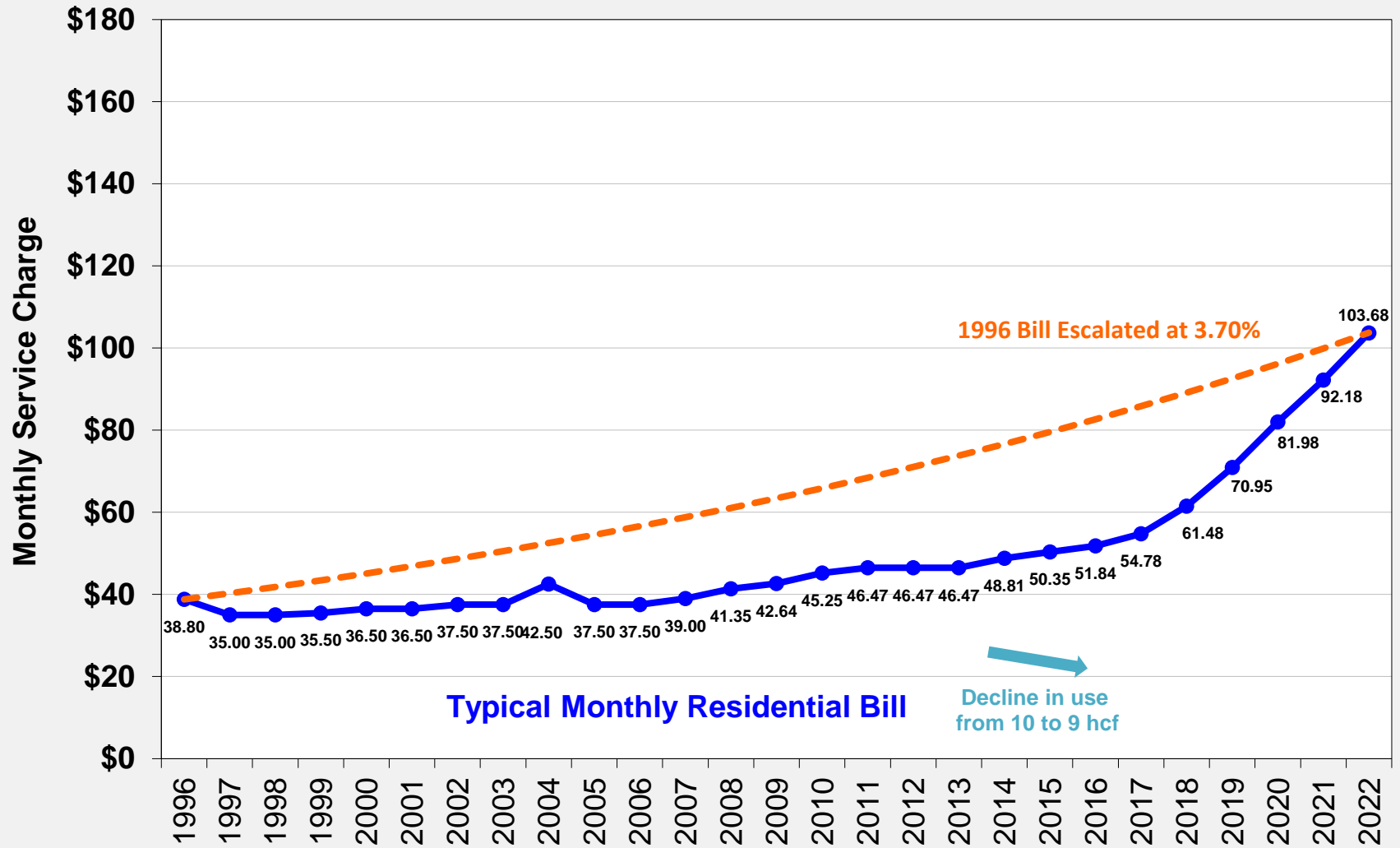
Scenario 3  
 \$15M Debt for CIP & Meter Replacements  
 40% Fixed Rate Recovery with Steeper Tiers

Projected Rate Impacts										
Level of Use	Monthly Use	% of Bills at or Below	Current	Projected Monthly Water Bills					5-Year Avg Annual Impact	Avg Annual Impact
				2018	2019	2020	2021	2022		
<b>LOW</b>	<b>3 hcf</b>	<b>30%</b>	<b>\$34.78</b>	<b>\$37.02</b>	<b>\$42.27</b>	<b>\$48.30</b>	<b>\$53.84</b>	<b>\$60.04</b>		
			Increase \$	2.24	5.25	6.03	5.54	6.20	25.26	5.05
			Increase %	6.4%	14.2%	14.3%	11.5%	11.5%	72.6%	11.5%
<b>MEDIAN</b>	<b>6 hcf</b>	<b>55%</b>	<b>\$44.28</b>	<b>\$48.46</b>	<b>\$55.68</b>	<b>\$64.04</b>	<b>\$71.75</b>	<b>\$80.43</b>		
			Increase \$	4.18	7.22	8.36	7.71	8.68	36.15	7.23
			Increase %	9.4%	14.9%	15.0%	12.0%	12.1%	81.6%	12.7%
<b>AVERAGE</b>	<b>9 hcf</b>	<b>73%</b>	<b>\$58.28</b>	<b>\$65.82</b>	<b>\$76.04</b>	<b>\$87.96</b>	<b>\$98.99</b>	<b>\$111.43</b>		
			Increase \$	7.54	10.22	11.92	11.03	12.44	53.15	10.63
			Increase %	12.9%	15.5%	15.7%	12.5%	12.6%	91.2%	13.8%
<b>MOD-HIGH</b>	<b>20 hcf</b>	<b>90%</b>	<b>\$98.28</b>	<b>\$117.12</b>	<b>\$136.24</b>	<b>\$158.66</b>	<b>\$179.49</b>	<b>\$203.03</b>		
			Increase \$	18.84	19.12	22.42	20.83	23.54	104.75	20.95
			Increase %	19.2%	16.3%	16.5%	13.1%	13.1%	106.6%	15.6%
<b>HIGH</b>	<b>30 hcf</b>	<b>95%</b>	<b>\$188.28</b>	<b>\$235.52</b>	<b>\$275.04</b>	<b>\$321.66</b>	<b>\$364.89</b>	<b>\$414.03</b>		
			Increase \$	47.24	39.52	46.62	43.23	49.14	225.75	45.15
			Increase %	25.1%	16.8%	17.0%	13.4%	13.5%	119.9%	17.1%

# Joshua Basin Water District

## Historical Monthly Charges for a Typical Home

Scenario 3  
\$15M Debt for CIP & Meter Repls



**Scenario 3 - \$15 Million Debt for CIP & Meter Replacements**  
**Summary of Cash Flow Projections (\$ millions)**

<b>Fiscal Year</b>	<b>17/18</b>	<b>18/19</b>	<b>19/20</b>	<b>20/21</b>	<b>21/22</b>	<b>22/23</b>	<b>23/24</b>	<b>24/25</b>	<b>25/26</b>	<b>26/27</b>
<b>Overall Rate Increases</b> Effective January 1	<b>15%</b>	<b>15%</b>	<b>15%</b>	<b>12%</b>	<b>12%</b>	<b>15%</b>	<b>15%</b>	<b>15%</b>	<b>12%</b>	<b>12%</b>
<b>Beginning Fund Reserves</b>	<b>\$7.2</b>	<b>\$6.6</b>	<b>\$5.8</b>	<b>\$5.3</b>	<b>\$5.3</b>	<b>\$5.8</b>	<b>\$6.3</b>	<b>\$5.8</b>	<b>\$5.8</b>	<b>\$6.0</b>
<b>REVENUES</b>										
Water Rate Revenues	3.8	4.3	4.9	5.5	6.1	6.9	7.8	8.8	9.9	11.0
Standby Revs/Prop Taxes	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Other Revenues	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Subtotal	5.8	6.4	7.1	7.7	8.3	9.1	10.0	11.1	12.2	13.3
SRF Grant Proceeds	0.1	0.0	0.0	0.2	10.0	0.0	0.0	0.0	0.0	0.0
SRF Loan Proceeds	0.0	0.0	0.0	1.5	0.0	4.0	0.0	0.0	0.0	0.0
Debt Proceeds	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	0.1	15.0	-	1.7	10.0	4.0	-	-	-	-
<b>Total</b>	<b>5.9</b>	<b>21.4</b>	<b>7.1</b>	<b>9.4</b>	<b>18.3</b>	<b>13.1</b>	<b>10.0</b>	<b>11.1</b>	<b>12.2</b>	<b>13.3</b>
<b>EXPENSES</b>										
Operating Expenses	5.2	5.7	6.0	6.2	6.5	7.2	7.8	8.1	8.5	8.8
Debt Service	0.0	1.1	1.1	1.1	1.1	1.1	1.3	1.3	1.3	1.3
Total Capital Expenses	1.3	15.5	0.5	2.2	10.3	4.3	1.4	1.6	2.2	2.9
<b>Total</b>	<b>6.5</b>	<b>22.2</b>	<b>7.5</b>	<b>9.4</b>	<b>17.8</b>	<b>12.5</b>	<b>10.5</b>	<b>11.1</b>	<b>12.0</b>	<b>13.1</b>
<b>Revenues Less Expenses</b>	<b>(0.6)</b>	<b>(0.8)</b>	<b>(0.4)</b>	<b>(0.1)</b>	<b>0.5</b>	<b>0.5</b>	<b>(0.5)</b>	<b>0.0</b>	<b>0.2</b>	<b>0.2</b>
<b>Ending Fund Reserves</b>	<b>6.6</b>	<b>5.8</b>	<b>5.3</b>	<b>5.3</b>	<b>5.8</b>	<b>6.3</b>	<b>5.8</b>	<b>5.8</b>	<b>6.0</b>	<b>6.2</b>
Min Fund Reserve Target	3.6	4.4	4.5	4.6	4.8	5.1	5.6	5.7	5.9	6.1
Max Fund Reserve Target	7.2	8.8	9.0	9.3	9.5	10.3	11.1	11.4	11.8	12.1
Debt Service Coverage	-	0.68	1.04	1.39	1.73	1.74	1.66	2.23	2.80	3.38

# **Joshua Basin Water District**

## **Financial & Rate Projections**

### Scenario 4

\$15 Million Debt for CIP & Meter Replacements

No Chrome 6 Treatment

40% Fixed Rate Revenue Recovery

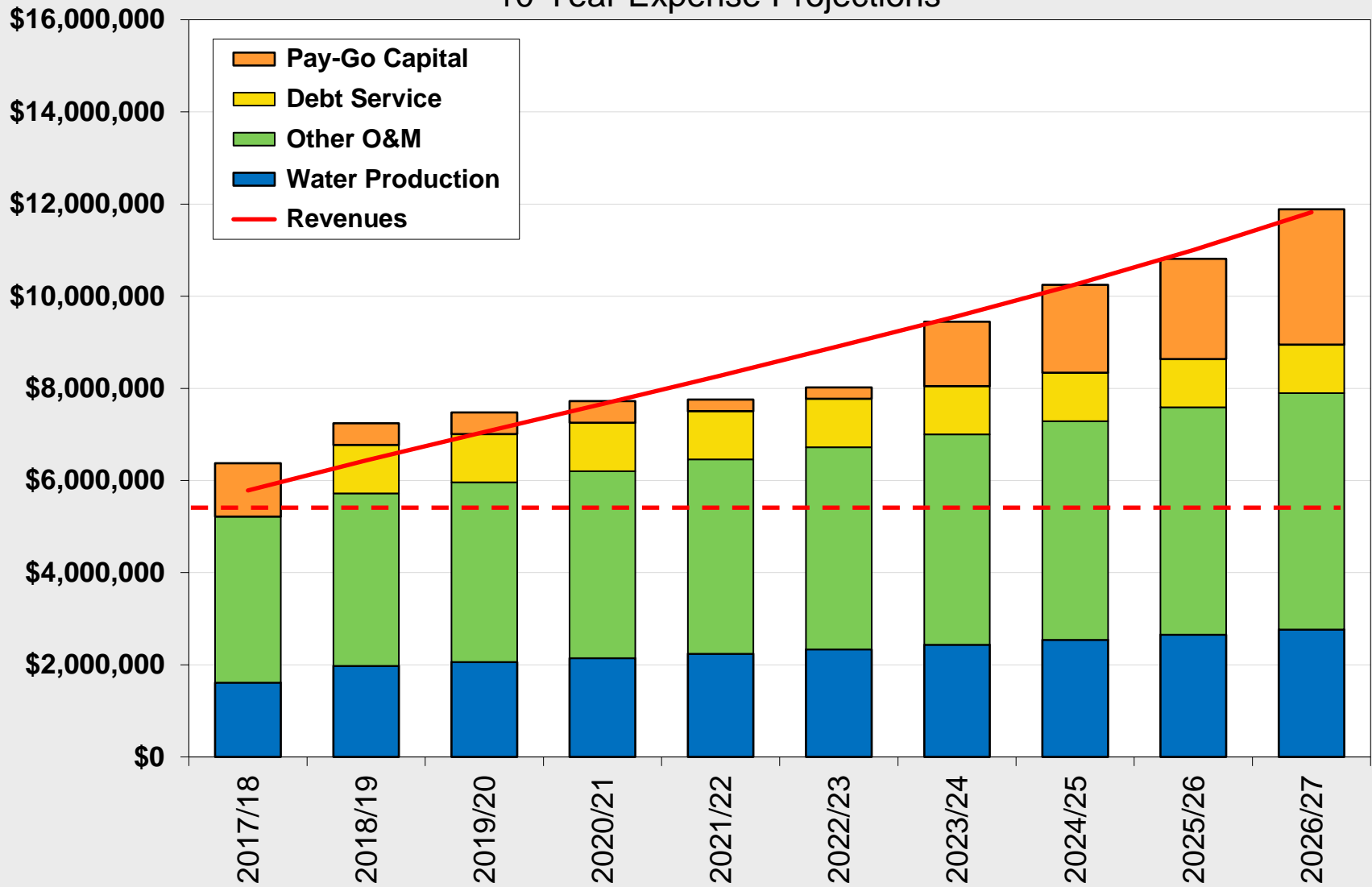
Steeper Water Rate Tiers

<b>Table 1</b>		<b>Cash Flow Projections: \$15M Debt, No Cr-6</b>				<b>Years 0 - 5</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
		<b>Projected 2017/18</b>	<b>Projected 2018/19</b>	<b>Projected 2019/20</b>	<b>Projected 2020/21</b>	<b>Projected 2021/22</b>
1	Effective Date of Rate Adjustment	Mar-1	Jan-1	Jan-1	Jan-1	Jan-1
2	Rate Adjustment %	15%	15%	15%	12%	12%
4	Growth: New EDUs	10	10	10	10	10
5	Growth in Billable EDUs %	0.2%	0.2%	0.2%	0.2%	0.2%
6	Wtr Demand Elasticity (Response to Rate Incr)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
7	Change in Water Use After Rate Increase	-3.0%	-3.0%	-3.0%	-2.4%	-2.4%
8	Water Purchases from MWA (AF)	500	1,000	1,000	1,000	1,000
9	MWA Rate per AF	\$569	\$597	\$627	\$658	\$691
10	Interest Earnings Rate	1.0%	1.5%	2.0%	2.0%	2.0%
11	Annual Cost Escalator	4.0%	4.0%	4.0%	4.0%	4.0%
12	<b>Beginning Fund Reserves</b>	\$7,151,000	\$6,563,000	\$5,756,000	\$5,332,000	\$5,271,000
13	<b>REVENUES</b>					
14	Basic Monthly Fees	1,584,000	1,846,000	2,128,000	2,417,000	2,713,000
15	Water Usage Charges	1,894,000	2,169,000	2,419,000	2,673,000	2,922,000
16	Locked Meter Charges	286,000	326,000	375,000	426,000	477,000
17	Standby Revenue	1,140,000	1,139,000	1,138,000	1,137,000	1,136,000
18	Property Taxes	428,000	437,000	446,000	455,000	464,000
19	Private Fire Svc & Special Services	137,000	140,000	143,000	146,000	149,000
20	Water Capacity & Meter Install Fees	53,000	53,000	54,000	55,000	56,000
21	Interest Earnings	50,000	98,000	115,000	107,000	105,000
22	HDMC WWTP Reimbs (+22%)	200,000	207,000	216,000	224,000	233,000
23	Other Revenues	12,000	20,000	20,000	20,000	20,000
24	<b>Total Revenues</b>	<b>5,784,000</b>	<b>6,435,000</b>	<b>7,054,000</b>	<b>7,660,000</b>	<b>8,275,000</b>
25	SRF Grants	100,000				
26	SRF Loans					
27	Debt Proceeds		15,000,000			
28	<b>EXPENSES</b>					
29	<b>Operating &amp; Maintenance</b>					
30	Production	1,324,000	1,377,000	1,432,000	1,489,000	1,549,000
31	Recharge Water Purchases from MWA	287,000	597,000	627,000	658,000	691,000
32	Distribution	1,000,000	1,040,000	1,082,000	1,125,000	1,170,000
33	Customer Service	489,000	509,000	529,000	550,000	572,000
34	Administration	1,048,000	1,090,000	1,134,000	1,179,000	1,226,000
35	Engineering	237,000	246,000	256,000	266,000	277,000
36	Finance	533,000	554,000	576,000	599,000	623,000
37	Personnel & Legal	134,000	139,000	145,000	151,000	157,000
38	HDMC WWTP Operations (reimbursable)	163,000	170,000	177,000	184,000	191,000
39	Chrome 6 Operations	0	0	0	0	0
40	<b>Subtotal</b>	<b>5,215,000</b>	<b>5,722,000</b>	<b>5,958,000</b>	<b>6,201,000</b>	<b>6,456,000</b>
41	<b>Debt Service</b>					
42	Projected Debt Service	-	1,050,000	1,050,000	1,050,000	1,050,000
43	Chrome 6 SRF Loan Repayment	-	-	-	-	-
44	<b>Subtotal</b>	<b>0</b>	<b>1,050,000</b>	<b>1,050,000</b>	<b>1,050,000</b>	<b>1,050,000</b>
45	<b>Capital/Non-Operating</b>					
46	Capital Improvements	700,000	15,000,000	-	-	-
47	Annual Project Funding	237,000	250,000	250,000	250,000	250,000
48	Chromium 6 Project	100,000	0	0	0	0
49	Morongo Basin Pipeline Debt Reimbs	220,000	220,000	220,000	220,000	0
50	<b>Subtotal</b>	<b>1,257,000</b>	<b>15,470,000</b>	<b>470,000</b>	<b>470,000</b>	<b>250,000</b>
51	<b>Total Expenses</b>	<b>6,472,000</b>	<b>22,242,000</b>	<b>7,478,000</b>	<b>7,721,000</b>	<b>7,756,000</b>
52	<b>Revenues Less Expenses</b>	<b>(588,000)</b>	<b>(807,000)</b>	<b>(424,000)</b>	<b>(61,000)</b>	<b>519,000</b>
53	<b>Ending Fund Reserves</b>	<b>6,563,000</b>	<b>5,756,000</b>	<b>5,332,000</b>	<b>5,271,000</b>	<b>5,790,000</b>
54	Debt Service Coverage	-	0.68	1.04	1.39	1.73
55	Min Fund Rsrv Target (50% O&M+Debt + \$1M)	3,607,500	4,386,000	4,504,000	4,625,500	4,753,000
56	Max Fund Rsrv Target (100% O&M+Debt + \$2M)	7,215,000	8,772,000	9,008,000	9,251,000	9,506,000
57	Annual pay-go funding generated for CIP	349,000	(557,000)	(174,000)	189,000	769,000

<b>Table 1</b>		<b>Cash Flow Projections: \$15M Debt, No Cr-6</b>					<b>Year 6 - 10</b>
		<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	
		<b>Projected 2022/23</b>	<b>Projected 2023/24</b>	<b>Projected 2024/25</b>	<b>Projected 2025/26</b>	<b>Projected 2026/27</b>	<b>Esc Factor</b>
1	Effective Date of Rate Adjustment	Jan-1	Jan-1	Jan-1	Jan-1	Jan-1	
2	Rate Adjustment %	10%	10%	10%	10%	10%	
4	Growth: New EDUs	10	10	10	10	10	
5	Growth in Billable EDUs %	0.2%	0.2%	0.2%	0.2%	0.2%	
6	Wtr Demand Elasticity (Response to Rate Incr)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	
7	Change in Annual Water Consumption	-2.0%	-2.0%	-2.0%	-2.0%	-2.0%	
8	Water Purchases from MWA (AF)	1,000	1,000	1,000	1,000	1,000	
9	MWA Rate per AF	\$726	\$762	\$800	\$840	\$882	5.0%
10	Interest Earnings Rate	2.0%	2.0%	2.0%	2.0%	2.0%	
11	Annual Cost Escalator	4.0%	4.0%	4.0%	4.0%	4.0%	
12	<b>Beginning Fund Reserves</b>	\$5,790,000	\$6,682,000	\$6,796,000	\$6,797,000	\$6,987,000	
13	<b>REVENUES</b>						
14	Basic Monthly Fees	3,016,000	3,325,000	3,664,000	4,039,000	4,452,000	
15	Water Usage Charges	3,173,000	3,421,000	3,687,000	3,975,000	4,285,000	
16	Locked Meter Charges	529,000	582,000	640,000	704,000	774,000	
17	Standby Revenue	1,135,000	1,134,000	1,133,000	1,132,000	1,131,000	
18	Property Taxes	473,000	482,000	492,000	502,000	512,000	2.0%
19	Private Fire Svc & Special Services	152,000	155,000	158,000	161,000	164,000	2.0%
20	Water Capacity & Meter Install Fees	57,000	57,000	58,000	59,000	60,000	
21	Interest Earnings	116,000	134,000	136,000	136,000	140,000	
22	HDMC WWTP Reimbs (+22%)	243,000	253,000	262,000	273,000	284,000	
23	Other Revenues	20,000	20,000	20,000	20,000	20,000	
24	<b>Total Revenues</b>	<b>8,914,000</b>	<b>9,563,000</b>	<b>10,250,000</b>	<b>11,001,000</b>	<b>11,822,000</b>	
25	Grants						
26	SRF Planning & Construction Loan						
27	Debt Proceeds						
28	<b>EXPENSES</b>						
29	<b>Operating &amp; Maintenance</b>						
30	Production	1,611,000	1,675,000	1,742,000	1,812,000	1,884,000	
31	Recharge Water Purchases from MWA	726,000	762,000	800,000	840,000	882,000	
32	Distribution	1,217,000	1,266,000	1,317,000	1,370,000	1,425,000	
33	Customer Service	595,000	619,000	644,000	670,000	697,000	
34	Administration	1,275,000	1,326,000	1,379,000	1,434,000	1,491,000	
35	Engineering	288,000	300,000	312,000	324,000	337,000	
36	Finance	648,000	674,000	701,000	729,000	758,000	
37	Personnel & Legal	163,000	170,000	177,000	184,000	191,000	
38	HDMC WWTP Operations (reimburseable)	199,000	207,000	215,000	224,000	233,000	
39	Chrome 6 Operations	0	0	0	0	0	
40	<b>Subtotal</b>	<b>6,722,000</b>	<b>6,999,000</b>	<b>7,287,000</b>	<b>7,587,000</b>	<b>7,898,000</b>	
41	<b>Debt Service</b>						
42	Projected Debt Service	1,050,000	1,050,000	1,050,000	1,050,000	1,050,000	
43	Chrome 6 SRF Loan Repayment	-	-	-	-	-	
44	<b>Subtotal</b>	<b>1,050,000</b>	<b>1,050,000</b>	<b>1,050,000</b>	<b>1,050,000</b>	<b>1,050,000</b>	
45	<b>Capital/Non-Operating</b>						
46	Capital Improvements (Pipes/Wells/Boosters)	-	1,000,000	1,500,000	1,750,000	2,500,000	
47	Annual Project Funding	250,000	400,000	412,000	424,000	437,000	3.0%
48	Chromium 6 Project	0	0	0	0	0	
49	Morongo Basin Pipeline Debt Reimbs	0	0	0	0	0	
50	<b>Subtotal</b>	<b>250,000</b>	<b>1,400,000</b>	<b>1,912,000</b>	<b>2,174,000</b>	<b>2,937,000</b>	
51	<b>Total Expenses</b>	<b>8,022,000</b>	<b>9,449,000</b>	<b>10,249,000</b>	<b>10,811,000</b>	<b>11,885,000</b>	
52	<b>Revenues Less Expenses</b>	<b>892,000</b>	<b>114,000</b>	<b>1,000</b>	<b>190,000</b>	<b>(63,000)</b>	
53	<b>Ending Fund Reserves</b>	<b>6,682,000</b>	<b>6,796,000</b>	<b>6,797,000</b>	<b>6,987,000</b>	<b>6,924,000</b>	
54	Debt Service Coverage	2.09	2.44	2.82	3.25	3.74	
55	Min Fund Rsrv Target (50% O&M+Debt + \$1M)	4,886,000	5,024,500	5,168,500	5,318,500	5,474,000	
56	Max Fund Rsrv Target (100% O&M+Debt + \$2M)	9,772,000	10,049,000	10,337,000	10,637,000	10,948,000	
57	Annual pay-go funding generated for CIP	1,142,000	1,514,000	1,913,000	2,364,000	2,874,000	

# Joshua Basin Water District 10-Year Expense Projections

Scenario 3  
\$15M Debt, No CR-6



Excludes capital projects funded by debt.

Table 2  
 Joshua Basin Water District  
 Fixed Meter Charge Calculation

	Mar-1 2018	Jan-1 2019	Jan-1 2020	Jan-1 2021	Jan-1 2022	
<b>Water Rate Revenue Recovery</b>						
Annualized Revenues w/ Increase	\$3,776,000	\$4,275,000	\$4,841,000	\$5,359,000	\$5,932,000	
<b>Fixed Rate Recovery</b>						
Cost Recovery Allocation %	40%	40%	40%	40%	40%	
Cost Recovery Allocation \$	\$1,510,400	\$1,710,000	\$1,936,400	\$2,143,600	\$2,372,800	
<b>Meter Equivalents</b>						
Existing Meter Equivalents	4,764	4,774	4,784	4,794	4,804	
Projected Growth	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	
Total	4,774	4,784	4,794	4,804	4,814	
<b>Rate per Meter Equivalent</b>						
Annual	\$316.41	\$357.47	\$403.95	\$446.25	\$492.94	
Monthly	26.37	29.79	33.66	37.19	41.08	
<b>Projected Fixed Monthly Meter Charges</b>						
<u>Meter Size</u>	<u>Capacity (gpm)</u>					
3/4" & 1"	30	\$26.37	\$29.79	\$33.66	\$37.19	\$41.08
1-1/2"	100	87.90	99.30	112.20	123.97	136.93
2"	160	140.64	158.88	179.52	198.35	219.09
3"	300	263.70	297.90	336.60	371.90	410.80
<b>Variable Rate Recovery</b>						
Cost Recovery Allocation %	60%	60%	60%	60%	60%	
Cost Recovery Allocation \$	\$2,265,600	\$2,565,000	\$2,904,600	\$3,215,400	\$3,559,200	
<b>Projected Water Use</b>	511,900	496,400	481,600	470,300	459,400	
<b>Average Rate per Unit (\$/hcf)</b>	\$4.43	\$5.17	\$6.03	\$6.84	\$7.75	



Table 3  
 Joshua Basin Water District  
 Projected Water Use & Consumption Charges

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22
<b>Projected Water Use</b>						
Change in Use After Rate Increase		-3.0%	-3.0%	-3.0%	-2.4%	-2.4%
Billed Use by Tier for 3/4" & 1" Meters (hcf)						
Tier 1	188,189	187,100	186,000	184,900	184,000	183,100
Tier 2	91,526	87,400	83,500	79,700	76,800	74,000
Tier 3	76,742	72,600	68,700	65,000	62,200	59,500
Tier 4	86,482	80,800	75,500	70,500	66,800	63,300
Subtotal	442,939	427,900	413,700	400,100	389,800	379,900
All Other Use (hcf)	85,275	84,000	82,700	81,500	80,500	79,500
Total (hcf)	528,214	511,900	496,400	481,600	470,300	459,400
Total (acre-feet)	1,213	1,175	1,140	1,106	1,080	1,055
Annual Change		-3.1%	-3.0%	-3.0%	-2.3%	-2.3%
Cumulative Change		-3.1%	-6.0%	-8.8%	-11.0%	-13.0%
<b>Projected Water Consumption Charges</b>						
Billed Use by Tier for 3/4" & 1" Meters (hcf)						
Tier 1	\$3.00	\$3.55	\$4.16	\$4.88	\$5.55	\$6.32
Tier 2	3.50	4.34	5.09	5.98	6.81	7.75
Tier 3	4.00	5.13	6.02	7.07	8.05	9.16
Tier 4	4.50	5.92	6.94	8.15	9.27	10.55
All Other Use (hcf)	\$3.79	\$4.43	\$5.16	\$6.03	\$6.83	\$7.75
Projected Revenues		\$2,266,159	\$2,563,376	\$2,904,578	\$3,214,345	\$3,559,506
Revenue Target		2,265,600	2,565,000	2,904,600	3,215,400	3,559,200
Difference %		0.0%	-0.1%	0.0%	0.0%	0.0%

Table 4  
 Joshua Basin Water District  
 Projected Water Rates

Scenario 3  
 \$15M Debt for CIP & Meter Replacements  
 40% Fixed Rate Recovery with Steeper Tiers

Effective	Current	Projected Water Rates				
		2018	2019	2020	2021	2022
<b>OVERALL RATE ADJUSTMENT</b>		<b>15%</b>	<b>15%</b>	<b>15%</b>	<b>12%</b>	<b>12%</b>

**BASIC MONTHLY FEE**

Meter Size	Accounts	Capacity	Monthly Rate					
3/4" & 1"	4,503	30 gpm	\$25.78	\$26.37	\$29.79	\$33.66	\$37.19	\$41.08
1-1/2"	28	100 gpm	85.93	87.90	99.30	112.20	123.97	136.93
2"	18	160 gpm	137.49	140.64	158.88	179.52	198.35	219.09
3"	7	300 gpm	257.79	263.70	297.90	336.60	371.90	410.80

**MONTHLY WATER FLOW CHARGES**

**For 3/4" and 1" Meters**

			Rate Per Unit (\$/hcf)					
Tier 1	0 - 5 units		\$3.00	\$3.55	\$4.16	\$4.88	\$5.55	\$6.32
Tier 2	5.01 - 10 units		3.50	4.34	5.09	5.98	6.81	7.75
Tier 3	10.01 - 20 units		4.00	5.13	6.02	7.07	8.05	9.16
Tier 4	20.01 + units		4.50	5.92	6.94	8.15	9.27	10.55

1 unit = one hundred cubic feet = 748 gallons

**For 1-1/2", 2" and 3" Meters**

			Rate Per Unit (\$/hcf)					
Unit rate for all water use			\$3.79	\$4.43	\$5.09	\$5.85	\$6.55	\$7.34

1 unit = one hundred cubic feet = 748 gallons

**PRIVATE FIRE PROTECTION CHARGES**

Svc Size	Accounts	Capacity	Monthly Rate					
2"	1	160 gpm	\$12.62	\$14.06	\$15.89	\$17.95	\$19.84	\$21.91
3"	0	300 gpm	25.25	26.36	29.79	33.66	37.20	41.08
4"	6	500 gpm	50.50	43.94	49.66	56.09	62.00	68.47
6"	4	1,000 gpm	75.76	87.88	99.31	112.19	124.00	136.94
8"	7	1,600 gpm	113.62	140.60	158.90	179.50	198.40	219.10

Table 5  
 Joshua Basin Water District  
 Bill Impacts (3/4" & 1" Meter)

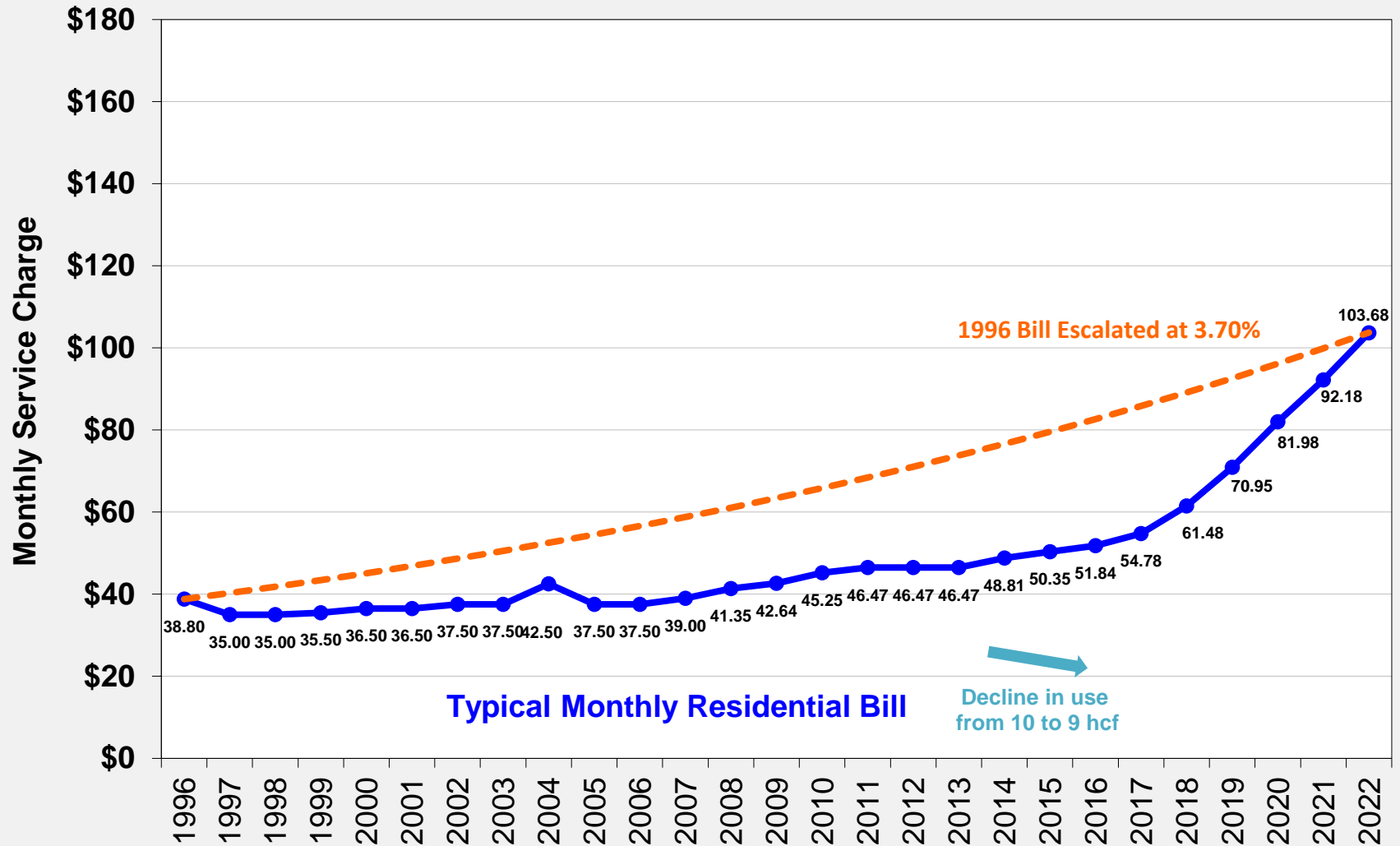
Scenario 3  
 \$15M Debt for CIP & Meter Replacements  
 40% Fixed Rate Recovery with Steeper Tiers

Projected Rate Impacts										
Level of Use	Monthly Use	% of Bills at or Below	Current	Projected Monthly Water Bills					5-Year Avg Annual Impact	Avg Annual Impact
				2018	2019	2020	2021	2022		
LOW	3 hcf	30%	<b>\$34.78</b>	<b>\$37.02</b>	<b>\$42.27</b>	<b>\$48.30</b>	<b>\$53.84</b>	<b>\$60.04</b>		
			Increase \$	2.24	5.25	6.03	5.54	6.20	25.26	5.05
			Increase %	6.4%	14.2%	14.3%	11.5%	11.5%	72.6%	11.5%
MEDIAN	6 hcf	55%	<b>\$44.28</b>	<b>\$48.46</b>	<b>\$55.68</b>	<b>\$64.04</b>	<b>\$71.75</b>	<b>\$80.43</b>		
			Increase \$	4.18	7.22	8.36	7.71	8.68	36.15	7.23
			Increase %	9.4%	14.9%	15.0%	12.0%	12.1%	81.6%	12.7%
AVERAGE	9 hcf	73%	<b>\$58.28</b>	<b>\$65.82</b>	<b>\$76.04</b>	<b>\$87.96</b>	<b>\$98.99</b>	<b>\$111.43</b>		
			Increase \$	7.54	10.22	11.92	11.03	12.44	53.15	10.63
			Increase %	12.9%	15.5%	15.7%	12.5%	12.6%	91.2%	13.8%
MOD-HIGH	20 hcf	90%	<b>\$98.28</b>	<b>\$117.12</b>	<b>\$136.24</b>	<b>\$158.66</b>	<b>\$179.49</b>	<b>\$203.03</b>		
			Increase \$	18.84	19.12	22.42	20.83	23.54	104.75	20.95
			Increase %	19.2%	16.3%	16.5%	13.1%	13.1%	106.6%	15.6%
HIGH	30 hcf	95%	<b>\$188.28</b>	<b>\$235.52</b>	<b>\$275.04</b>	<b>\$321.66</b>	<b>\$364.89</b>	<b>\$414.03</b>		
			Increase \$	47.24	39.52	46.62	43.23	49.14	225.75	45.15
			Increase %	25.1%	16.8%	17.0%	13.4%	13.5%	119.9%	17.1%

# Joshua Basin Water District

## Historical Monthly Charges for a Typical Home

Scenario 3  
\$15M Debt for CIP & Meter Repls



**Scenario 3 - \$15 Million Debt, No Chromium 6 Project**  
**Summary of Cash Flow Projections (\$ millions)**

<b>Fiscal Year</b>	<b>17/18</b>	<b>18/19</b>	<b>19/20</b>	<b>20/21</b>	<b>21/22</b>	<b>22/23</b>	<b>23/24</b>	<b>24/25</b>	<b>25/26</b>	<b>26/27</b>
<b>Overall Rate Increases</b> Effective January 1	15%	15%	15%	12%	12%	10%	10%	10%	10%	10%
<b>Beginning Fund Reserves</b>	\$7.2	\$6.6	\$5.8	\$5.3	\$5.3	\$5.8	\$6.7	\$6.8	\$6.8	\$7.0
<b>REVENUES</b>										
Water Rate Revenues	3.8	4.3	4.9	5.5	6.1	6.7	7.3	8.0	8.7	9.5
Standby Revs/Prop Taxes	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Other Revenues	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7
Subtotal	5.8	6.4	7.1	7.7	8.3	8.9	9.6	10.3	11.0	11.8
SRF Grant Proceeds	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SRF Loan Proceeds	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Debt Proceeds	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	0.1	15.0	-	-	-	-	-	-	-	-
<b>Total</b>	<b>5.9</b>	<b>21.4</b>	<b>7.1</b>	<b>7.7</b>	<b>8.3</b>	<b>8.9</b>	<b>9.6</b>	<b>10.3</b>	<b>11.0</b>	<b>11.8</b>
<b>EXPENSES</b>										
Operating Expenses	5.2	5.7	6.0	6.2	6.5	6.7	7.0	7.3	7.6	7.9
Debt Service	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Total Capital Expenses	1.3	15.5	0.5	0.5	0.3	0.3	1.4	1.9	2.2	2.9
<b>Total</b>	<b>6.5</b>	<b>22.2</b>	<b>7.5</b>	<b>7.7</b>	<b>7.8</b>	<b>8.0</b>	<b>9.4</b>	<b>10.2</b>	<b>10.8</b>	<b>11.9</b>
<b>Revenues Less Expenses</b>	<b>(0.6)</b>	<b>(0.8)</b>	<b>(0.4)</b>	<b>(0.1)</b>	<b>0.5</b>	<b>0.9</b>	<b>0.1</b>	<b>0.0</b>	<b>0.2</b>	<b>(0.1)</b>
<b>Ending Fund Reserves</b>	<b>6.6</b>	<b>5.8</b>	<b>5.3</b>	<b>5.3</b>	<b>5.8</b>	<b>6.7</b>	<b>6.8</b>	<b>6.8</b>	<b>7.0</b>	<b>6.9</b>
Min Fund Reserve Target	3.6	4.4	4.5	4.6	4.8	4.9	5.0	5.2	5.3	5.5
Max Fund Reserve Target	7.2	8.8	9.0	9.3	9.5	9.8	10.0	10.3	10.6	10.9
Debt Service Coverage	-	0.68	1.04	1.39	1.73	2.09	2.44	2.82	3.25	3.74

# **Joshua Basin Water District**

## **Additional Tables**

Rate Survey

Water Account Data

Water Usage Analysis

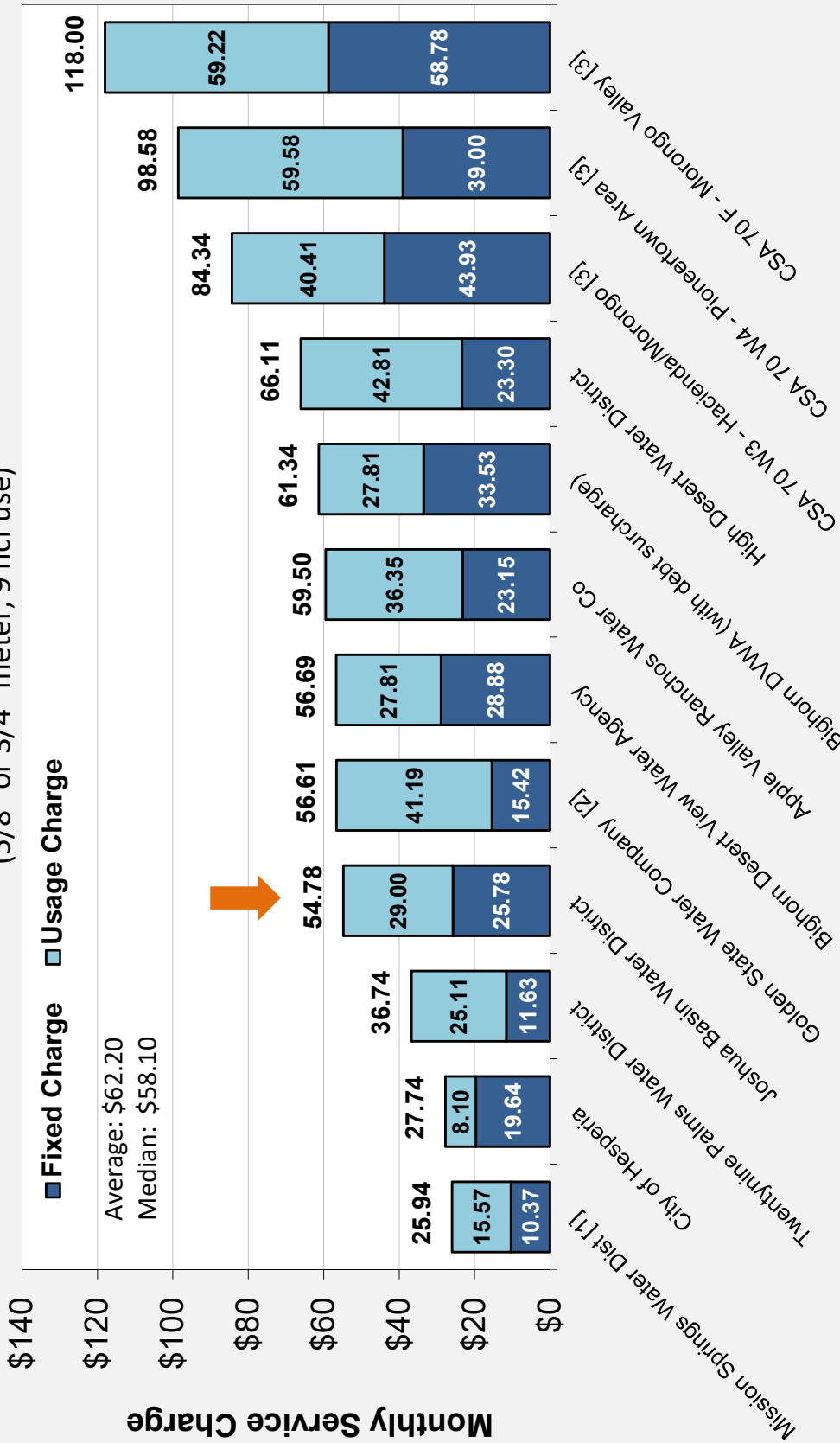
Table A-1  
 Joshua Basin Water District  
 Monthly Residential Water Rate Survey

	Fixed Charge	Residential Usage Charges		Monthly Service Charges		
		Tiers	Rate per hcf	4 hcf	9 hcf	15 hcf
Mission Springs Water Dist [1]	10.37	2 tiers	1.73 - 2.36	17.29	25.94	37.58
City of Hesperia	19.64	4 tiers	0.90 - 2.24	23.24	27.74	36.39
Twentynine Palms Water District	11.63	uniform block	2.79	22.79	36.74	53.48
<b>Joshua Basin Water District</b>	<b>25.78</b>	<b>4 tiers</b>	<b>3.00 - 4.50</b>	<b>37.78</b>	<b>54.78</b>	<b>78.28</b>
Golden State Water Company [2]	15.42	3 tiers	3.85 - 5.09	33.73	56.61	85.23
Bighorn Desert View Water Agency	28.88	uniform block	3.09	41.24	56.69	75.23
Bighorn DVWA (with debt surcharge)	33.53	uniform block	3.09	45.89	61.34	79.88
Apple Valley Ranchos Water Co	23.15	3 tiers	4.039 - 5.315	39.31	59.50	85.65
High Desert Water District	23.30	4 tiers	3.59 - 9.08	37.66	66.11	106.25
CSA 70 W3 - Hacienda/Morongo [3]	43.93	3 tiers	4.49 - 5.94	61.89	84.34	111.95
CSA 70 W4 - Pioneertown Area [3]	39.00	4 tiers	6.62 - 10.07	65.48	98.58	143.25
CSA 70 F - Morongo Valley [3]	58.78	3 tiers	6.58 - 8.70	85.10	118.00	158.47
Average	27.78			42.62	62.20	87.64
Median	24.54			38.54	58.10	82.56

1 Serves City of Desert Hot Springs.  
 2 Serves Barstow/Apple Valley/Lucerne Valley and other areas; bills include approximately \$0.73 per hcf in surcharges.  
 3 San Bernardino County Service Area.

# Joshua Basin Water District

Survey of Typical Monthly Residential Water Bills, Sept-2017  
(5/8" or 3/4" meter, 9 hcf use)



1 Serves City of Desert Hot Springs. 2 Barstow/Apple Valley/Lucerne & other areas. 3 San Bernardino County Service Area.



Table A-2  
 Joshua Basin Water District  
 Active Accounts by Customer Class & Meter Size 2016/17

Meter Size	Single Family Residential	Multi-Family Residential	Commercial & Institutional	Total	% of Total
<b>Accounts</b>					
3/4"	4,143	43	139	4,325	94.9%
1"	130	26	22	178	3.9%
1-1/2"	2	17	9	28	0.6%
2"	1	2	15	18	0.4%
3"	<u>0</u>	<u>1</u>	<u>6</u>	<u>7</u>	<u>0.2%</u>
Total	4,275	90	192	4,557	100.0%
% of Total	93.8%	2.0%	4.2%	100.0%	
<b>Billed Water Use</b>					
3/4"	392,583	9,181	18,325	420,089	79.5%
1"	15,278	4,425	6,713	26,416	5.0%
1-1/2"	120	17,434	5,406	22,960	4.3%
2"	23	2,112	28,380	30,515	5.8%
3"	<u>0</u>	<u>4,298</u>	<u>23,936</u>	<u>28,234</u>	<u>5.3%</u>
Total	408,004	37,450	82,760	528,214	100.0%
% of Total	77.2%	7.1%	15.7%	100.0%	
<b>Average Monthly Use per Account</b>					
3/4"	7.9	17.6	11.0	8.1	
1"	9.8	14.1	25.0	12.4	
1-1/2"	5.0	85.0	48.7	67.5	
2"	1.9	88.0	157.7	141.3	
3"	<u>n/a</u>	<u>358.2</u>	<u>332.4</u>	<u>336.1</u>	
Total	8.0	34.8	36.0	9.7	

Table A-3  
 Joshua Basin Water District  
 Bills & Use by Tier  
 For 3/4" & 1" Meters

<b>Bills &amp; Use in Tier 2016/17</b>			
	Monthly Use	Bills Ending in Tier %	Water Use in Tier
Tier 1	0 - 5 hcf	55.4%	42.5%
Tier 2	5.01 - 10 hcf	22.6%	20.7%
Tier 3	10.01 - 20 hcf	13.9%	17.3%
Tier 4	20.01 + hcf	8.1%	19.5%

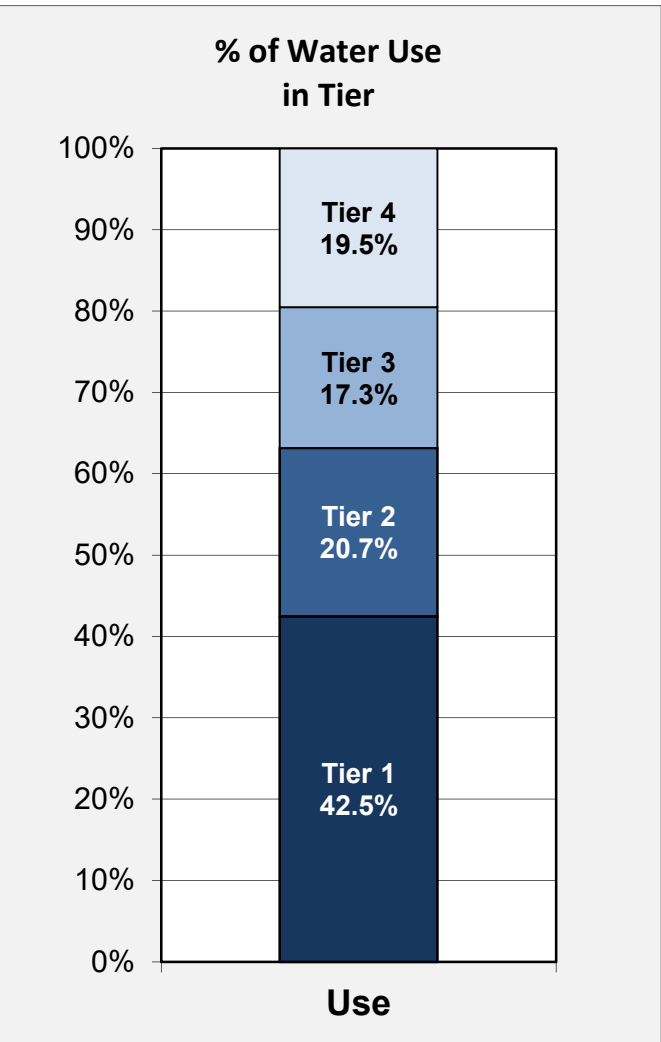
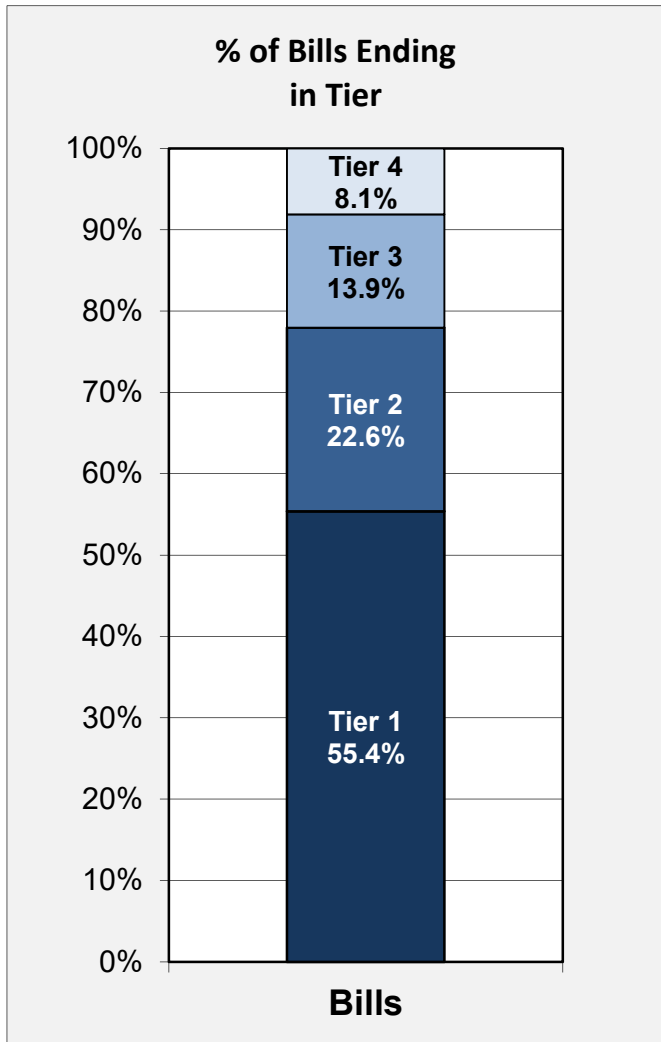


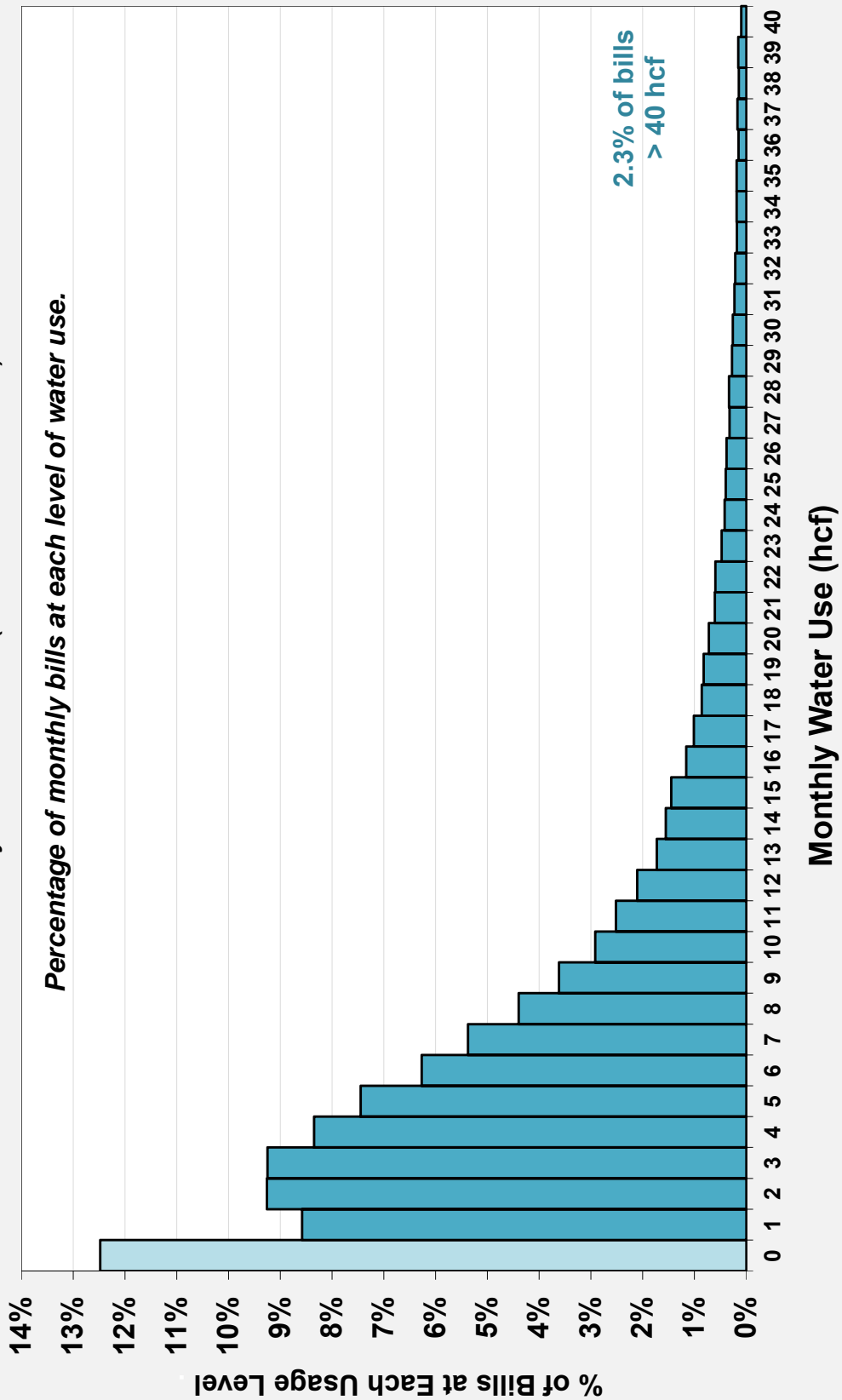
Table A-4  
 Joshua Basin Water District  
 Consumption Block Analysis (3/4" & 1" Meters) 2016/17

Average Monthly Use: 8.2 hcf  
 Median Monthly Use: 5.0 hcf  
 Avg Use (Excl Bills with No Use): 9.4 hcf  
 Median Use (Excl Bills with No Use): 6.0 hcf

Monthly Use (hcf)	Number of Bills				Water Use (hcf)		Use Through Break	
	In Block	% of Total	Cumulative	Cumulative %	In Block	% of Ttl	Use (hcf)	% of Ttl
0	6,736	12.5%	6,736	12.5%	0	0.0%	0	0.0%
1	4,632	8.6%	11,368	21.1%	4,632	1.0%	47,239	10.7%
2	4,997	9.3%	16,365	30.3%	9,994	2.3%	89,846	20.3%
3	4,991	9.2%	21,356	39.6%	14,973	3.4%	127,456	28.8%
4	4,505	8.3%	25,861	47.9%	18,020	4.1%	160,075	36.1%
5	4,021	7.4%	29,882	55.4%	20,105	4.5%	188,189	42.5%
6	3,385	6.3%	33,267	61.6%	20,310	4.6%	212,282	47.9%
7	2,901	5.4%	36,168	67.0%	20,307	4.6%	232,990	52.6%
8	2,372	4.4%	38,540	71.4%	18,976	4.3%	250,797	56.6%
9	1,952	3.6%	40,492	75.0%	17,568	4.0%	266,232	60.1%
10	1,576	2.9%	42,068	77.9%	15,760	3.6%	279,715	63.1%
11	1,360	2.5%	43,428	80.5%	14,960	3.4%	291,622	65.8%
12	1,137	2.1%	44,565	82.6%	13,644	3.1%	302,169	68.2%
13	932	1.7%	45,497	84.3%	12,116	2.7%	311,579	70.3%
14	840	1.6%	46,337	85.8%	11,760	2.7%	320,057	72.3%
15	783	1.5%	47,120	87.3%	11,745	2.7%	327,695	74.0%
16	625	1.2%	47,745	88.5%	10,000	2.3%	334,550	75.5%
17	547	1.0%	48,292	89.5%	9,299	2.1%	340,780	76.9%
18	464	0.9%	48,756	90.3%	8,352	1.9%	346,463	78.2%
19	444	0.8%	49,200	91.2%	8,436	1.9%	351,682	79.4%
20	391	0.7%	49,591	91.9%	7,820	1.8%	356,457	80.5%
21	328	0.6%	49,919	92.5%	6,888	1.6%	360,841	81.5%
22	323	0.6%	50,242	93.1%	7,106	1.6%	364,897	82.4%
23	256	0.5%	50,498	93.6%	5,888	1.3%	368,630	83.2%
24	227	0.4%	50,725	94.0%	5,448	1.2%	372,107	84.0%
25	214	0.4%	50,939	94.4%	5,350	1.2%	375,357	84.7%
26	207	0.4%	51,146	94.8%	5,382	1.2%	378,393	85.4%
27	176	0.3%	51,322	95.1%	4,752	1.1%	381,222	86.1%
28	181	0.3%	51,503	95.4%	5,068	1.1%	383,875	86.7%
29	150	0.3%	51,653	95.7%	4,350	1.0%	386,347	87.2%
30	140	0.3%	51,793	96.0%	4,200	0.9%	388,669	87.7%
31	123	0.2%	51,916	96.2%	3,813	0.9%	390,851	88.2%
32	114	0.2%	52,030	96.4%	3,648	0.8%	392,910	88.7%
33	98	0.2%	52,128	96.6%	3,234	0.7%	394,855	89.1%
34	102	0.2%	52,230	96.8%	3,468	0.8%	396,702	89.6%
35	101	0.2%	52,331	97.0%	3,535	0.8%	398,447	90.0%
36	80	0.1%	52,411	97.1%	2,880	0.7%	400,091	90.3%
37	91	0.2%	52,502	97.3%	3,367	0.8%	401,655	90.7%
38	77	0.1%	52,579	97.4%	2,926	0.7%	403,128	91.0%
39	85	0.2%	52,664	97.6%	3,315	0.7%	404,524	91.3%
40	53	0.1%	52,717	97.7%	2,120	0.5%	405,835	91.6%
41	58	0.1%	52,775	97.8%	2,378	0.5%	407,093	91.9%
42	62	0.1%	52,837	97.9%	2,604	0.6%	408,293	92.2%
43	59	0.1%	52,896	98.0%	2,537	0.6%	409,431	92.4%
44	56	0.1%	52,952	98.1%	2,464	0.6%	410,510	92.7%
45	55	0.1%	53,007	98.2%	2,475	0.6%	411,533	92.9%
46	45	0.1%	53,052	98.3%	2,070	0.5%	412,501	93.1%
47	33	0.1%	53,085	98.4%	1,551	0.4%	413,424	93.3%
48	45	0.1%	53,130	98.4%	2,160	0.5%	414,314	93.5%
49	50	0.1%	53,180	98.5%	2,450	0.6%	415,159	93.7%
50	38	0.1%	53,218	98.6%	1,900	0.4%	415,954	93.9%
51-75	441	0.8%	53,659	99.4%	26,744	6.0%	428,548	96.8%
76-100	168	0.3%	53,827	99.7%	14,382	3.2%	434,030	98.0%
101-200	127	0.2%	53,954	100.0%	16,798	3.8%	440,228	99.4%
201+	21	0.0%	53,975	100.0%	6,911	1.6%	442,939	100.0%
Total	53,975	100.0%			442,939	100.0%		

# Joshua Basin Water District

## Distribution of Monthly Water Bills (3/4" & 1" Meters) 2016/17



# Joshua Basin Water District Historical Water Use (hcf)

